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AQUEDUCT

On a planet with no rainfall, the big mystery was where the moisture came from to feed the rivers. Solve that problem and the place would be ideal.

The beetles rose slowly at first, heavy with maturity. As they gained height their speed increased, until the combined vibration of millions of wings filled the sky with humming. Shallow patches of water, the only seas the planet had, dropped behind.

Other flights of beetles were already in the air, forming great luminous clouds obscuring the stars. Driven by instinct as old as life itself, the huge clouds sped northwards, shining in the dark. The beetles were weighty with the burden of their full growth, but moved rapidly. They had oval bodies, small legs and mandibles, and strong wings spreading from under horny cases. At the centres of the clouds, they were closely packed as wasps in a flying swarm, so that their beating wings almost touched as they swept on under the night sky.

As the small planet rotated, other flights rose with evening, starting up from the small seas, joining the hum of their wings to that of clouds of beetles already moving inland. All round the planet, as evening came and the sun of the Canis Ven area sank, masses of flying beetles rose, glinting in the evening, luminous in darkness, so that the night sky was filled with patches of light moving on their courses across the heavens.

The patches of luminous green drifting north in the sky faded as the dawn light gained strength over the hills east of the river. Bill Cartwright dropped his cigarette stub in the grey, sandy earth. The green patches fascinated him- always had, since the day five months before when he had first stepped from the cargo ship to the arid ground. He never forgot how far they were from Earth, out here on the little planet at the periphery of a modest system round a small sun in Canis Ven.

The cool air had a peculiar dryness- it always had. In those five months no rain fell. Worse, in the previous two years of exploratory settlement by a group sent to map the area, there had been no rain.

"Wondering where they all go, Bill ?" a girl’s voice asked.

Bill nodded. “ The lantern beetles ? Don’t tell me you got up early to see them.”

“ I didn’t.” Lindy Wells laughed briefly. She had come up the rocky, awkward path from the river, and was flushed. “ I worked late last night and had a headache. Twenty

minutes outside is the best cure.”

Bill nodded. "Still being hounded ?"

"You could put it that way. Perhaps I deserve it."

Bill shook his sandy head. “ I’ve never been on a planet where everything turned out easy, Lindy. Back on Earth, you had generations of prior knowledge to draw on. That helps, especially when studying animals or insects. What’s more, on Earth you investigate something from your own habitat, or at least indigenous to the planet on which humanity arose. Out here, it’s all different. No prior knowledge to draw on, no conformity to natural laws we take for granted. Nobody can expect you to produce a natural history report in a couple of months.”

"Major Stanton does," Lindy said acidly.

Bill grimaced. "Let him shout for it !"

The sun would soon be up. Bill could see down into the river, with its clear, steady current. Fifteen miles south the river discharged into a small, shallow sea. Across the river was a sandstone rise, and beyond was a dip, once the channel of the river, but now dry, due to its changed course. Beyond the dry dip was Sand Flat, the first settlement area, scantily occupied by technicians. Lindy Wells followed his gaze, a spark in her blue eyes.

"Are you behind too ?" she asked .

“ A bit. And Stanton breathing on my back doesn’t help. The aqueduct to take water across the dry channel has to be fifteen hundred feet long, and it’s a hundred feet above the old dry bed, at one point. There’s also the cutting through the rise between the river and its old course, which was a big job.”

"You think it’s worth it ?"

“ Everyone does. We reckon to win about five hundred square miles of good, useful land, with this aqueduct. When the river followed the old channel, a few thousand years ago, that land was fertile. It will be again. That much crop-bearing land is worth a lot, out here.”

She nodded, her dark hair swinging. She raised her smoothly contoured face towards the sky. “ Was the rainfall always zero, Bill ?”

“ I believe so.” He studied the sky, now blue from horizon to horizon. In five months he had not seen a cloud. The air was cool but dry. “ The sea area is very small. There’s no

sign of vegetation except along watercourses. Ninety-five per cent of the planet's surface is arid. That accounts for their being few animals, no birds. We need to make the most of this river. Lindy, and the aqueduct will do that."

She nodded. "' Major Stanton wants me to produce some method of clearing the locality of the lantern beetles."

