

THE VALLEY OF THE

HENRY stopped and squatted in the underbrush, well hidden from the path but close enough to see the coming group. Within a minute they became visible. There were twenty-five to thirty boys, girls and youths walking slowly in ragged groups, talking and laughing. The youngest were ahead, a group just entering their teens, dressed like the rest in jackets and shorts, with sandals of plast on their feet. The dark, synthetic cloth made them a uniformed body.

Henry's nose wrinkled in distaste. Again his hideaway would be invaded and he would have to move on. But where to?

They were opposite him now, a bare twenty feet away. Most of them looked as alike as brothers and sisters, logically enough; there was not one who wasn't a cousin in some degree to the others. Plump, round-faced and dull-eyed, they lived from cradle to grave according to custom. It was the custom, when they were old enough to feel the urge, to join a group like this. Together they tramped the valley from spring to fall, gathering fruit and nuts as they came in season. When a couple felt like settling down they awaited a vacant Mastership—a plot of orchard and the house that went with it—and moved in. They took over the responsi-

His sin was curiosity — his crime was witchcraft — but Henry's real offense against his strange world was that it was dying — and he wanted it to live!

MASTERS

bilities of the place and bred or adopted the three children necessary to hold it. They remained there until they became Elders. Then they moved into Town, where they worked in the factories, idled and gossiped until death overtook them.

They were ignorant, superstitious, living out their dull routine as generations before them had. Only a few questioned it. Almost none made any active challenge.

The youngsters sighted the tavern and made for it at a dead run, wanting to claim favorable bunks before the others arrived.

Henry was impatient. Ants were crawling over his foot, but it would never do for him

to be seen, especially in the woods. One didn't go into them. They were inhabited by goblins, ghosts and fearsome animals.

Finally they were past. He straightened, started to step into the path, then squatted again quickly. Coming alone, behind the others, was the girl.

Her slimness and pale hair made her stand out from the rest. His thoughts had been upon her since that day when his group passed the house of her father, an avocado Master, down in the lower valley. She had called to them to wait, had run inside to come back with her two pouches, one for her personal belongings, the other for food. Liv-

ing on a fruit diet as they did, they ate most of their awakened hours.

"I'm Theta!" she called out happily as she joined them. "Mama says I'm old enough to go with you." She recognized a cousin and ran over to join her, her hair a spot of brightness among the dark. He wanted her from that moment, but she was far too young. He would have to wait.

COMING towards Theta from the opposite direction was the slap of flat feet.

In a moment Henry recognized Ole. He was considerably older than the others; his only object in life was enjoying all the young girls who joined the group. He was a bulky dullard and a bully, his eyes small and mean.

It was evident that he was looking for the girl. A pleased expression spread over his face when he saw her. She stopped abruptly, looking about for a way to flee, but the path was enclosed by woods and Ole was on her.

"Leave me alone!" she cried in anger as his hand closed about her wrist. Henry could see disgust for him in her eyes. Why didn't she let him have what he wanted and be done with him? That was the way most of the girls responded.

"Won't have anything to do with me, eh?" gloated Ole.

"Think you are too good for us! I been watching you, asking about you. None of the boys have had you ... but you won't get by me!"

Henry felt a surge of sympathy for her, fed by his dislike for the other. He slipped into the path. He was almost up to them before he was seen. Ole swung about, still holding the girl. Henry stopped six feet off.

"Why don't you let her alone if she doesn't want you?" he asked with deceiving mildness, apparently relaxed.

There was startled fright in Ole's eyes. Henry had appeared so suddenly, from nowhere. Worse, he was proscribed. He was accused of learning witchery.

Henry was taller than Ole, but thin and almost weak looking. This would be something to boast about: capturing the witch singlehanded, bringing him in for punishment!

"Make me let her alone, then!" he challenged.

It was usual to boast and strut before fighting. Henry took the advantage of immediate attack. He sprang at the other, catching him before he unhandled the girl, with a right to the jaw, a left to the belly.

Theta ran about fifty feet down the path, then turned to watch. Ole, head down, was closing in to grip his opponent, but Henry stepped to

one side, coming up with a blow to Ole's right eye. Ole raised his guard and Henry sank both fists into the other's stomach.

Ole doubled up.

There was no fight in him. He plunged past Henry, down the path towards the tavern. Henry faced the girl. She came towards him without hesitation.

"Thank you," she said. "I shouldn't have left the others. I didn't think he had noticed."

She walked slowly towards the tavern, Henry beside her. The past year had made her taller, filled her out. Yet the sweetness of her expression was the same, and the vitality in her face and eyes.

"He's been after you then?"

She nodded. "Him and a couple of others."

It was just a turn in the path to sight of the tavern. Henry halted.

"You seem to forget I'm proscribed," he reminded her.

"I don't care! I like you—always have." Her voice became tragic, "Why did you go into that awful learning house?"

"I got tired of wondering—wondering what kept the food in the bins fresh, how it got from the hoppers in the fields to the bins. What made the light and heat. Where the water came from."

"But the Old Ones did it all by magic!"

"What kind of magic?" His face had a slightly mocking expression. "If that was so why are things beginning to break down? Magic should go on forever."

