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A TENDERFOOT IN SPACE

When this book was in process, Dr. Kondo asked me whether there were any stories of Robert's which had not been reprinted. On looking over the list of stories, I found that "A Tenderfoot in Space" had never been printed in anything except when it originally appeared in Boys' Life. All copies in our possession had been sent to the UCSC Archives, so I asked them to Xerox those and send them to me. And found this introduction by Robert, which he had added to the carbon in the library before he sent it down there. I was completely surprised, and asked Dr. Kondo whether he would like to use it? Here it is.

—Virginia Heinlein

This was written a year before Sputnik and is laid on the Venus earthbound astronomers inferred before space probes. Two hours of rewriting—a word here, a word there—could change it to a planet around some other star. But to what purpose? Would The Tempset be improved if Bohemia had a sea coast? If I ever publish that

collection of Boy Scout stories, this story will appear unchanged.

Nixie is (of course) my own dog. But in 1919, when I was 12 and a Scout, he had to leave me—a streetcar hit him.

If this universe has any reasonable teleology whatever (a point on which I am unsure), then there is some provision for the Nixies in it.

I

"Heel, Nixie," the boy said softly, "and keep quiet."

The little mongrel took position left and rear of his boy, waited. He could feel that Charlie was upset and he wanted to know why—but an order from Charlie could not be questioned.

The boy tried to see whether or not the policeman was noticing them. He felt light-headed—neither he nor his dog had eaten that day. They had stopped in front of this supermarket, not to buy for the boy had no money left, but because of a "BOY WANTED" sign in the window.

It was then that he had noticed the reflection of the policeman in the glass.

The boy hesitated, trying to collect his cloudy thoughts. Should he go inside and ask for the job? Or should he saunter past the policeman? Pretend to be just out for a walk?

The boy decided to go on, get out of sight. He signalled the dog to stay close and turned away from the window. Nixie came along, tail high. He did not care where they went as long as he was with Charlie. Charlie had belonged to him as far back as he could remember; he could imagine no other condition. In fact Nixie would not have lived past his tenth day had not Charlie fallen in love with him; Nixie had been the least attractive of an unfortunate litter; his mother was Champion Lady Diana of Qjai—his father was unknown.

But Nixie was not aware that a neighbor boy had begged his life from his first owners. His philosophy was simple: enough to eat, enough sleep, and the rest of his time spent playing with Charlie. This present outing had been Charlie's idea, but any outing was welcome. The shortage of food was a nuisance but Nixie automatically forgave Charlie such errors—after all, boys will be boys and a wise dog accepted the fact. The only thing that troubled him was that Charlie did not have the happy heart which was a proper part of all hikes.

As they moved past the man in the blue uniform, Nixie felt the man's interest in them, sniffed his odor, but could find no real unfriendliness in it. But Charlie was nervous, alert, so Nixie kept his own attention high.

The man in uniform said, "Just a moment, son—"

Charlie stopped, Nixie stopped. "You speaking to me, officer?"

"Yes. What's your dog's name?"

Nixie felt Charlie's sudden terror, got ready to attack. He had never yet had to bite anyone for his boy—but he was instantly ready. The hair between his shoulder blades stood up.

Charlie answered, "Uh... his name is 'Spot.'"

"So?" The stranger said sharply, "Nixie!"

Nixie had been keeping his eyes elsewhere, in order not to distract his ears, his nose, and the inner sense with which he touched people's feelings. But he was so startled at hearing this stranger call him by name that he turned his head and looked at him.

"His name is 'Spot,' is it?" the policeman said quietly. "And mine is Santa Claus. But you're Charlie Vaughn and you're going home." He spoke into his helmet phone: "Nelson, reporting a pickup on that Vaughn missing-persons flier. Send a car. I'm in front of the new supermarket."

Nixie had trouble sorting out Charlie's feelings; they were both sad and glad. The stranger's feelings were slightly happy but mostly nothing; Nixie decided to wait

and see. He enjoyed the ride in the police car, as he always enjoyed rides, but Charlie did not, which spoiled it a little.

They were taken to the local Justice of the Peace. "You're Charles Vaughn?"

Nixie's boy felt unhappy and said nothing.

"Speak up, son," insisted the old man. "If you aren't, then you must have stolen that dog." He read from a paper—"accompanied by a small brown mongrel, male, well trained, responds to the name 'Nixie.' Well?"

Nixie's boy answered faintly, "I'm Charlie Vaughn."

"That's better. You'll stay here until your parents pick you up." The judge frowned. "I can't understand your running away. Your folks are emigrating to Venus, aren't they?"

"Yes, sir."

"You're the first boy I ever met who didn't want to make the Big Jump." He pointed to a pin on the boy's lapel. "And I thought Scouts were trustworthy. Not to mention obedient. What got into you, son? Are you scared of the Big Jump? 'A Scout is Brave.' That doesn't mean you don't have to be scared—everybody is at times. 'Brave' simply means you don't run even if you are scared."

"I'm not scared," Charlie said stubbornly. "I want to go to Venus."

"Then why run away when your family is about to leave?"

Nixie felt such a burst of warm happy-sadness from Charlie that he licked his hand. "Because Nixie can't go!"

"Oh." The judge looked at boy and dog. "I'm sorry, son. That problem is beyond my jurisdiction." He drummed his desk top. "Charlie... will you promise, Scout's honor, not to run away again until your parents show up?"

"Uh... yes, sir."

"Okay. Joe, take them to my place. Tell my wife she had better see how recently they've had anything to eat."

The trip home was long. Nixie enjoyed it, even though Charlie's father was happy-angry and his mother was happy-sad and Charlie himself was happy-sad-worried. When Nixie was home he checked quickly through each room, making sure that all was in order and that there were no new smells. Then he returned to Charlie.