" Can't see they do much harm, myself," Bill objected. He was all for leaving things as they were, when it came to interference with indigenous life.

They went down the rocky slope to the river. It was of moderate depth, not fast flowing. Water was scarce. The river rose amid thickly vegetated slopes three hundred miles north, and had not been much investigated. The urgent need was to get the useful land beyond the rise into production.

A temporary bridge crossed the river. The other side was the sandstone rise, and beyond that, the old bed of the river, now dry for a thousand years. The cutting was finished, the aqueduct nearly so. Within a month, water should be flowing through the rise cutting, across the aqueduct, and out over the dust-dry but fertile land beyond.

Sand Flat was half a mile from the aqueduct, a mass of huts, stores and temporary buildings. A lot of men and heavy plant had been needed to build the aqueduct. It was a huge trough forty feet wide and fifteen deep, and ready to carry a large part of the river waters when sluices in the river course were closed.

They rode in Bill's dusty, battered truck. The rough road went a little way down along the river bank, before rising slightly towards the camp. A compact building near the sluices came into view.

"Still having trouble with the water filtering ?" Bill asked.

" Some." Lindy looked over him towards the building. " But we'll succeed. I've never seen water with so much animalculea life ! The new plan is a big, coarse rotating filter to remove nine-tenths of the sludge, then extra filtering when needed ."

"Sounds reasonable."

Bill dropped her near the filter and pump building, and drove towards the aqueduct. The sun was up, but only a dim outline. Scanning the sky, he noted that a huge, silvery cloud extended over half the eastern heavens. Lantern beetles.

The sky had darkened appreciably when he reached the aqueduct, and an occasional beetle was clicking against the truck windscreen. They were the size of small beans, with wings that shone silver when extended, and luminous under-sides that glowed in

the night sky, when uncounted billions flitted over.

Bill was pleased with the aqueduct, built as far as possible from pounded rock, easily blasted in great quantities from hills only a few miles away. The original river bed had not been deep, but lay in a cleft, and the aqueduct was long. It was supported on reinforced concrete pillars, almost complete.

A large-built man in dusty blue overalls came from the group shifting form-work from one of the pillars. He had iron grey hair and a wrinkled, kindly face. He put one foot on the truck step when Bill halted, dusting his trousers.

"I'm a concretor, not a bug-hunter, Bill," he said. Bill got down. " Who says you aren't, Ned '?" Mace was a great worker, getting results, not making mistakes.

" Major Stanton." Ned pulled a face expressing dislike. " There was another swarm of lantern beetles along at the quarry. The Major knows we're getting on well here." He jerked his iron grey head towards the aqueduct. " So he says we're to take a few days off, and go up river with the helicopters, spraying insecticide."

"The devil he does ! "

Bill realised Major Stanton had his job to do- as he thought fit. Doubtless the Major had to report to his superior, back on Earth, and the beetles were regarded as a nuisance to be cleared away quickly. But Bill did not agree that his men, civilians on a contracted job, should be taken from their proper work.

"Was it much of a swarm. Ned ?" he asked.

" As thick as any I've seen. A plague of locusts has nothing on it. They were inches thick on everything, until a big cloud of bugs coming up from the south got within a couple of miles, then the lot took off and joined them."

" I probably saw that cloud," Bill put in. The number of beetles was fantastic. "What did you say to the Major ?"

"That you're the boss "

"Good. I'll see him ! "

Bill got into the truck, turning it in a tight circle. There were lots of clearing up jobs, final checks, to make at the cutting and aqueduct. The large helicopters had been brought for civilian use, not military. There was still plenty of work for them and their crews, confirming the analyses with fresh soil samples, and mapping in detail the useful land which would be watered.

The military buildings were not impressive, and occupied a rise down the slope below the camp. A big communications hut, with aerials, dwarfed several military vehicles clustered near. Bill went straight to the Major's office, knocked, and was admitted by an aide. Stanton was a lean hawk of a man, though usually reasonable, Bill admitted, even if stubborn.

Stanton got up. " I hoped you'd be coming, Mr. Cartwright," he said cordially. " I'm glad the aqueduct's practically finished."