FROM the direction of the tavern came sounds of shouting. He smiled at her. "You'd better go on before they think I've turned you into a bat."

"Henry—" she began, but she had lingered too long. The whole group rounded the turn, trotting, their faces twisted in superstitious fury. They raised their arms when they sighted the two. Each hand had a stone in it.

"She's one of them too!" screamed fat, malicious Heccla, seeing a chance to vent her envy. "They're planning something! Throw! Throw!"

Her voice was a hysterical shriek. Henry saw the stones in the air. Grasping the girl's wrist he drew her into the brush beside the path.

He stopped his flight under an ancient tree and let go her wrist.

"See," he said, "even to speak to me is dangerous."

She tossed her head and brushed the hair from her brow, her eyes scornful. "I don't care. I'm sick of them."

"You can go back. Give them some fancy tale about my hexing you, but say that you crossed two sticks or something and got away."

She looked him squarely in

the face, her own composed and determined. "I'd rather stay with you."

He dropped to a jutting rock and scraped at the dead leaves with the heel of his sandal.

"It's not nice," he began, "the life I live. Hiding in the woods by day, sneaking into deserted houses or taverns at night for food and warmth. I've been doing it all summer now, and that's bad enough. In a month the Masters of these upper levels will be closing their houses and the taverns, moving to town for the winter. Everything on the lower levels will be taken up. They expect me to be starved into surrender."

Theta dropped to her knees beside him.

"I'd rather be with you. I've wanted to be with you ever since I first saw you. But you never seemed to notice me."

"I noticed you." He placed a hand over hers. "But you were so young looking, so sweet. I was waiting for you to grow up a little more. Then, when I found an open Mastership, I was going to ask you to share it with me."

Theta felt a tingling happiness. Her face flushed, her eyes brightened.

"Henry!" she cried. "I've always wanted you! That's why I never..."

He put an arm about her and pulled her close. They sat that way for minutes.

"I'll give you a Mastership!" he cried out. "I'll give you the whole valley!" He pushed her shoulders around until she was facing him. "What is your first wish, Mistress of the Valley?"

"Something to eat," she said promptly.

Henry made a rueful face. "My dear, that is something you will have to become used to: being hungry. But fortunately I know of a ruined and deserted house where the bins are still operating."

The forest they were in filled a steep-sided ravine. He followed it for some distance, then started abruptly up the left-hand slope to a low-crowned crest planted with apple trees. A hundred yards away was the house.

One corner of it was crushed by a fallen tree. The low sun made shafts of light through the trees as Henry approached it cautiously, Theta behind him. He entered through the broken wall into what was once a bedroom, then through a door into the remainder of the house.

It was a typical living room they entered, with the regular ration of furnishings. The visiphone and visiscreen were set into the inner wall; a calendar clock was over the front door, its dial marked with symbols for planting, pruning, cutting and picking. The hand was approaching the latter symbol, Henry

went through into the kitchen, leaving her to watch through the window. He returned with a basket of mixed fruit.

She reached for an avocado, plucking her knife from its sheath with the other hand.

"Hey! Wait a minute!" Henry cried. "You are a sinner now, remember?" He pushed the basket towards her. "Fill your pouch first, eat later."

They ate, keeping an eye on the path towards the house until dark. No one moved at night except on extreme emergency, and then only with lanterns and noise. Without lights on other than the normal glow of the walls they retired to one of the undamaged bedrooms.

"See?" she said, with a rippling, contented laugh. "I waited for you."

II

IT was still dark when they filled their pouches to capacity and slipped from the house.

"What will we do now?" Theta asked.

Henry looked down. "I don't know. I had something planned, but..."

"What was it?"

"I was going to climb up the mountain, past the top defrost towers and the force fence, to the top of the ridge."

She stared at him, her eyes

round. "Why, that's the edge of the world! You might fall off!"

"Not if I'm careful."

Only a few in the valley could boast of going beyond the top row of defrosters, fewer yet of even going within looking distance of the force fence. Beyond it, tradition said, lived great beasts that could eat a man with one bite. While the ridges that bounded the valley on three sides, to the east, west and north, were the edges of the world, from which one dropped off into bottomless space.

To the south, where forest enclosed the mouth of the valley, tradition was vague, but the edge must be off there somewhere.

It had taken Henry all summer to build up his determination. But now, up was the only direction it was safe to go.

"If you're not afraid, I'm not either," Theta said. "Let's go."

Carrying the basket with its remaining supply of fruit between them, they started up the slope. It was only a short distance to the top defrosters. These only went into action at blossom time for the apples and other highland fruits.

From there to the force fence was a steep climb through rocks and brush. Their pace grew slower as they approached the fence.

Their eyes scanned the rocks and scant brush for signs of the great beasts, but they saw none. Higher yet, about a quarter of a mile, was the top of the ridge. The edge of the earth.

Theta pressed against him. "I'm scared," she murmured.

Henry's face became set. "We said we were going," he said curtly. "You can stay if you wish." He selected rocks for both hands.

The force fence only gave them a strong tingling sensation. The plast sandals insulated them somewhat. The slope became steeper, but there was no indication of any great beasts. Too excited to stop and rest, although they were breathing heavily, they pressed onward.