The feelings had changed. Mr. Vaughn was angry, Mrs. Vaughn was sad, Charlie himself gave out such bitter stubbornness that Nixie went to him, jumped onto his lap, and tried to lick his face. Charlie settled Nixie beside him, started digging fingers into the loose skin back of Nixie's neck. Nixie quieted at once, satisfied that he and his boy could face together whatever it was—but it distressed him that the other two were not happy. Charlie belonged to him; they belonged to Charlie; things were better when they were happy, too.

Mr. Vaughn said, "Go to bed, young man, and sleep on it. I'll speak with you again tomorrow."

"Yes, sir. Good night, sir."

"Kiss your mother goodnight. One thing more—Do I need to lock doors to be sure you will be here in the morning?"

"No, sir."

Nixie got on the foot of the bed as usual, tromped out a space, laid his tail over his nose, and started to go to sleep. But his boy was not sleeping; his sadness was taking the distressing form of heaves and sobs. So Nixie got up, went to the other end of the bed and licked away tears—then let himself be pulled into Charlie's arms and tears applied directly to his neck. It was not comfortable and too hot, besides being taboo. But it was worth enduring as Charlie started to quiet down, presently went to sleep.

Nixie waited, gave him a lick on the face to check his sleeping, then moved to his end of the bed.

Mrs. Vaughn said to Mr. Vaughn, "Charles, isn't there anything we can do for the boy?"

"Confound it, Nora. We're getting to Venus with too little money as it is. If anything goes wrong, we'll be dependent on charity."

"But we do have a little spare cash."

"Too little. Do you think I haven't considered it? Why, the fare for that worthless dog would be almost as much as it is for Charlie himself! Out of the question! So why nag me? Do you think I enjoy this decision?"

"No, dear." Mrs. Vaughn pondered. "How much does Nixie weigh? I... well, I think I could reduce ten more pounds if I really tried."

"What? Do you want to arrive on Venus a living skeleton? You've reduced all the doctor advises, and so have I."

"Well... I thought that if somehow, among us, we could squeeze out Nixie's weight—it's not as if he were a St. Bernard!—we could swap it against what we weighed for our tickets."

Mr. Vaughn shook his head unhappily. "They don't do it that way."

"You told me yourself that weight was everything. You even got rid of your chess set."

"We could afford thirty pounds of chess sets, or china, or cheese, where we can't afford thirty pounds of dog."

"I don't see why not."

"Let me explain. Surely, it's weight; it's always weight in a space ship. But it isn't just my hundred and sixty pounds, or your hundred and twenty, not Charlie's hundred and ten. We're not dead weight; we have to eat and drink and breathe air and have room to move—that last takes more weight because it takes more ship weight to hold a live person than it does for an equal weight in the cargo hold. For a human being there is a complicated formula—hull weight equal to twice the passenger's weight, plus the number of days in space times four pounds. It takes a hundred and forty-six days to get to Venus—so it means that the calculated weight for each

of us amounts to six hundred and sixteen pounds before they even figure in our actual weights. But for a dog the rate is even higher—five pounds per day instead of four."

"That seems unfair. Surely a little dog can't eat as much as a man? Why, Nixie's food costs hardly anything."

Her husband snorted. "Nixie eats his own rations and half of what goes on Charlie's plate. However, it's not only the fact that a dog does eat more for his weight, but also they don't reprocess waste with a dog, not even for hydroponics."

"Why not? Oh, I know what you mean. But it seems silly."

"The passengers wouldn't like it. Never mind; the rule is: five pounds per day for dogs. Do you know what that makes Nixie's fare? Over three thousand dollars!"

"My goodness!"

"My ticket comes to thirty-eight hundred dollars and some, you get by for thirty-four hundred, and Charlie's fare is thirty-three hundred—yet that confounded mongrel dog, which we couldn't sell for his veterinary bills, would cost three thousand dollars. If we had that to spare—which we haven't—the humane thing would be to adopt some orphan, spend the money on him, and thereby give him a chance on an uncrowded planet... not waste it on a dog. Confound it!—a year from now Charlie will have forgotten this dog."

"I wonder."

"He will. When I was a kid, I had to give up dogs—more than once they died, or something. I got over it. Charlie has to make up his mind whether to give Nixie away... or have him put to sleep." He chewed his lip. "We'll get him a pup on Venus."

"It won't be Nixie."

"He can name it Nixie. He'll love it as much."

"But—Charles, how is it there are dogs on Venus if it's so dreadfully expensive to get them there?"

"Eh? I think the first exploring parties used them to scout. In any case they're always shipping animals to Venus; our own ship is taking a load of milch cows."

"That must be terribly expensive."

"Yes and no. They ship them in sleep-freeze of course, and a lot of them never revive. But they cut their losses by butchering the dead ones and selling the meat at fancy prices to the colonists. Then the ones that live have calves and eventually it pays off." He stood up. "Nora, let's go to bed. It's sad—but our boy is going to have to make a man's decision. Give the mutt away, or have him put to sleep."

"Yes, dear." She sighed. "I'm coming."

Nixie was in his usual place at breakfast—lying beside Charlie's chair, accepting tidbits without calling attention to himself. He had learned long ago the rules of the dining room: no barking, no whining, no begging for food, no paws on laps, else the pets of his pet would make difficulties. Nixie was satisfied. He had learned as a puppy to take the world as it was, cheerful over its good points, patient with its minor shortcomings. Shoes were not to be chewed, people were not to be jumped on, most strangers must be allowed to approach the hOuse (subject, of course, to strict scrutiny and constant alertness)—a few simple rules and everyone was happy. Live and let live.