Bill smiled. " It's a very long way indeed from being finished, sir." It was not strictly true, but he had no wish to get landed with extra work by the Major. "In fact, I came to tell you we're aqueduct engineers, not beetle catchers. There are hundreds more soil samples to be collected-"

" But not so many that the helicopters can't be spared for a couple of days," Stanton put in diplomatically.

Bill saw that the stubborn element in the Major was aroused The Major had power to commandeer any equipment or men as he thought fit. But he had hitherto used that power scantily, if at all.

Major Stanton sat down, indicating a chair. " These lantern beetles need clearing up, you know," he pointed out. "They're a bane, a blight. Even your own men say so !"

" Sometimes," Bill admitted. " But that's Miss Wells' job not ours."

Stanton snorted. " What has she done ?" He drew in his lean cheeks. " Nothing at all ! She's made no attempt at all to exterminate them-"

"Perhaps she thinks it isn't important "

The lean face grew red. " Their nuisance value alone is important. I think we should spray them in flight, rid the planet of them ! They get in our clothes, our food."

" At least they don't bite or sting," Bill pointed out. He saw it was hopeless. The Major had made up his mind, and would stick to his decision.

Major Stanton got up again, irritable. " A couple of days use of the helicopters will be sufficient."

" I can't agree to letting you have them at all, Major," Bill said stiffly.

Stanton's lips grew tight. "That is a definite refusal?"

“I fear so, sir, on the grounds that our own work isn’t finished and that we need the helicopters.”

Major Stanton glared at him, and Bill was glad he was a civilian with certain rights, and not a junior officer. “ I can get confirmation of my order from Earth, Cartwright.”

“ Do, if you feel you must.” It would take a few days. “ Meanwhile, we can get on with our survey of soil conditions. It’s been a side-line and not by any means finished.” Bill smiled evenly. “ Please put in your report that I refused you use of the machines because we need them, sir. Our contract includes collecting soil samples.”

He let himself out, aware that Stanton was muttering something very uncomplementary.

Outside, he wondered why he had been so positive. It was, perhaps, something Lindy had said a long time before. “ Everything has its place, Bill,” she had said. “ It’s not for us to start knocking pins out until we know what they hold up.”

Not that this seemed to apply to the beetles, Bill thought. Perhaps, after a few days, he would climb down, let the Major have the machines. After all, the beetles were a nuisance, especially when they descended in swarms and clouds anywhere by the Sand Flat camp.

He spent the rest of the day checking the aqueduct, and was pleased with the giant trough, which would carry a vast quantity of water to the once flourishing dry land west of the river. To emphasise his point he had to send the three helicopter crews out, with soil sampling gear, but told them not to hurry. Stanton was watching when the three craft took off leisurely and drifted away into the westward sky.

Late towards evening, Ned Mace came in with a report on the concreting, and Bill sat with him in the lit hut, studying the listings. The concrete they had been able to combine was as good as any which could have been got on Earth. Bill prepared for bed with a feeling of satisfaction. True, a bomb blast from Stanton could be expected within a few days. But a soundly designed, fully satisfactory aqueduct would count a lot in counterbalancing criticism.

Night crept over the planet segment, and over its tiny seas. On the sea surface, feeding, glistened uncounted billions of lantern beetles. They swam, crowding so thickly their wing cases brushed. Their undersides glowed, filling the water to a depth of many fathoms with an eerie luminous green. Lower in the water, millions of grub-like pupae wriggled, feeding on minute plankton, other animal life, and each other.

The hemisphere of the planet was strangely silent, arid, almost devoid of vegetable life, except where each watercourse made its long, slow way to the sea. Faint weak breezes stirred over the sandstone plains, taking up no moisture from the parched rock and sand. No moon shone, and no shallow tides moved on the small seas. The planet was not plenteous with water. No fish moved in the seas, only the myriads of lantern beetles swirled and skated on the surface, and below them the multitudes of pupae swam, dense clouds amid the long weeds at the shore. At slowly shelving river mouths, beetles whirled and skated, rising and dipping. The slowly moving waters boiled and churned with the multitude of them, so that each river mouth and sea was covered with a swirling, glowing, ever-changing froth.