Would it be night down there, over the edge of the world? Stars shining? Would it be daylight and clouds?

The top of the ridge was a hundred feet away ... ten. Henry flung himself on the ground so if he became dizzy he would not lose his balance and fall. Theta did the same. Side by side, they crept the remaining distance.

What they saw made them stare in open-mouthed amazement.

BEFORE them was another ridge running out from the northern range. It was pretty much like the one they were on.

Between it and them was

another valley. Defrost towers rose from among the trees. Over the top of the opposite ridge, they could see still another. The northern mountains were lost in the blue distance.

The shock to both was unnerving. Steeled to look out into Limbo, they found a valley much like their own.

Together they turned and looked back into what could be seen of their own valley.

Even in shape the two were roughly similar. They could see the tall, slim defrost towers, an occasional house and the geometrical designs of the groves and orchards with their orderly rows of trees. There was Town at the lower end of the valley. And there, at the upper end, was something they never knew existed; a large, ivy-clad building that stretched from cliffside to cliffside. And yet above that was a still, blue lake.

Henry looked ahead again.

There was a difference in the other valley. There were no orderly rows of fruit trees, only thick forest like that which grew only in their ravines or beyond the foot of the valley. The defrost towers looked down on multicolored autumn foliage, even in the bottom of the valley where everything should be green.

Why weren't there fruit trees for the defrosters to protect? What kind of a crop

did this valley grow? Henry scrambled to his feet.

Theta looked up at him.

"What...?"

"I'm going down there."

"What for?"

"To see what they grow. What kind of people they are."

"They might..."

He smiled down at her. "I've become an expert at not being seen," he assured her. "I've had them pass five feet away."

Theta got up. "I'm coming, too."

They reached the force fence, but there was no irritation. The forest started immediately and it was fairly clear of underbrush. There were no paths to be seen, no sounds of harvesters, no unfamiliar trees. Even on the floor of the valley there were no signs of life, although they had seen and avoided several houses.

Henry stopped suddenly, staring ahead.

"What's the matter?" Theta asked.

Wordlessly Henry pointed to the bole of a dead and rotting tree. Its straight trunk had branches coming out of it in orderly rings, its top cut off to make the branches spread at ladder distance above the ground.

It leaned drunkenly against a supporting tree.

"Avocado," he said. "This was once a grove."

The normal fear of the un-

familiar swept over Theta. "I want to get out of here. It scares me," she quavered.

Henry glanced up at the sun. "Too late to cross over now," he said. "We'll find a house."

He turned and looked about. There should be one close, on the slope of the ridge so as not to take up useable land. He sighted one and made for it. From the outside it looked no different from those in their own valley.

Beside it was an old apple tree with some emaciated fruit on it. At least they wouldn't starve. As the house was obviously empty he went around to the back, got a picking ladder off the rack and plucked enough fruit to fill their pouches, although it was unflavorable. Not until then did they venture to the front door and push it open.

AS far as they could see it was like the houses in their valley, only it was cold, with a chill dampness. Light gray dust covered everything; cobwebs festooned the walls. That it had not been lived in for years, perhaps generations, was evident. Theta clung to his arm, shivering and afraid. Henry shook her off. He strode to the kitchen and pulled open a bin. In the bottom was dust, smelling faintly of peaches.

"We'll clean out a bed-

room for the night," he said, re-entering the living room.

In the bedroom the westerly sun poured light through a dust-covered window, putting the bed somewhat in shadow. It, too, was covered with dust, turning the everlasting blankets into a color uniform with the room. Their movements stirred up dust that danced as motes in the streaming sunlight as if to bar their way across the room. They walked into it. Their eyes could now see clearly what was beyond.

Theta screamed and sprang back.

Protruding beyond the upper edges of the blankets were two skulls!

They were outside, breathing heavily, before they realized they had moved. Henry stared at the still open door, at the black hole through the white wall. It was the first time they had seen the aftermath of death. For their people, there were places into which bodies were placed. From them they vanished like all other refuse.

Shaken by the horror of it, they plunged into the forest in panic.

The sun dropped behind the ridge; the air chilled. Bones or no bones they had to find shelter for the night. Fire, naked flame, they never had seen or knew existed. Heat came from the walls of houses, with warm clothing and blankets.

Henry's lips firmed. Dead ones or no dead ones, they had to find something to keep them warm during the night.

Another house appeared. With fast beating hearts they entered. It was now warmer inside, but still chilly. They would still need coverings.

"Stay here," Henry said.

He strode into the nearest bedroom. Without stopping to look around, he stepped to the bed. Closing his eyes, he snatched off the bedding and fled into the livingroom.

Together, crouched in a corner, the bedding around them, they spent the night.

Sleep did not come immediately. Henry stared into the darkness, reviewing the day, putting together what he had discovered.

"It all fits," he said aloud.

"What does?" Theta asked.

"The forest, the dead trees, dead people. Something happened to everything, perhaps all at once. To the defrosters, the heaters, the bins. It must have been in winter. They crept into bed to keep warm, then starved to death. All of them."

"No, no!" Theta cried.

"But it did. And it's beginning to happen to us. Each year something stops working. The time may come when nothing works."

"We can't do anything..."

"Yes, we can."

"What?"

"Find out why—and try to stop it!"