He was aware that his boy was not happy even this beautiful morning. But he had explored this feeling carefully, touching his boy's mind with gentle care by means of his canine sense for feelings, and had decided, from his superior maturity, that the mood would wear off. Boys were sometimes sad and a wise dog was

resigned to it.

Mr. Vaughn finished his coffee, put his napkin aside. "Well, young man?"

Charlie did not answer. Nixie felt a change suddenly to a feeling more aggressive and

much stronger but no better. He pricked up his ears and waited.

"Chuck," his father said, "last night I gave you a choice. Have you made up your mind?"

"Yes, Dad." Charlie's voice was very low.

"Eh? Then tell me."

Charlie looked at the tablecloth. "You and Mother go to Venus. Nixie and I are staying here."

Nixie could feel anger welling up in the man... felt him control it. "You're figuring on running away again?"

"No, sir," Charlie answered stubbornly. "You can sign me over to the state school."

"Charlie!" It was Charlie's mother who spoke. Nixie tried to sort out the rush of emotions impinging on him.

"Yes," his father said at last, "I could use your passage money to pay the state for your first three years or so, and agree to pay your support until you are eighteen. But I shan't."

"Huh? Why not, Dad?"

"Because, old-fashioned as it sounds, I am head of this family. I am responsible for it--and not just food, shelter, and clothing, but its total welfare. Until you are old enough to take care of yourself I mean to keep an eye on you. One of the prerogatives which go with my responsibility is deciding where the family shall live. I have a better job offered me on Venus than I could ever hope for here, so I'm going to Venus--and my family goes with me." He drummed on the table, hesitated. "I think your chances are better on a pioneer planet, too--but, when you are of age, if you think otherwise, I'll pay your fare back to Earth. But you go with us. Understand?"

Charlie nodded, his face glum.

"Very well. I'm amazed that you apparently care more for that dog than you do for your mother--and myself. But--"

"It isn't that, Dad. Nixie needs--"

"Quiet. I don't suppose you realize it, but I tried to

figure this out--I'm not taking your dog away from you out of meanness. If I could afford it, I'd buy the hound a ticket. But something your mother said last night brought up a third possibility."

Charlie looked up suddenly, and so did Nixie; wondering why the surge of hope in his boy.

"I can't buy Nixie a ticket... but it's possible to ship him as freight."

"Huh? Why, sure, Dad! Oh, I know he'd have to be caged up--but I'd go down and feed him every day and pet him and tell him it was all right and--"

"Slow down! I don't mean that. All I can afford is to have him shipped the way animals are always shipped in space ships... in sleep-freeze."

Charlie's mouth hung open. He managed to say, "But that's--"

"That's dangerous. As near as I remember, it's about fifty-fifty whether he wakes up at the other end. But if you want to risk it--well, perhaps it's better than giving him away to strangers, and I'm sure you would prefer it to taking him down to the vet's and having him put to sleep."

Charlie did not answer. Nixie felt such a storm of conflicting emotions in Charlie that the dog violated dining room rules; he raised up and licked the boy's hand.

Charlie grabbed the dog's ear. "All right, Dad," he said gruffly. "We'll risk it--if that's the only way Nixie and I can still be partners."

Nixie did not enjoy the last few days before leaving; they held too many changes. Any proper dog likes excitement, but home is for peace and quiet. Things should be orderly there--food and water always in the same place, newspapers to fetch at certain hours, milkmen to supervise at regular times, furniture all in its proper place. But during that week all was change--nothing on time, nothing in order. Strange men came into the house

(always a matter for suspicion), and he, Nixie, was not even allowed to protest, much less give them the what-for they had coming.

He was assured by Charlie and Mrs. Vaughn that it was "all right" and he had to accept it, even though it obviously was not all right. His knowledge of English was accurate for a few dozen words but there was no way to explain to him that almost everything owned by the Vaughn family was being sold, or thrown away... nor would it have reassured him. Some things in life were permanent; he had never doubted that the Vaughn home was first among these certainties

By the night before they left, the rooms were bare except for beds. Nixie trotted around the house, sniffing places where familiar objects had been, asking his nose to tell him that his eyes deceived him, whining at the results. Even more upsetting than physical change was emotional change, a heady and not entirely happy excitement which he could feel in all three of his people.

There was a better time that evening, as Nixie was allowed to go to Scout meeting. Nixie always went on hikes and had formerly attended all meetings. But he now attended only outdoor meetings since an incident the previous winter--Nixie felt that too much fuss had been made about it... just some spilled cocoa and a few broken cups and anyhow it had been that cat's fault.

But this meeting he was allowed to attend because it was Charlie's last Scout meeting on Earth. Nixie was not aware of that but he greatly enjoyed the privilege, especially as the meeting was followed by a party at which Nixie became comfortably stuffed with hot dogs and pop. Scoutmaster McIntosh presented Charlie with a letter of withdrawal, certifying his status and merit badges and asking his admission into any troop on Venus. Nixie joined happily in the applause, trying to outbark the clapping.

Then the Scoutmaster said, "Okay, Rip."

Rip was senior patrol leader. He got up and said, "Quiet, fellows. Hold it, you crazy savages! Charlie, I don't have to tell *you that we're all sorry to see you go... but we hope you have a swell time on Venus and now and then send a postcard to Troop Twenty-Eight and tell us about it--we'll post 'em on the bulletin board. Anyhow, we wanted to get you a going-away present. But Mr. McIntosh pointed out that you were on a very strict weight allowance and practically anything would either cost you more to take with you than we had paid for it, or maybe you couldn't take it at all, which wouldn't be much of a present.

"But it finally occurred to us that we could do one thing. Nixie--"

Nixie's ears pricked. Charlie said softly, "Steady, boy."