As night came more darkly over the hemisphere, beetles rose heavily, congregating into vast swarms that stretched for miles in the sky. Moving in vast clouds, wings almost touching, they sped away from the sea inland, seeking solid ground upon which to rest. The night was alive with vast sheets of moving green, thick layers of uncounted multitudes of flying insects.

The beetles flew fast, and moved in unison through the sky, following some age-old instinct, as sure of their course as migratory birds. Only when dawn began to lighten the sky did some begin to descend, to rest. Others, more recently risen, pressed on, their luminescence fading in the sunlight, wings glinting so that flowing sheets of silver spanned the heavens.

"Wonder if it ever rains," Ned Mace said

Bill slapped dust from the plans on the hut office trestle table. “ The river always runs, Ned. That’s all we need worry about. The depth of its bed is one proof.” He opened a cabinet and took down a thick folder. “ Actually, we’ve some information. The rainfall was completed at about 0.01in. annually--”

Ned pulled up a four legged stool, sitting heavily. “ That’s not enough to make a puddle.”

“ Maybe not. But this survey doesn’t go back very far, as such things count. The air is extremely dry, as we’ve all noticed.” It was nearly noon, but quite cool. “ Large parts of Earth have little or no rain, and the relative ocean area there is so much greater than on this planet. There are the Earth tropical forest areas, too, and no equivalent here.”

“ I suppose you’re right.” Ned’s bleached blue eyes gazed out of the window at the slight rise, dotted with stones, arid and dry. “ For my part, I’11 be glad to finish and go home.”

He got up, leaving, and Bill settled down to complete the factual report that was all his

boss back on Earth would ever see of the aqueduct that had cost so much. He was worried about the Major’s ultimatum. Major Stanton was respected, relied upon- a blasting condemnation from him could do a lot of harm to a man, even a civilian, Bill thought. Yet Bill was not prepared to let the helicopters spray lethal chemicals upon the clouds of beetles.

There was a line to the filter and pumping building by the sluice, and to Lindy’s temporary but quite efficient laboratory. Bill decided to ring her. She sounded pleased to hear him.

"Any further pressure from the Major, Lindy ?" he asked

“ Some, Bill.” Her voice was a bit depressed. “ He’11 get his own way in the end. He always does.”

Bill pondered, scratching his cheek. “ He’s determined to clear up these flying pests ?”

"I’m afraid so. He thinks it’s part of his job "

“ I see. And what exactly do we know about the beetles- only that they exist in astonishing numbers, and seem to do no harm.”

There was a pause. “ They have a considerable nuisance value.”

He noted the tone in her voice. “ You’ve found out some thing new ?”

“ A little. It’ll please the Major, but not you, Bill.” She was obviously turning papers. “ You remember the filter trouble we’ve had because of the animalculae life in the water? Well, the sludge level has been rising, and I’ve been going into it fully.”

She paused. Bill felt uneasy. “ Yes ?” he urged

A drawer closed. “ It would be better if you came to see for yourself, Bill.”

"Very well. I’l1 do that. "

It was a bumpy ride to the filter station, but short. Lindy Wells waited at the open door. The clear river waters disappeared into a cutting under the building, and a murmer of pumps sounded inside. From here, water was piped up for all the needs of the camp.

“ There’s always been too much filterable material,” she said, taking him inside. “ We’ve got a coarse rotating filter, which removes most of it, and automatically dumps it in the river again below our pumps.”

They went along a raised cat-walk over the flowing water, and into a large room where the hum of rotary pumps was louder. Water emerged from a steel sluice, and passed over a saucer-shaped drum, obliquely pivoted, which rotated steadily. Bill felt astonished. As the drum rose from the flowing water, it bore a thick mass of transparent jelly.

“ Millions of filterable creatures,” Lindy said. She pointed to lumps of jelly slopping from the drum back into the river below the pumps. “ We’re dumping it back, as that’s the easiest method of disposal.” She paused significantly. “ It’s made up of beetle larvae, in a rudimentary state.”

“ Beetle larvae !” Bill gazed at the masses of jelly, each handful composed of billions. The mass was transparent, and that explained why the river looked so clear. " It’s astonishing!"

“ And another good reason why we should be rid of these pests,” a voice said firmly.