III

AT dawn, stiff and shivering, they stumbled outside and by unspoken consent started directly up the slope.

By full daylight they found themselves in a chestnut grove. They stopped to fill their pouches. The last mile was made in the hot warmth of the sun. At the top of the ridge they stopped to rest.

As they did, they feasted their eyes on the orderly groves below them. But Henry's eyes were seeking out the squares of brown among the green of the lower valley. He counted twenty. Far more than he realized. The defrosters had gone dead at intervals, years apart.

His eyes crept up the valley to the structure at its head, with the captive lake behind it. It must be the House of the Old Ones the old stories told about but no one had ever seen. From it they had worked the magic that made the valley what it was. There, they said, they could be seen and heard to speak.

If he could get to see the Old Ones, ask them questions, perhaps they would tell him what should be done.

"Where are we going now?" Theta asked.

"To the House of the Old Ones. Up there," he said, pointing. "Perhaps they can tell us something."

She clutched his arm. "You can't!" she cried. "They'll... they'll..."

"They'll what?"

"I don't know! Something awful!"

"That's what they said about the learning house, but there was nothing in it but dust. I found, from the size of the chairs, that you had to start learning almost from the time you walked. I didn't even know how to start!"

"Then you didn't learn anything?"

"Nothing."

He came to his feet. "You don't have to go if you don't want to."

"I go where you go," she said with stubborn determination.

They had to dip down below the force fence to find water, then keep to the harvested portions where the Masters had gone to Town for the winter. They were lucky in finding houses where the keys had been lost, and thus had been left unlocked.

It was noon the next day when they forced themselves through the brush to find themselves within feet of their destination. With Henry leading they skirted it, looking for an entrance. Close to the center they found a deep indentation with a pair

of doors at its inner end. Cautiously, over the accumulated leaves and rubble, they moved toward them, wondering how to get inside.

The moment Henry came within three feet of them they flew open, inwards.

Theta screamed and sprang back. Henry stopped, startled.

"It's nothing to be scared of," he reassured her. "They say that the doors of Hall in Town used to open this way until someone broke a glass button on the wall. Come on."

There was another pair of glass doors that opened the same way as they approached. They led to a large reception room with a desk and chair opposite the door, chairs in a row along the wall. The floor was red tile, with a white line, about six inches wide, circling around to a door to the left.

Behind the desk was another door.

"**SIGHTSEERS,**" said a voice from out of nowhere that made Theta scream, "will follow the white line through the door to the left. Those with business in the offices will consult the receptionist. Please proceed."

Almost in a state of trance, Henry led the way along the white line. The door opened and admitted them, then a second door.

Here everything was spot-

less, dustless, though no one had been there for years.

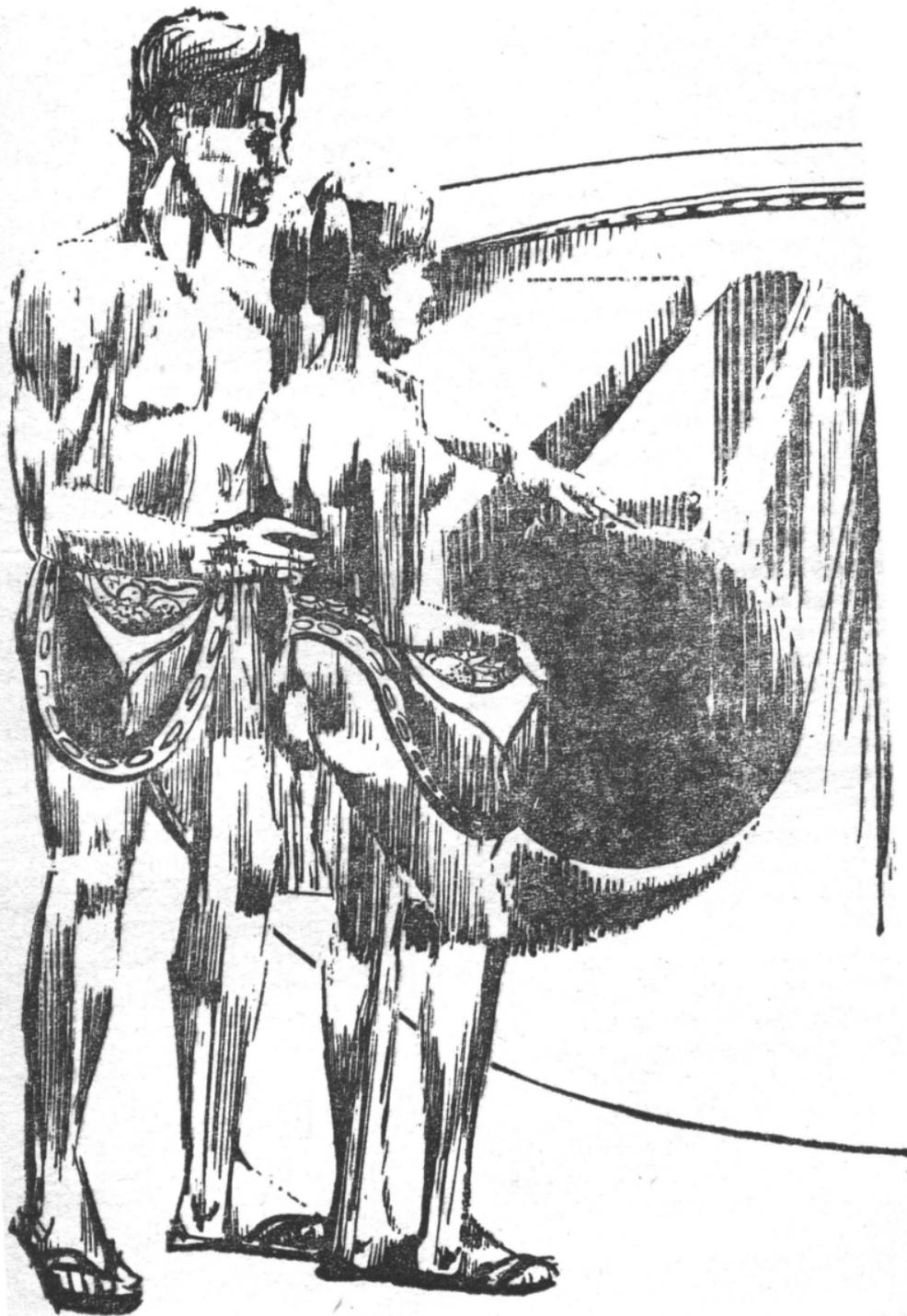
"You are now in the generating room," the voice began again. "The humidity is zero. All dirt and dust has been removed. What you bring in with you will be gone in five minutes."