"Nixie has been with us almost as long as you have. He's been around, poking his cold nose into things, longer than any of the tenderfeet, and longer even than some of the second class. So we decided he ought to have his own letter of withdrawal, so that the troop you join on Venus will know that Nixie is a Scout in good standing. Give it to him, Kenny."

The scribe passed over the letter. It was phrased like Charlie's letter, save that it named "Nixie Vaughn, Tenderfoot Scout" and diplomatically omitted the subject of merit badges. It was signed by the scribe, the scoutmaster, and the patrol leaders and countersigned by every member of the troop. Charlie showed it to Nixie, who sniffed it. Everybody applauded, so Nixie joined happily in applauding himself.

"One more thing," added Rip. "Now that Nixie is officially a Scout, he has to have his badge. So send him front and center."

Charlie did so. They had worked their way through the Dog Care merit badge together while Nixie was a pup, all feet and floppy ears; it had made Nixie a much more acceptable member of the Vaughn family. But the rudimentary dog training required for the merit badge had

stirred Charlie's interest; they had gone on to Dog Obedience School together and Nixie had progressed from easy spoken commands to more difficult silent hand signals.

Charlie used them now. At his signal Nixie trotted forward, sat stiffly at attention, sat neatly drooped in front of his chest, while Rip fastened the tenderfoot badge to his collar, then Nixie raised his right paw in salute and gave one short bark, all to hand signals.

The applause was loud and Nixie trembled with eagerness to join it. But Charlie signalled "hold & quiet," so Nixie remained silently poised in salute until the clapping died away. He returned to heel just as silently, though quivering with excitement. The purpose of the ceremony may not have been clear to him—if so, he was not the first tenderfoot Scout to be a little confused. But it was perfectly clear that he was the center of attention and was being approved of by his friends; it was a high point in his life.

But all in all there had been too much excitement for a dog in one week; the trip to White Sands Airport, shut up in a travel case and away from Charlie, was the last straw. When Charlie came to claim him at the baggage room of White Sands Airport, his relief was so great that he had a puppyish accident, and was bitterly ashamed.

He quieted down on the drive from airport to spaceport, then was disquieted again when he was taken into a room which reminded him of his unpleasant trips to the veterinary—the smells, the white-coated figure, the bare table where a dog had to hold still and be hurt. He stopped dead.

"Come, Nixie!" Charlie said firmly. "None of that, boy. Up!"

Nixie gave a little sigh, advanced and jumped onto the examination table, stood docile but trembling.

"Have him lie down," the man in the white smock said. "I've got to get the needle into the large vein in his foreleg."

Nixie did so on Charlie's command, then lay tremblingly quiet while his left foreleg was shaved in a patch and sterilized. Charlie put a hand on Nixie's shoulder blades and soothed him while the veterinary surgeon probed for the vein. Nixie bared his teeth once but did not growl, even though the fear in the boy's mind was beating on him, making him just as afraid.

Suddenly the drug reached his brain and he slumped limp.

Charlie's fear surged to a peak but Nixie did not feel it. Nixie's tough little spirit had gone somewhere else, out of touch with his friend, out of space and time—wherever it is that the "I" within a man or a dog goes when the body wrapping it is unconscious.

Charlie said shrilly, "Is he all right?"

"Eh? Of course."

"Uh... I thought he had died."

"Want to listen to his heart beat?"

"Uh, no—if you say he's all right. Then he's going to be okay? He'll live through it?"

The doctor glanced at Charlie's father, back at the boy, let his eyes rest on Charlie's lapel. "Star Scout, eh?"

"Uh, yes, sir."

"Going on to Eagle?"

"Well... I'm going to try, sir."

"Good. Look, son. If I put your dog over on that shelf, in a couple of hours he'll be sleeping normally and by tomorrow he won't even know he was out. But if I take him back to the chill room and start him on the cycle—" He shrugged. "Well, I've put eighty head of cattle under today. If forty percent are revived, it's a good shipment. I do my best."

Charlie looked grey. The surgeon looked at Mr. Vaughn, back at the boy. "Son, I know a man who's looking for a dog for his kids. Say the word and you won't have to worry about whether this pooch's system will recover from a shock it was never intended to take."

Mr. Vaughn said, "Well, son?"

Charlie stood mute, in an agony of indecision. At last Mr. Vaughn said-sharply, "Chuck, we've got just twenty minutes before we must check in with Emigration. Well? What's your answer?"

Charlie did not seem to hear. Timidly he put out one hand, barely touched the still form with the staring, unseeing eyes. Then he snatched his hand back and squeaked, "No! We're going to Venus—both of us!"—turned and ran out of the room.

The veterinary spread his hands helplessly. "I tried."

"I know you - did, Doctor," Mr. Vaughn answered gravely. "Thank you."

The Vaughns took the usual emigrant routing: winged shuttle rocket to the inner satellite station, ugly wingless ferry rocket to the outer station, transshipment there to the great globular cargo liner Hesperus. The jumps and changes took two days; they stayed in the deepspace ship for twenty-one tedious weeks, falling in half-elliptical orbit from Earth down to Venus. The time was fixed, an inescapable consequence of the law of gravity and the sizes and shapes of the two planetary orbits.

At first Charlie was terribly excited. The terrific highgravity boost to break away from Earth's mighty grasp was as much of a shocker as he had hoped; six gravities is shocking, even to those used to it. When the shuttle rocket went into free fall a few minutes later, utter weightlessness was as distressing, confusing—and exciting—as he had hoped. It was so upsetting that he would have lost his lunch had he not been injected with anti-nausea drug.