Bill jerked round, and met Major Stanton’s eagle eyes Stanton was looking with distaste at the masses of jelly continuously discharged into the river.

“ These beetles are the pest of the planet,” Stanton said factually. “ I assume even you can see that now, Mr. Cartwright. I’ve radioed Earth for permission to exterminate them- to bring in more men, if needed, and extra helicopters, or other aircraft, so that we can cover the large areas required. I’ve asked for special spraying plant and storage tanks, and for vastly increased supplies of the most lethal insecticides. I’ve also reported your obstruction and my view on that matter will have weight.”

There was a gleam in his eyes which Bill did not like. The sound of pumps, and the splashing of the huge rotating filter, filled the room. Condemnation from Stanton could lose a man his job. Bill nodded at Lindy.

"Let’s get out of here ! "

They left Major Stanton staring at the discharging jelly. Outside. Bill took Lindy’s arm.

"What do you think of it all? "

Her lips grew serious. “ I don’t know, Bill. On the face of it, the Major’s right. The beetles are a nuisance, and have no apparent good points or use. I suppose some unusual fact, such as the lack of bird life, allowed them to increase so. They’ve no natural enemies.”

Bill nodded, but felt uneasy. There was an odd balance in nature, whereby everything

had its uses, and nothing was destroyed which had a purpose. Perhaps birds had once nearly destroyed the beetles, and in doing so had destroyed themselves. That, too, could explain the lack of bird life, even if not the overwhelming comeback of the beetles.

Bill had to admit that Stanton was a man who got things done. Within the week four large helicopters had been delivered by spaceship and were being assembled. A store dump of suitable chemicals had existed on a planet in an adjoining system, and Stanton had commandeered the whole, and had a selection ferried to the camp. Looking at the great number of sealed drums, lowered from the space freighter by derrick, Bill feared that here was enough insecticide to rid the planet of its last beetle for ever.

The Major was to be seen with an aide, checking drums and aircraft, issuing instructions, looking on at tests made on groups of beetles brought back daily, Bill felt a great unease.

By the next day preparations for Stanton’s all-out attack on the beetles were practically finished. Bill saw that their complete destruction would soon be an accomplished fact.

“ Why worry ?” Ned asked, when Bill met him by the end of the aqueduct. “ We’ve done our job. Even if the Major upsets the balance of nature, as you put it, that’s his trouble, not ours !”

Bill agreed that was one way to look at it, but shook his head. “I'm against this mass extermination.” He had never felt annoyance at the lantern beetles. They seemed harmless, and did not even choose to linger by humans or food. “ Feel like a trip, Ned ?”

Ned Mace looked at him curiously. " For what purpose ? "

“ I’m not sure.” North, away beyond the sandstone rise which separated the old watercourse from the new bed, the river glinted distantly. “ There’s nothing we need do here. I’d like to see where the beetles go.”

“ Go ‘?” Ned repeated, then understanding came in his eyes. “ You mean we always see them flying north, up the river, but not back again.”

Bill was silent, unable to explain his unformed thoughts Vast clouds of lantern beetles regularly moved northwards but it was unusual to see any flying south.

“ I’ll get Lindy,” he said, “ and we’ll take a helicopter. At least it’ll let me get away from the Major for a bit !”

As the helicopter lifted, Bill saw that Stanton’s preparations were finished. The helicopters could rise to a great height, and spray insecticide over the square miles of the beetles, Waiting until they rose in masses after evening feeding at the river mouth .

Bill took the helicopter up fast, and away north. Lindy and Ned looked down on the slow, winding river. The clear sharp line of the aqueduct and cutting drifted away from view, and the brown useful land to be watered became a mere smudge.

“ There’s nothing like these beetles on Earth,” Bill said pensively, hands on the controls. “ Their larvae come down the river and presumably those that survive emerge out at sea, and after a period reach maturity, and fly back up the river. As the larvae come down with the current, egg-laying must be far up river.

“ That seems likely,” Lindy agreed. " There have been so many things to do, I’ve not given them detailed study yet."

They listened to the swish of the blades. Bill began to look for the valley which was some hundreds of miles north of the camp.