They were on a balcony, looking down into a large space. On the floor below them seemed to be a huge cylinder, suspended between two metal-covered blocks. Only by the glimmering reflections from its polished surface could one tell that it was revolving.

"Before you is the main generator," the voice began again. "If you look closely you will note that the armature shaft does not touch its supporting bearings. It is held in suspension by polarized barumal obtained from Mars, so there is no friction and no wear. It is powered by water reduced to hydrogen and oxygen. The excess gases are used in the hoppers and storage bins to force out the air and preserve the foods on their way to their destinations. Some gas is piped to the disposal plants, in which all organic matter is converted into fertilizer."

Henry felt let down, cheated. It was just an empty building containing soundless machinery and a recorded lecture. No Old Ones. Nothing he wanted.

"Now behind you," the



voice began again, "you can see into the Control Room. From there every machine, store or house can have its power cut on or off. And if anything goes wrong with its circuit a button on the board flashes red until it is repaired. The glowing red button close to the window is the master switch that will shut off everything in case of an emergency, such as an earthquake."

Theta pressed her nose to the glass window. "Just think," she breathed, "push that and everything stops!"

Perhaps that's what happened in the other valley, thought Henry. Someone pushed the red button... then couldn't get things going again.

"Now follow the line to the next room and be seated. There you will be shown how the complex of the valley was constructed and how it operates."

On entering the hall they found several rows of seats facing a large screen. Soft music began as they entered. The hall darkened and the screen lit up, showing the valley as it was before the work began. Forest mainly, a few farms scattered along the narrow bottoms.

What startled Henry was that they were *above* the valley, looking down as they seemed to drift through the air. So the old tales were right! The Old Ones could

fly through the air! Here was proof of it.

He sat on the edge of his seat, breathing hard, waiting to see the Old Ones, giant of stature, who could tear a tree out of the ground or shovel away a mountain.

But the first humans he saw were men like himself and those in the valley. Men who pointed at places while others squinted in that direction through strange instruments. He wished he could follow the talk, but the men pronounced words differently and used many he had never heard. He had to use his eyes instead of his ears.

THEY started to work right where he was—he recognized the outlines of the ridges about them—but it was done by no giant extending his hand and showering magic. Big machines dug away the ground. Other things with no visible means of locomotion brought building materials up a broad road where there was not even a path now. A little man, graying and wrinkled, answered questions of their invisible guide, and, as he did, he gave directions to others. Was he one of the Old Ones, not as large as himself, no older than his father?

Behind him on the screen the building Henry was in was going up. And men were making it, ordinary men, not magic.

Were the Old Ones just ordinary men, their magic not strange words and motions but machines they manipulated with their hands and feet? They were not gods, just men who had begun to learn sitting in the little chairs in the learning house.

He watched them dig the trenches from the groves-to-be to the hidden storage bins, put in the pipes lined with gravity-repellent barumal, lay the snakelike cables that he had seen occasionally where erosion had exposed them. He saw the building of Town, the Master's houses and the final planting of the groves. The record ended.

Henry remained staring at the blank screen until Theta nudged him and brought him back to the present.

The white line led on, past large offices on one side, on the other windows looking down into a vast storeroom that contained parts for repairing everything in the valley. The Old Ones knew that, some day, things would start breaking down and had prepared for it. They had not prepared for life dropping into routine, interest in progress being lost.

What need was there to spend years in school when everything was already done for you?

The picture had shown some buildings close to the cliffs on one side that looked

like the apartment houses in Town. They broke through the brush and found one.

Other than for dust it was in good condition. The food bins were filled, but the contents had dried to the hardness of stone. As soon as they were emptied they began to refill; but it was two days of constant emptying before eatable fruit began to appear.