Earth, seen from space, looked as it had looked in color-stereo pictures, but he found that the real thing is as vastly more satisfying as a hamburger is better than a picture of one. In the outer satellite station, someone pointed out to him the famous Captain Nordhoff, just back from Pluto. Charlie recognized those stern, lined

features, familiar from TV and news pictures, and realized with odd surprise that the hero was a man, like everyone else. He decided to be a spaceman and famous explorer himself.

S. S. Hesperus was a disappointment. It "blasted" away from the outer station with a gentle shove, onetenth gravity, instead of the soul-satisfying, bonegrinding, ear-shattering blast with which the shuttle had left Earth. Also, despite its enormous size, it was terribly crowded. After the Captain had his ship in orbit to intercept Venus five months later, he placed spin on his ship to give his passengers artificial weight—which took from Charlie the pleasant new feeling of weightlessness which he had come to enjoy.

He was bored silly in five days—and there were five months of it ahead. He shared a cramped room with his father and mother and slept in a hammock swung "nightly" (the ship used Greenwich time) between their bunks. Hammock in place, there was no room in the cubicle; even with it stowed, only one person could dress at a time. The only recreation space was the messrooms and they were always crowded. There was one view port in his part of the ship. At first it was popular, but after a few days even the kids didn't bother, for the view was always the same: stars, and more stars.

By order of the Captain, passengers could sign up for a "sightseeing tour." Charlie's chance came when they were two weeks out—a climb through accessible parts of the ship, a quick look into the power room, a longer look at the hydroponics gardens which provided fresh air and part of their food, and a ten-second glimpse through the door of the Holy of Holies, the control room, all accompanied by a lecture from a bored junior officer. It was over in two hours and Charlie was again limited to his own, very crowded part of the ship.

Up forward there were privileged passengers, who had staterooms as roomy as those of the officers and who

enjoyed the luxury of the officers' lounge—Charlie did not find out that they were aboard for almost a month, but when he did, he was righteously indignant.

His father set him straight. "They paid for it."

"Huh? But we paid, too. Why should they get—"

"They paid for luxury. Those first-class passengers each paid—about three times what your ticket cost, or mine. We got the emigrant rate—transportation and food and a place to sleep."

"I don't think it's fair."

Mr. Vaughn shrugged. "Why should we have something we haven't paid for?"

"Uh, . . . well, Dad, why should they be able to pay for luxuries we can't afford?"

"A good question. Philosophers ever since Aristotle have struggled with that one. Maybe you'll tell me, someday."

"Huh? What do you mean, Dad?"

"Don't say 'Huh.' Chuck, I'm taking you to a brandnew planet. If you try, you can probably get rich. Then maybe you can tell me why a man with money can command luxuries that poor people can't."

"But we aren't poor!"

"No, we are not. But we aren't rich either. Maybe you've got the drive to get rich. One thing is sure: on Venus the opportunities are all around you. Never mind—how about a game before dinner?"

Charlie still resented being shut out of the nicest parts of the ship—he had never felt like a second-class anything (citizen, or passenger) before in his life; the feeling was not pleasant. He decided to get rich on Venus. He would make the biggest uranium strike in history, then he would ride first class between Venus and Earth whenever he felt like it—that would teach those stuck-up snobs!

He then remembered he had already decided to be a famous spaceman. Well, he would do both. Someday he would own a space line... and one of the ships would be his private yacht. But by the time the Hesperus reached the halfway point he no longer thought about it.

The emigrants saw little of the ship's crew, but Charlie got acquainted with Slim, the emigrants' cook. Slim was called so for the reason that cooks usually are; he sampled his own wares all day long and was pear shaped.

Like all space ships, the Hesperus was undermanned except for astrogators and engineers—why hire a cook's helper when the space can be sold to a passenger? It was cheaper to pay high wages to a cook who could perform production-line miracles without a helper. And Slim could.

But he could use a helper. Charlie's merit badge in cooking plus a willingness to do as he was told made him Slim's favorite volunteer assistant. Charlie got from it something to do with his time, sandwiches and snacks whenever he wanted them, and lots of knowledgeable conversation. Slim had not been to college but his curiosity had never dried up; he had read everything worth reading in several ship's libraries and had kept his eyes open dirtside on every inhabited planet in the Solar System.

"Slim, what's it like on Venus?"

"Mmm... pretty much like the books say. Rainy. Hot. Not too bad at Borealis, where you'll land."

"Yes—but what's it like?"

"Why not wait and see? Give that stew a stir... and switch on the shortwaver. Did you know that they used to figure that Venus couldn't be lived on?"

"Huh? No, I didn't."

"struth. Back in the days when we didn't have space flight, scientists were certain that Venus didn't have either oxygen nor water. They figured it was a desert, with sand storms and no air you could breathe. Proved it, all by scientific logic."

"But how could they make such a mistake? I mean, obviously, with clouds all over it and—"

"The clouds didn't show water vapor, not through a spectroscope they didn't. Showed lots of carbon dioxide, though, and by the science of the last century they figured they had proved that Venus couldn't support life."

"Funny sort of science! I guess they were pretty ignorant in those days."

"Don't go running down our grandfathers. If it weren't for them, you and I would be squatting in a cave, scratching fleas. No, Bub, they were pretty sharp; they just didn't have all the facts. We've got more facts, but that doesn't make us smarter. Put them biscuits over here. The way I see it, it just goes to show that the only way to tell what's in a stew is to eat it... and even then you aren't always sure. Venus turned out to be a very nice place. For ducks. If there were any ducks there. Which there ain't."

"Do you like Venus?"

"I like any place I don't have to stay in too long. Okay, let's feed the hungry mob."

