

They weren't human—weren't even related to humanity through ties of blood—but they were our heirs!

SWEET Their blood and sticky

By ALBERT R. TEICHNER

THE machine had stood there a long time. It was several hundred feet long and could run on a thimbleful of earth or water. Complete in itself, the machine drew material from the surrounding landscape, transmuting matter to its special purposes. It needed sugar, salt, water and many other things but never failed to have them. It was still working. And at the delivery end, where the packaging devices had been broken down, it turned out a steady turgid stream on the ground of pink-striped, twisting taffy.

Once the whole vast desert area had been filled with such devices, producing all the varied needs of a very needful human race. But there had been no machine to produce peace. The crossing shock waves of fused hydrogen had destroyed the machine by the

tens of thousands, along with all the automatic shipping lines, leaving only, in the quirk of a pressure cross-pattern, an undisturbed taffy-making machine, oozing its special lava on the plateau floor.

It had been working seven and a half million years.

It continued to repair itself, as if a child of the race that had started all this would come by it at any moment to tip an eager pinky in the still-warm taffy to taste its tangy sweetness. But there were no human beings. There had been none since the day when the packager collapsed, at the edge of the total-evaporation zone.

CRENO set a few of his legs on the edge of the glassy, weathered ridge and gazed over the plateau. Harta, next to him, trembled as she

adjusted to the strange hardness of these four dimensions. "Being is a thin thing here," she said.

"Thin, yes," Creno smiled. "An almost dead world. But there is a mystery in that almost to make the journey worth the coming."

"What mystery?" But Creno was of the wisest on the home planet and her sense feelers scanned once more to find what he must mean. "I do feel it! Everything dead but that one great mental thing moving, and a four-dimensional stream coming out in the vibrations of this world!"

"I have been watching it," said Creno. "What kind of life can that be? You are a sharp sensor, Harta. Focus to it."

She strained and then relaxed, speaking: "The circuits are closed into themselves. It learns nothing from outside itself except to move and extend its metal feelers for food. Soil is its food. Soil is its energy. Soil is its being."

"Can it be alive?"

"It is alive."

All his legs rested now in a row along the ridge. He too was relaxed as one mystery disappeared. "I feel your feelings, but the thing is not alive. It is a machine."

"I do not understand. A machine in the middle of a dead world?"

"Whether we understand

why or not, that is what it is—a machine."

Harta throbbed with excitement. How could Creno be wrong? He knew everything as soon as the facts were in his mind. Yet here now were living things crawling toward the machine, just like the ex-crescence at one end but in no way a part of it! The feeling of *willed* effort as they crawled slowly toward it, white and pink striped, reaching grasping feelers into the turgid product, taking it in, then rising on easing legs as the food spread within them.

"There are living creatures here!" Creno pondered. "I feel your messages. Twenty, thirty—a horde is crawling from that mountain toward it."

"Four thousand three hundred and ninety-one," said Harta. She concentrated. "There are three thousand and five more in the mountain caves, waiting to come out as the others return."

THEY came in groups of about a hundred, pulling themselves slowly toward the edges of the great sticky lake that lay within the vaster area where the pink matter dried and crumbled into the strong breeze. Some were smaller than others, offspring who were nudged along by their elders. But these small creatures were the ones who scampered most of all after they had fed. Joyously they

danced back toward the mountain. A few of medium height went back in pairs, firm taffy fingers intertwined in each other.

"They mate," said Creno. "It is their custom."

"How tiring they are," said Harta. "I have lost interest. We have seen thirty-one worlds with such customs and these creatures are too simple to be interesting. Let us go home or try some other system."

"Not yet," Creno insisted. "We passed through the ocean and surveyed the lands of this tiny planet. Nowhere else has there been the tiniest unit of life. Why at this one spot should something exist?"

"But we have several parallel situations," Harta protested. "They were colonies landed in one spot by the civilization of another planet. They landed here with their feeder machine. And that is the explanation."

"Your mind does not function well in a four-dimension continuum, Harta. You will need more training—"

"But these cases are rare, and, Creno—"

"I know they are rare, my child. But still they exist. You will have to learn eventually, a little at a time. Now then, it is a rule of such limited dimensional realms that the movement of matter and events from place to place is highly difficult. Certain com-

puting procedures must be observed. To transport a machine this size across their space would have required enormous effort and an intelligence they do not yet have. More than that, it would have been unnecessary. A smaller device would have supplied them with food. I am forced to conclude that—somehow—we are approaching this problem backwards."

"Backwards? You mean they made the machine here after they came?"

He did not reply to that. "We must concentrate together on thinking ourselves into their functioning in their manifold."

Harta followed his suggestion, and soon their thoughts were moving among and within the striped creatures. The insides of their bodies consisted of fundamentally the same taffy substance; but it had been modified by various organic structures. All, though, were built of the same fundamental units: elongated, thin cells which readily aligned themselves in semi-crystalline patterns.

"Enough," Creno said, "back to the hill."

Their rows of thin limbs rested on the ridge crest once more. "We have seen such cell crystals before," she sighed. "The inefficiencies in such a poverty of dimensions! Do you still think we have looked at it backwards?"

"Of course we have. They

did not bring the machine or make it—the machine made them!”

“That is not possible, Creno, great as you are in these matters. We have never seen life created by a machine before. No one ever has, from the millions of reports I have seen at home.”