By the end of a week they had the rooms they needed cleaned and some of the brush about the place cut clear.

It left Henry free to roam the plant. He sat again and again through the record of construction, understanding a little more each time. He noted, for instance, where what was now forest at the entrance to the valley was once farmland, laid out in squarish, varicolored fields. He found his way into the control room, discovered how to trace the lines from the board to their end on the large map on the wall across from the board.

One day, while it was snowing heavily above the permanent defrosters, he heard a buzzer sound and saw a light turn from green to red. He traced it down. It was the damaged house where they had first taken refuge.

There was plenty of time to ponder. Each time it ended in the same question and the same conclusion. Some-

thing had to be begun before it was too late. The valley had to be stirred out of its antipathy.

But how?

One morning, before dawn, he sat up in bed. Theta asked what was wrong.

"I'm going to the meeting in Town at Peach Blossom Time," he announced. "Something has to be done."

Theta clutched his arm. "You can't! They'll kill you!"

"I have to! Do you want our children, or our children's children, to die like those people on the other side of the ridge?"

"No, but..."

"I have to go—have to make them listen."

IV

THE Peach Blossom Time Meeting was always the best in the year. Those not already in Town were on the nearby bottom groves. After it, the Masters would return to the upper orchards, and the youth work parties would start their rounds. During the three-day meeting there would be dances and parties, an exchange of news while the assembled Elders would judge disputes, pass on the qualifications of Masters, deposing the lazy and unfit, selecting couples to take their places. It was the one time of the year when Henry could get the ear of everyone.

They traveled down unseen, slipping into unlocked houses for food and the night. They entered Town at the beginning of the first meeting. They made it unrecognized to the Hall.

It was not crowded. The day was bland; most preferred to stay outside and watch the proceedings on the visiscreen. Henry and Theta slipped into a section to one side and awaited the clearance of the immediate business of the Elders.

There was none of importance. Within an hour all that was pending was cleared up. The Senior Elder, emaciated and with shaking hands, faced the audience.

"Any further business?" he quavered.

Henry stood up. "Yes," he called out. "Something very important."

Theta fully intended to follow him, but she found she could not move. It was as if she was tied to the chair. The more practical of the two, she knew that the men he was facing would refuse to face the facts. All he was doing was placing himself in their hands. And that meant death!

The elders peered in his direction as he gained the aisle. Ole twisted about in his seat and was the first one to recognize him. For a moment he stared open-mouthed.

"It's Henry Callis!" he cried out. "He's proscribed

for learning witchery! Grab him!"

Henry stopped before him. Ole's words became a gurgle and dried up.

"If I'm a witch," Henry said loudly, "I'm a good person to keep away from. Whether I am or not, I have something important to tell you. And all of you had better listen!"

He started again for the platform, those along the aisle shrinking back as he passed. The Elders, from fat to withered, with the same uneasy expressions on their faces, watched silently as he climbed to the stage and faced them. He could feel their chill hostility. He knew now that he had done wrong but it was too late to undo it. He stopped a short distance from their table, half turned so the audience could hear him.

"I have been living in the houses of the Old Ones at the head of the valley, beyond the defrosters and the forest above them. And I also have been up to the top of the East Range, expecting to look over the edge of the world. But what I saw was another valley just like this one. It had a force fence, defrosters, hoppers, houses. Everything this valley has, except for one thing: living inhabitants. There were people in the houses. Dead people. Reduced to bones, the

bones of people who had died from hunger and cold when everything in their valley suddenly ceased to work.

"That is what sent me to the House of the Old Ones, to see if I could find out what had happened. I found out there that the Old Ones were not giants who did things with magic, but people like ourselves who used machinery to make things. Just as we make clothing with machinery here in Town. They had machines that could fly through the air. They could go the length of the valley in an hour in a road machine. With machines they built these buildings, dug the trenches for the hoppers, did everything. They were just men. Men who had studied in the learning houses from the time they were tiny children. And I found out more..."

He stopped to take a quick look about the still hall. He felt the hostility.

"And I found out more," he repeated. "I found that, in this valley, twenty banks of defrosters have already failed. Eleven houses cannot be used, plus two taverns and one factory here in town. It shows that our own system is breaking down. Some day—perhaps tomorrow, perhaps not until the time of our grandchildren—everything will stop as it did in the next valley. If we want to keep living, we must start to learn how to keep these

machines running. At the House of the Old Ones there is a vast store of parts and visigraph records showing how it should be done. I ask you all to come up and see the record they have there of building the things in the valley! See the machine that keeps everything running. Then let me have a band of youths to start studying the records until we find out how to keep things running."

There was silence after he finished. The Elders eyed him, uneasy, suspicious.

From the seats of the hall came Ole's voice.

"Don't believe him!" he shouted. "He wants to get us up there so he can bewitch us—like he did Theta! Take him out and stone him!"

Someone on the other side of the hall echoed the cry. In a moment it seemed that everyone was roaring it, rising in their seats, shaking fists. The Senior Elder motioned to the Hallmaster. He stepped forward with two husky assistants who grabbed Henry.

"Put him in the strong room," quavered the Senior Elder. "Keep him there until the day for punishment."