The food in the Hesperus was as good as the living accommodations were bad. This was partly Slim's genius, but was also the fact that food in a space ship costs by its weight; what it had cost Earthside matters little compared with the expense of lifting it off Earth. The choicest steaks cost the spaceline owners little more than the same weight of rice—and any steaks left over could be sold at high prices to colonists weary for a taste of Earth food. So the emigrants ate as well as the first class passengers, even though not with fine service and fancy surroundings. When Slim was ready he opened a shutter in the galley partition and Charlie dealt out the wonderful viands like chow in a Scout camp to passengers queued up with plates. Charlie enjoyed this chore. It made him feel like a member of the crew, a spaceman himself.

Charlie almost managed not to worry about Nixie, having told himself that there was nothing to worry

about. They were a month past midpoint, with Venus only six weeks away before he discussed it with Slim. "Look, Slim, you know a lot about such things. Nixie'll make it all right... won't he?"

"Hand me that paddle; Mmm... don't know as I ever ran across a dog in space before. Cats now... cats belong in space. They're clean and neat and help to keep down mice and rats."

"I don't like cats."

"Ever lived with a cat? No, I see you haven't. How can you have the gall not to like something you don't know anything about? Wait till you've lived with a cat, then tell me what you think. Until then... well, who told you were entitled to an opinion?"

"Huh? Why, everybody is entitled to his own opinion!"

"Nonsense, Bub. Nobody is entitled to an opinion about something he is ignorant of. If the Captain told me how to bake a cake, I would politely suggest that he not stick his nose into my trade... contrariwise, I never tell him how to plot an orbit to Mars."

"Slim, you're changing the subject. How about Nixie? He's going to be all right... isn't he?"

"As I was saying, I don't have opinions about things I don't know. Happens I don't know dogs. Never had one as a kid; I was raised in a big city. Since then I've been in space. No dogs."

"Dam it, Slim!—you're being evasive: You know about sleep-freeze. I know you do."

Slim sighed. "Kid, you're going to die someday and so am I. And so is your pup. It's the one thing we can't avoid. Why, the ship's reactor could blow up and none of us would know what hit us till they started fitting us with haloes. So why fret about whether your dog comes out of sleep-freeze? Either he does and you've worried unnecessarily... or he doesn't and there's nothing you can do about it."

"So you don't think he will?"

"I didn't say that. I said it was foolish to worry."

But Charlie did worry, the talk with Slim brought it to the top of his mind, worried him more and more as the day got closer. The last month seemed longer to him than the four dreary months that had preceded it.

As for Nixie, time meant nothing to him. Suspended between life and death, he was not truly in the Hesperus at all; but somewhere else, outside of time. It was merely his shaggy little carcass that lay, stored like a ham, in the frozen hold of the ship.

Eventually the Captain slowed his ship, matched her with Venus and set her in a parking orbit alongside Venus's single satellite station. After transshipment and maddening delay the Vaughns were taken down in the winged shuttle Cupid into the clouds of Venus and landed at the north pole colony, Borealis.

For Charlie there was a still more maddening delay: cargo (which included Nixie) was unloaded after passengers and took many days because the mighty Hesperus held so much more than the little Cupid. He could not even go over to the freight sheds to inquire about Nixie as immigrants were held at the reception center for quarantine. Each one had received many shots during the five-month trip to inoculate them against the hazards of Venus; now they found that they must wait not only on most careful physical examination and observation to make sure that they were not bringing Earth diseases in with them but also to receive more shots not available aboard ship. Charlie spent the days with sore arms and gnawing anxiety.

So far he had had one glimpse outdoors—a permanently cloudy sky which never got dark and was never very bright. Borealis is at Venus's north pole and the axis of the planet is nearly erect; the unseen Sun circled the horizon, never rising nor setting by more than a few degrees. The colony lived in eternal twilight.

The lessened gravity, nine-tenths that of Earth, Charlie did not notice even though he knew he should. It had

been five months since he had felt Earth gravity and the Hesperus had maintained only one-third gravity in that outer part, where spin was most felt. Consequently Charlie felt heavier than seemed right, rather than lighter—his feet had forgotten full weight.

Nor did he notice the heavy concentration (about 2%) of carbon dioxide in the air, on which Venus's mighty jungles depended. It had once been believed that so much carbon dioxide, breathed regularly, would kill a man, but long before space flight, around 1950, experiments had shown that even a higher concentration had no bad effects. Charlie simply didn't notice it.

All in all, he might have been waiting in a dreary, barracks-like building in some tropical port on Earth. He did not see much of his father, who was busy by telephone and by germproof conference cage, conferring with his new employers and arranging for quarters, nor did he see much of his mother; Mrs. Vaughn had found the long trip difficult and was spending most of her time lying down.

Nine days after their arrival Charlie was sitting in the recreation room of the reception center, disconsolately reading a book he had already read on Earth. His father came in. "Come along."

"Huh? What's up?"

"They're going to try to revive your dog. You want to be there, don't you? Or maybe you'd rather not? I can go... and come back and tell you what happened."

Charlie gulped. "I want to be there. Let's go."

The room was like the one back at White Sands where Nixie had been put to sleep, except that in place of the table there was a cage-like contraption with glass sides. A man was making adjustments on a complex apparatus which stood next to the glass box and was connected to it. He looked up. "Yes? We're busy."

"My name is Vaughn and this is my son Charlie. He's the owner of the dog."

The man frowned. "Didn't you get my message? I'm Doctor Zecker, by the way. You're too soon; we're just bringing the dog up to temperature."

Mr. Vaughn said, "Wait here, Charlie," crossed the room and spoke in a low voice to Zecker.

Zecker shook his head. "Better wait outside."

Mr. Vaughn again spoke quietly; Dr. Zecker answered, "You don't understand. I don't even have proper equipment—I've had to adapt the force breather we use for hospital monkeys. It was never meant for a dog."