“ I’ve not been this far north,” he said, as it began to appear as a grey-green smudge ahead.

"Nor I," Ned said, and Lindy grimaced

It was a typical watershed, valleys running together, petering out south among the hills where the river ran. The sky was clear, except for a long, glinting strip, slowly in motion- a distant flight of beetles, wings glistening, so remote they resembled a wide vapour trail. The valley came below, the river like a ribbon between banks clothed with a low, grey plant.

They landed at a spot where brown sandstone showed through the plants. As the craft dropped, Bill saw that the ground and stems swarmed with beetles, so thick that they ran on and over each other, a great carpet stretching as far as he could see. The rotors swished to a standstill, and Lindy looked down at the ground.

"I don’t feel much like hiking among this lot, Bill ! "

He smiled. “ Can’t blame you. I want to look at the river-that’s why I came.”

He walked towards lower ground with Ned. The river was ahead, but narrower here, as they had come a long way up the valley. All the beetles were large, mature insects. As Bill descended the rocky ground, a cloud of them went over, very low, darkening

the sky. Their wings sounded like heavy wind, and they would obviously land a few miles higher up the valley.

“ It must take them a good many days to get here, from the sea.” Ned pointed out. “ Instinct is a wonderful thing.”

Bill looked back towards the helicopter. They had walked a full mile, and there had been an almost uninterrupted carpet of beetles. It was another mile to the river.

They could only walk slowly, and after ten minutes Ned sat down abruptly on a high rock.

“ Ahead is just the same, Bill,” he objected. “ Why go on?”

Bill paused. “ I’m not sure why, Ned ! Stay here if you want.”

He left Ned on the rock, and descended the undulant slopes. He was half way between the rock and the river when he noticed the first stream. A tiny trickle, but in a well defined path through the sandstone, it bounced rapidly towards the river. Further on, other trickles were visible, emerging from among the low plants, joining each other, until they were substantial streams, running down to join the water below. Beetles swarmed over the plants and sandstone.

There was a heavy, mysterious silence lower down the valley. The streams were frequent, and he could easily believe that, united along all the miles of the valley, they could form the river below. The beetles were slower, like insects that had paired, deposited eggs, and lost motivation.

Down at the river bank, many streams bubbled rapidly, filling the river. There was some evidence of decaying beetles in the water. Presumably all such matter was consumed by the larvae, in their downward passage in the slow current, Bill thought. The beetles died here.

He knelt down, examining some of them nearby. They had a thin, shrivelled appearance. Their stock of food, gathered days or weeks before in the dance on the sea, was exhausted. Occasionally larger beetles came, flying low, individuals split from clouds now higher up the valley. They were fat, shining with gleaming cases over their wings. Bill squatted, watching them, wondering. One, near his feet, paused momentarily, depositing a few drops of clear liquid, then moved on, pausing again, depositing another drop, its body visibly shrinking.

For an instant Bill’s tongue clove to his mouth, then he rose quickly, excitement in his eyes, and ran up the slope. At his noisy, rapid progress beetles rose ahead, clouds through which he ran, as through an insect snowstorm.

Ned got up quickly, startled. Bill pointed to the helicopter.

"We've got to get back to Sand Flat quick !"

He scarcely spoke during the flight, but sent the machine skimming at maximum speed in a direct course. When they were on the straight run for the camp, and it was visible ahead, Lindy's annoyance began to show.

" Sorry," Bill said. " But I was thinking we had all agreed on1 the beetle life-cycle ! They lay high up the valley, among the plants and streams. Their larvae descend in the river, taking quite a time to reach the sea. Presumably there is some seasonal variation in numbers, which explains the increase in the larvae filtered out at the sluice. In the sea, they grow, feed on each other, and eventually emerge as a flying beetle. The beetles grow, until they are adult, and they fly up the river course, descend in the valleys, and repeat the cycle."

"Agreed long ago," Lindy said acidly

Bill scarcely heard. " Could the method of filtering you are using be extended ? Very much, I mean- for example, to treat all the water going over the new aqueduct ?"

She frowned. " Probably. At least the early filtering would be possible, and that removes nine-tenths of the larvae. It would need big rotary filters, but it could be done."