Roughly Henry was pushed around, led out a rear door to the stage. The day of punishment! Three nights and two days to live!

HE awoke the morning of the third night feeling cold. He opened his eyes to

find himself in total darkness.

For a moment he thought himself free, hiding out in some deserted building, that all that had happened lately was a dream. But from outside he heard a panicky voice crying that the lights in his apartment were out and it was getting cold.

It had happened! Far sooner than he expected, it had happened!

But what would Theta do? She had gotten away, he was sure, as no one mentioned her. Theta, that was it! She had gone to the plant, pushed the button, condemning herself and all the others to death! But that was not like Theta. She was too clever...

That was it! Why hadn't he thought of it! It was a message, a challenge, a tool which he could use to free himself—get them to help him!

More relaxed, he lay back. Dawn was already showing up over the ridge. More people would be getting up, more people rushing out into the streets in panic. They would remember him, come to his cell imploring him to do something. He would demand what he wanted. They could comply—or face disaster.

What should he demand?

Someone came down the street shouting for the Senior Elder. The volume of excited voices increased with each minute: voices demand-

ing to know why there was no light, no heat, no water. Asking each other if they had them. Hysteria mounting each minute.

Perhaps it would be a time before they thought of him, but they would be before him before the day was over.

"It's that witch in the strong room!" bellowed Ole's voice outside. "He did it by magic! Kill him before he strikes us all dead!"

The cry was taken up, "The witch, kill the witch! He did it! He is right in there, kill him!"

Cold terror seized Henry.

Theta's scheme was back-firing! There would be no reasoning with a superstitious, hysterical mob! Well, at least it hurried things up by a few hours. More composed, he came to his feet as they burst through the back door of the Hall and stampeded towards the door to the cell.

He even smiled slightly. If they thought him a witch...

The key was in the lock. They had no difficulty getting in. He stood in the center of the room, the slight smile still on his lips.

He raised his forearm to a horizontal position, pointed his index finger in their direction.

"Who wants to die first?" he cried above the noise they made.

The onrush into the cell stopped abruptly, those in

front pushing back against those behind them. They followed his finger with fascinated eyes as he fanned it across the group of them. He stopped, his finger pointing to a fat, applecheeked grovemaister. The man shrieked, turned about and began fighting his way back into the corridor.

One man was tripped up and fell. There was a wild shriek of terror. Men shouted that he was killing the leaders by magic. To Henry it seemed only an instant before the passageway was back in its usual silence. He stepped out of his cell. He could see a mass of people about the street door surrounding the panicked men. The passage in the other direction seemed empty.

He turned that way, passed onto the rear of the stage, felt his way across it in the darkness to the steps and down into the aisle. Calmly and without haste he passed through the front doors into the next street and walked, unrecognized in the half light and excitement, out of town.

IT was dark when he arrived in the upper valley.

Theta was sitting at a table. She sprang up and rushed into his arms with a glad cry.

"It worked! They let you go?"

He looked about. "You turned the power back on?"

"No. The plant and these buildings have a separate power source of their own. I wasn't going to touch it until I knew you were safe."

He drew an apple from a bin and munched it. "We'd better turn things on again before the fruit spoils. Come on..."

The button, Henry knew, turned on as well as off. Henry pressed down the button, stepped back to watch the large battery of lights flash on, but nothing happened. Had Theta somehow wrecked—ah! The red buttons all began to glow again. Then, a minute later, a bank of lights switched to green, then another and another. But Henry noted that an occasional light did not change.

Within the hour the board was lighted up completely.

Henry could barely stumble back to his quarters as the reaction set in compounded with disappointment. He flung himself on his bed.

"I have failed," he kept muttering. "I have failed in everything. They won't listen. No one will!"

Theta wisely kept silent and covered him up.

On the second day they heard the sound of a group breaking their way through the forest. They slipped into the brush, ready to retire to a hiding place they had ready. But the dozen people who appeared in the clearing did not have the look of a vengeful

mob. Several were almost elderly, some were boys, two were young women.

Henry stepped into the open, but not too close to them. "What do you want?" he demanded.

They looked at each other, waiting for the other to speak first.

"What do you want?" Henry directed his question to an elderly grovemaster.

"I want to know what's happening," he began. "My hopper has stopped working, my defrosters were dimming. They blame me..."

A young man, strong, with alert eyes, stepped forward. "You are right about that other valley," he said. "I have been in it myself. I don't want that to happen here. I want to learn."

"I do too!" shrilled one of the teenagers. "I sneaked into a learning house, too, but I couldn't understand."

The others gave their reasons, all varied, but with the same intent: they wanted to learn. Sometimes how to repair an individual object, others longed for general knowledge. But they were willing to face the rest of the valley with him to get it.

Henry took a deep, happy breath. There would be others. Slowly but surely the group would grow.

"Come in," he said. "Rest and eat. Then we'll start making plans." **END**

MONOLITHS AND MIRACLES

SOME years ago this department, wearing, and reacting with, short pants, read in *Weird Tales* an enchanting story written in that pulp-poetic style which was so easy to come by then, and which is so seldom seen any more; it was about a bird type ET whose space ship landed here to be met (I forget the exact circumstances) by a prosodic misfit with whom this bird fell in love-real-love. The point, I think, was that it had to be love-real-love, extra-mundane, even ethereal, because nothing else was possible, this chick being a chick. At the end she popped him into her space ship and off they went into infinity murmuring poems to each other.