They argued in whispers for a few moments. They were interrupted by an amplified voice from outside the room "Ready with ninety-seven-X, Doctor—that's the dog."

Zecker called back, "Bring it in!"—then went on to Mr. Vaughn, "All right—keep him out of the way. Though I still say he would be better off outside." He turned, paid them no further attention.

Two men, came in, carrying a large tray. Something quiet and not very large was heaped on it, covered by dull blue cloth. Charlie whispered, "Is that Nixie?"

"I think so," his father answered in a low voice. "Keep quiet and watch."

"Can't I see him?"

"Stay where you are and don't say a word—else the doctor will make you leave."

Once inside, the team moved quickly and without speaking, as if this were something rehearsed again and again, something that must be done with great speed and perfect precision. One of them opened the glass box; the other placed the tray inside, uncovered its burden. It was Nixie, limp and apparently dead. Charlie caught his breath.

One assistant moved the little body forward, fitted a collar around its neck, closed down a partition like a guillotine, jerked his hands out of the way as the other assistant slammed the glass door through which they had put the dog in, quickly sealed it. Now Nixie was shut tight in a glass coffin, his head lying outside the end partition, his body inside. "Cycle!"

Even as he said it, the first assistant slapped a switch and fixed his eyes on the instrument board and Doctor Zecker thrust both arms into long rubber gloves passing through the glass, which allowed his hands to be inside with Nixie's body. With rapid, sure motions he picked up a hypodermic needle, already waiting inside, shoved it deep into the dog's side.

"Force breathing established."

"No heart action, Doctor!"

The reports came one on top of the other, Zecker looked up at the dials, looked back at the dog and cursed. He grabbed another needle. This one he entered gently, depressed the plunger most carefully, with his eyes on the dials. "Fibrillation."

"I can see!" he answered snappishly, put down the hypo and began to massage the dog in time with the ebb and surge of the "iron lung."

And Nixie lifted his head and cried.

It was more than an hour before Dr. Zecker let Charlie take the dog away. During most of this time the cage was open and Nixie was breathing on his own, but with the apparatus still in place, ready to start again if his heart or lungs should falter in their newly learned trick of keeping him alive. But during this waiting time Charlie was allowed to stand beside him, touch him, soothe and pet him to keep him quiet.

At last the doctor picked up Nixie and put him in Charlie's arms. "Okay, take him. But keep him quiet; I don't want him running around for the next ten hours. But not too quiet, don't let him sleep."

"Why not, Doctor?" asked Mr. Vaughn.

"Because sometimes, when you think they've made it, they just lie down and quit—as if they had had a taste of

death and found they liked it. This pooch has had a near squeak—we have only seven minutes to restore blood supply to the brain. Any longer than that... well, the brain is permanently damaged and you might as well put it out of its misery."

"You think you made it in time?"

"Do you think," Zecker answered angrily, "that I would let you take the dog if I hadn't?"

"Sorry."

"Just keep him quiet, but not too quiet. Keep him awake."

Charlie answered solemnly, "I will, Doctor Nixie's going to be all right—I know he is."

Charlie stayed awake all night long, talking to Nixie, petting him, keeping him quiet but not -asleep. Neither one of his parents tried to get him to go to bed.

II

Nixie liked Venus. It was filled with a thousand new smells, all worth investigating, countless new sounds, each of which had to be catalogued. As official guardian of the Vaughn family and of Charlie in particular, it was his duty and pleasure to examine each new phenomenon, decide whether or not it was safe for his people; he set about it happily. -

It is doubtful that he realized that he had traveled other than -that first lap in- the traveling case to White Sands. He took up his new routine without noticing the five months clipped out of his life; he took charge of the apartment assigned to the Vaughn family, inspected it

- thoroughly, then nightly checked it to be sure that all was in order and safe before he tromped out his place on the foot of Charlie's bed and tucked his tail over his nose.

He was aware that this was a new place, but he was not homesick. The other home had been satisfactory and he had never dreamed of leaving it, but this new home was still better. Not only did it have Charlie—without whom

no place could be home—not only did it have wonderful odors, but also he found the people more agreeable. In the past, many humans had been quite stuffy about flower beds and such trivia, but here he was almost never scolded or chased away; on the contrary people were anxious to speak to him, pet him, feed him. His popularity was based on arithmetic: Borealis had fifty-five thousand people but only eleven dogs; many colonists were homesick for man's traditional best friend. Nixie did not know this, but he had great capacity for enjoying the good things in life without worrying about why.

Mr. Vaughn found Venus satisfactory. His work for Synthetics of Venus, Ltd. was the sort of work he had done on Earth, save that he was now paid more and given more responsibility. The living quarters provided by the company were as comfortable as the house he had left back on Earth and he was unworried about the future of his family for the first time in years.

Mrs. Vaughn found Venus bearable but she was homesick much of the time.

Charlie, once he was over first the worry and then the delight of waking Nixie, found Venus interesting, less strange than he had expected, and from time to time he was homesick. But before long he was no longer homesick; Venus was home. He knew now what he wanted to be: a pioneer. When he was grown he would head south, deep into the unmapped jungle, carve out a plantation.

The jungle was the greatest single fact about Venus. The colony lived on the bountiful produce of the jungle. The land on which Borealis sat, buildings and spaceport, had been torn away from the hungry jungle only by flaming it dead, stabilizing the muck with gel-forming chemicals, and poisoning the land thus claimed—then flaming, cutting, or poisoning any hardy survivor that pushed its green nose up through the captured soil.