" Good "

Men were around the helicopters on the field. One craft was rising slowly. Long tubes with nozzles, from which the vaporised chemicals would be sprayed, projected underneath.

Bill sent the helicopter towards the machine, swooping low over it. He circled, rising quickly, dropping again until his wheels were dangerously near the other machine's blades. Its pilot glared at him, pointing away, but Bill swooped over again, pointing earthwards.

At his sixth attempt the other realised he was determined, and both machines sank slowly, landing a few paces apart. The pilot got out, angry. Simultaneously, Major Stanton appeared at the field edge, standing in a truck that raced towards them.

Bill got out slowly. Stanton was red, and jumped from the truck.

" This means the end of your career, Cartwright ! I shall demand you are removed-"

Bill’s fingers closed on his arm. “ Don’t say any more until you’ve heard me out, Major !”

He almost forced Stanton back towards the helicopter, from which Lindy and Ned had emerged. There, he released him.

"I’ve built a good aqueduct, Major," he said.

Stanton swore. “ Admittedly. But since then you’ve disgraced yourself !”

“ An aqueduct is no use without water, Major,” Bill put in hastily. “ It’s part of my job to see the aqueduct is useful. Let’s put it that way.” He silenced them with a hand. “There’s no rainfall- but a river. Didn’t you ever wonder how ?”

“ Naturally,” Major Stanton said with acid irony. “ But it can be investigated later. Probably moisture-storing rocks.”

“ Probably not,” Bill disagreed. A thin scattering of straggling beetles dotted the ground. There always were a few, everywhere. “ These things emerge, eat and grow at the sea. They fly up the valleys, and lay their eggs.”

“ So I am aware,” Stanton snorted. “ What has all this to do with the aqueduct ?”

“ Everything.” Bill looked up, pointing. A vast cloud of beetles, miles wide, miles long, uncountable in multitude, was winging northwards in the distant sky. “More regular than rainclouds, Major ! And driven up stream by instinct, and the need to survive ! We can arrange rotary filters so that the larvae are diverted and go down to the sea, while the water we need crosses the aqueduct. By that method, we shan’t reduce the number of larvae too significantly.

“ Not reduce the larvae," Stanton growled. “ I mean to exterminate them !’

“ If you do, there’ll be no river,” Bill said finally. “ Each beetle carries its cargo of water- just a few drops each ! Multiply those drops by the number, just as the moisture droplets in a rain cloud form a river, and you have that!” He pointed towards the river beyond the sandstone ridge. He saw that Lindy and Ned understood, and that astonishment was replacing the anger on Stanton’s face. Bill raised a finger towards the sky.

"There is your aqueduct," he said

The bugs were a silver streak in the sky, now. A cloud that moved steadily northwards, the length of half the sky, but slow with distance. A straggler from the bonnet of the

Major’s truck spread its wings and rose, heavy with its burden.

“I think you had better change your orders, Major,” Bill said quietly. “ And I would appreciate a full report going back to Earth soon, specially mentioning the extreme importance of this discovery !”

He smiled, watching the receding cloud of beetles. He could probably help Stanton write that report.

Evening settled over the hemisphere, and the huge clouds of beetles rose, each ponderous with its burden. Their small legs and mandibles were drawn in, their oval bodies were hollow, adapted by long selection as water vessels. Their major strength was in their wings, devised to carry the heavy load, but their endurance was only sufficient to take them far up the valley, on this single flight. Microscopic larvae already swam in the water each held, and upon the deposited moisture being sufficient to join the first trickle that would reach the river depended the survival of the larvae. Aeons of natural selection had long ago eliminated beetles whose water carrying ability was too small.

As the planet turned, vast swarms rose, hiding the stars, driven in land by instinct. The sun of Canis Ven was already below the horizon, and Lindy halted with Bill, watching a luminous cloud of beetles sweep across the night sky.

“ There’ll be a lot to go in our report, Bill,” she said, voice awed. “ It’s high time I began preparing my part of it.” She furrowed her brow. “ What shall I call these beetles-”

Bill smiled. The huge flight of insects was like a cloud illuminated by faint luminous green.

“I can think of a name,” he suggested. “ How about Aquarius Beetles- the Water Carriers.”