I didn't understand the love-real-love bit at that age and at this age I still don't. What made the story stick in my mind so was that once they were aboard she reached

out the claw he wasn't holding and plucked a string which gave out a deep pure note, upon which the doors slid shut and the ship took off.

It pleased me because in those days, as in these days, sf's space ships were one tangled mass of wiring, controls were toggles, rheostats, jewel-lights, dials, meters and buttons, and gross operations like opening doors or disposing of dishes were done with handwheels and levers. Every time I was flung a bowl of this electrical spaghetti with relay sauce I swallowed it. But there was always something about it that didn't quite agree with me.

IT was not until many years later, when I saw a folio of fifty-year-old pen-and-ink drawings which purported to predict the future—our present—that I realized what had bothered me about the clut-

tered consoles and the braided festoons of wire under them.

These drawings were in many respects astute and thoughtful predictions. There were aircraft and there were streets choked with traffic and there were clusters of tall buildings. That the buildings ran only eight and nine stories and the aircraft were mostly blimp-like balloons were errors only in degree; the artist certainly had the right idea. The one thing in which he was dead wrong was in the nature of the traffic, which, but for some bicycles and a handcart or two, was exclusively horse-drawn.

It simply never occurred to the man that one day soon there just wouldn't be any horses in the streets.

It's an easy mistake to make, and one can forgive it in the sf of the thirties. It is not so easy to forgive in today's space yarns. One of the balloons in the folio was powered by two horses running on a treadmill. Most of the space-ship controls in current sf are operated by IBM cards or tapes, which in its way is quite as ludicrous; the computer is merely hitched, like the horses, to the same old knobs and dials.

It would seem that a good hard creative effort needs to be made to give our faithful readers a glimpse of something in the future at least as original as a pure-plucked

string. Especially since here-and-now science bids fair to relegating circuits and wiring to the bin where they threw the gasoliers.

A recent release from Westinghouse contains three diagrams of a device—it happens to be a light telemetering system—and a listing of components and specifications for each. *Yesterday's* had a volume of 4 cubic inches, weighed 26 grams, had an input of 5 watts, 16 components, 18 soldered connections. *Today's* takes up 1 cubic inch, weighs 7 grams, eats $\frac{3}{4}$ of a watt, has 14 parts and 15 soldered junctions. *Tomorrow's* (and that means tomorrow morning, gentle reader) takes up less than a thousandth of a cubic inch, weighs a fiftieth of a gram, uses three fiftieths of a watt, has (count 'em) one component, and two soldered junctions.

This isn't miniaturization; not exactly. Miniaturization does wonders as far as it goes, as for example when they packed a whole radio transmitter and receiver, as well as pulse-counting, arming, power supply and firing gear, into the front end of anti-aircraft shell... a space that wouldn't accomodate two king-size decks of cigarettes. Make everything smaller and you shuck off dead weight and increase ruggedness; you pay dearly for it in increased demands for precision and in

the acquisition of some truly vicious problems in heat dissipation.

WESTINGHOUSE (and others) have attacked the problem from a totally new direction. Investigating the nature of solids, and especially those puzzling substances called semi-conductors, they have come up with a long string of what they call "molecular electronic systems" and have already taken them out of the laboratory-curiosity stage. They have a phonograph hooked up to a dime-sized preamp and a half-dollar-sized amplifier which delivers an honest 5 watts at a clean frequency response from 0 to 20,000 cycles. They have a thing no bigger than a biscuit where 110 volts AC goes in one side and 9 volts DC comes out the other—9 DC volts without waver or flicker. They can show you a radio with two amplifying stages which will tune right across the broadcast band and which consists of a stack of six wafers each smaller than a dime. If you'd like to get technical, they'll demonstrate a number of thumbnail-sized monoliths—a word which means 'single rock'—which are respectively a 2-stage video amplifier, a frequency-selective amplifier with notch filter in a feedback loop around the amplifier structure; a choice selection of multivibrators; a variable potentiometer; a goodly

THEODORE STURGEON

number of multiposition switches; an analog-to-digital converter; and a two-stage peltier-effect cooler for bringing the temperatures of infrared detectors down to efficient-handling levels.

Had enough? The researchers haven't. For example, they've done away with the old frequency-crystal, sandwich-transistor techniques of sawing ingots, x-ray orienting, lapping, etching and polishing. They don't so much *make* monoliths as *grow* them. They can grow a pure germanium ribbon, an eighth of an inch wide and a few thousandths thick, continuously at 6 to 12 inches a minute; and still that isn't all. They can carry on diffusion, plating and evaporation processes on the crystal as it leaves the melt, producing, just for example, a string of miniscule amplifiers which can be cut off at any length to give any desired gain. And as if that were not enough, they are just perfecting a process for the continuous production of two-and three-layer sandwiches of these semiconductors, so that soon they'll have really sophisticated, infinitesimal, starve-at-the-input flood-at-the-output devices by the yard.

Isn't it past time, then, to get the horses off the streets and the washboards out of the back yard, and clean up those control consoles? **END**