“Maybe we have and not known it. The life we have seen always evolved through enormous eons and we could not see its origins clearly in most cases. Here we are dealing with something that has taken comparatively little time.” He stopped, shocked that he, an elder, had said so much. “No, disregard such theories. You are still too young to bother with them. Here is the important thing—this machine was left by an earlier race that disappeared. Everything else was destroyed but it went right on producing its substance.”

“The substance is not life.”

“It is only four-dimensional matter, right. But over a long enough time—you know this as well as I do—random factors will eventually produce a life form. By some trick of radiation this process has been speeded up here. The substance the machine produces has in turn produced life!”

CRENO sensed with a tremor some dangerous shifting in Harta’s consciousness. As an elder it was his duty

to prevent a premature insight in the young. It had been a mistake to bring this up. He must go no further.

It was not necessary. Harta took it up for him.

“Then any substance producing life and modified by it could—if you go far enough back—be the product of a machine. But it would have taken so long to produce life that the original matter, that bore the direct imprint of the machine, would have disappeared.”

“An error,” said Creno desperately. “There is just this case.”

“By the time these creatures have arrived at self-knowledge the machine will be gone. They will not know it ever existed, and—”

“That is all it means. There is just this one case. Now we must leave this unimportant example of minor dimensions!”

He strained consciousness to a forward movement but Harta remained behind. He had to pull back. “Start,” he ordered.

Her mind’s obstinately frozen stance made him freeze too. He applied all his force to bring her back into control, but she still held fast.

“Something more is hidden from me. I will be back,” she said. And she disappeared from the ridge.

He had never faced such a quandary before on a training trip with a younger one. If

he went in pursuit he would find her ultimately—that was in the nature of being older and wiser—but, if she revolted against his pursuit, she could extend the time considerably on this forsaken planet. And he wanted to get her away as soon as possible.

The more time here the more chance that the awful truth would come to her before her time.

He watched the growing waves of creatures floundering toward the vast oozing puddle, which refilled itself as quickly as it was diminished by them, and the receding waves of those that had already fed. This, he could see, was an endless process. The whole life on the species moved in continuous systole-diastole around the machine.

Soon he would have to go in search of her...

But then she was back at his side, her being for this world once more solidified. She concentrated for a moment on the pink-striped waves of rippling inward and outward around the great sustaining pool, then communicated with him.

"We can leave now. There is nothing more to see."

Something in her mind remained closed to his, as the mind of younger never should be to older. But at least he could see with relief that the worst had not happened. The deeper knowledge had not arrived to her too early when it

could only hurt. All he found turned to him—as they receded from this thin-manifold universe, then moved up the dimension ladder to their home level—was a surface of happiness.

Suddenly, though, as they prepared for flight in that hyperspace all her joy was gone.

"I saw it," she said. "In my free and unrestricted spirit I moved deep into the substance of that world, below all the total ruin, far below. And there was a monstrous machine, near the molten core, almost infinitely older than the feeding one far above it. And it, too, had been left in a stratum where all else was destroyed. I could see it had once produced the ooze from which came the life from which in turn come the beings by whom the machine above it was made. Maybe they, too, thought they were free and unrestricted!"

He sighed for the bitter cost of knowledge.

This one would no longer go forth in the joy of mere exploration, and he would no longer live vicariously in the happiness of another being's innocence. Now Harta, too, would be seeking the answer to the question of original creation, the answer that he had not found in his journeys across a myriad worlds and dimensions...

That no one had ever found.

END

ALBERT R. TEICHNER

SCIENCE BRIEFS

THE lightest element is hydrogen, the next lightest is helium. Next in line is the lightest solid. It's a metal, silvery, soft enough to crease with a thumbnail, light enough to float like a ping-pong ball.

It's *Lithium*, and it's a weird and wonderful worker. You've probably never encountered it since about ten minutes ago. It helps lubricate the car, puts the zing in the bubbles in your Coke, lays that special gloss on your bathroom fixtures and helps make Vitamin A pills.

It also has a lot to do with your future, or lack of it. Bombard an isotope of lithium (Li-6) with neutrons and you get triple-weight hydrogen (tritium) which one may assume is what makes the hydrogen bomb go bang.

It was discovered in 1817 but not much was done with it but for glazing chinaware until someone found out it would give more muscles to Edison batteries. In 1931 the physicists Coccoft and Walton bombarded lithium with protons and came up with the very first experimental proof of Einstein's assertion that mass and energy are two forms of the same thing.

Only 10% of pure lithium is the Li-6 used in fusion re-

actions. The rest (Li-7) continues to find more to do. It's in face cream, and it's used in dehumidifiers. It adds effectiveness to welding fluxes, medicines and synthetic rubber.

The Atomic Energy Commission takes over quantities of this lithium hydroxides. The exact process is classified, but it can be told that it's a snap compared with the mass diffusion used during the war to sort out U-235 from U-238. The AEC gets about 1½ ounces of Li-6 from each pound of metallic lithium. For the rest, the Li-7, it has no use whatever, so it sells it back to its original supplier, who turns it over to industry.

It looks very much as if the whole approach to atomic power which filled our minds and our newspapers—and our s-f-stories—dealing as it has with uranium and other heavy elements, will before long begin to look a little quaint. Light element nucleonics, and fusion power, may some day put uranium back where it was in a high-school textbook I once had: "Uranium," it said, "is a useless dense metal of value only in imparting a brownish-purple glaze to cheap crockery."

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