The Vaughn family lived in a large apartment building which sat on land newly captured. Facing their front door, a mere hundred feet away across scorched and

poisoned soil, a great shaggy dark-green wall loomed higher than the buffer space between. But the mindless jungle never gave up. The vines, attracted by light—their lives were spent competing for light energy—felt their way into the open space, tried to fill it. They grew with incredible speed. One day after breakfast Mr. Vaughn tried to go out his own front door, found his way hampered. While they had slept a vine had grown across the hundred-foot belt, supporting itself by tendrils against the dead soil, and had started up the front of the building. -

The police patrol of the city were armed with flame guns and spent most of their time cutting back such hardy intruders. While they had power to enforce the law, they rarely made an arrest. Borealis was a city almost free of crime; the humans were too busy fighting nature in the raw to require much attention from policemen.

But the jungle was friend as well as enemy. Its lusty life offered food for millions and billions of humans in place of the few thousands already on Venus. Under the jungle lay beds of peat, still farther down were thick coal seams representing millions of years of lush jungle growth, and pools of oil waiting to be tapped. Aerial survey by jet-copter in the volcanic regions promised uranium and thorium when man could cut his way through and get at

it. The planet offered unlimited wealth. But it did not offer it to sissies.

Charlie quickly bumped his nose into one respect in which Venus was not for sissies. His father placed him in school, he was assigned to a grade taught by Mr. deSoto. The school room was not attractive—"grim" was the word Charlie used, but he was not surprised, as most buildings in Borealis were unattractive, being constructed either of spongy logs or of lignin panels made from jungle growth.

But the school itself was "grim." Charlie had been humiliated by being placed one grade lower than he had expected; now he found that the lessons were stiff and that Mr. deSoto did not have the talent, or perhaps the wish to make them fun. Resentfully, Charlie loafed.

After three weeks Mr. deSoto kept him in after school. "Charlie, what's wrong?" -

"Huh? I mean, 'Sir?'"

"You know what I mean. You've been in my class nearly a month. You haven't learned anything. Don't you want to?"

"What? Why, sure I do."

"Surely in that usage, not 'sure.' Very well, so you want to learn; why haven't you?"

Charlie stood silent. He wanted to tell Mr. deSoto what a swell place Horace Mann Junior High School had been, with its teams and its band and its student plays and its student council (this crazy school didn't even have a student council!), and its study projects picked by the kids themselves, and the Spring Outburst and Sneak Day... and—oh, shucks!

But Mr. deSoto was speaking. "Where did you last go to school, Charlie?"

Charlie stared. Didn't the teacher even bother to read his transcript? But he told him and added, "I was a year farther along there. I guess I'm bored, having to repeat."

"I think you are, too, but I don't agree that you are repeating. They had an eighteen-year Jaw there, didn't they?" -

"Sir?"

"You were required to attend school until you were eighteen Earth-years old?"

"Oh, that! Sure. I mean 'surely.' Everybody goes to school until he's eighteen. That's to 'discourage juvenile delinquency,' he quoted.

"I wonder. Nobody ever flunked, I suppose."

"Sir?"

"Failed. Nobody ever got tossed out of school or left back for failing his studies?" -

"Of course not, Mr. deSoto. You have to keep age groups together, or they don't develop socially as they should."

"Who told you that?"

"Why, everybody knows that. I've been hearing that ever since I was in kindergarten. That's what education is for—social development."

Mr. deSoto leaned back, rubbed his nose. Presently he said slowly, "Charlie, this isn't that kind of a school at all."

Charlie waited. He was annoyed at not being invited to sit down and was wondering what would happen if he sat down anyway.

"In the first place we don't have the eighteen-year rule. You can quit school today. You know how to read. Your handwriting is sloppy but it will do. You are quick in arithmetic. You can't spell worth a hoot, but that's your misfortune; the city fathers don't care whether you learn to spell or not. You've got all the education the City of Borealis feels obliged to give you. If you want to take a flame gun and start carving out your chunk of the jungle, nobody is standing in your way. I can write a note to the Board of Education, telling them that Charles Vaughn, Jr. has gone as far as he ever will. You needn't come back tomorrow."

Charlie gulped. He had never heard of anyone being dropped from school for anything less than a knife fight. It was unthinkable—what would his folks say?

"On the other hand," Mr. deSoto went on, "Venus needs educated citizens. We'll keep anybody as long as they keep learning. The city will even send you back to Earth for advanced training if you are worth it, because we need scientists and engineers... and more teachers. But this is a struggling new community and it doesn't have a penny to waste on kids who won't study. We do flunk them in this school. If you don't study, we'll lop you off so fast you'll think you've been trimmed with a flame gun. We're not running the sort of overgrown kindergarten you were in. It's up to you. Buckle down and learn... or get out. So go home and talk it over with your folks."

Charlie was stunned. "Uh... Mr. deSoto? Are you going to talk to my father?"

"What? Heavens, no! You are their responsibility, not mine. I don't care what you do. That's all. Go home."

Charlie went home, slowly. He did not talk it over with his parents. Instead he went back to school and studied. In a few weeks he discovered that even algebra could be interesting... and that old Frozen Face was an interesting teacher when Charlie had studied hard enough to know what the man was talking about.

Mr. deSoto never mentioned the matter again.

Getting back in the Scouts was more fun but even Scouting held surprises. Mr. Qu'an, Scoutmaster of Troop Four, welcomed him heartily. "Glad to have you, Chuck. It makes me feel good when a Scout among the new citizens comes forward and says he wants to pick up the Scouting trail again." He looked over the letter Charlie had brought with him. "A good record—Star Scout at your age. Keep at it and you'll be a Double Star... both Earth and Venus."

"You mean," Charlie said slowly, "that I'm not a Star Scout here?"

"Eh? Not at all." Mr. Qu'an touched the badge on Charlie's jacket. "You won that fairly and a Court of Honor has certified you. You'll always be a Star Scout, just as a pilot is entitled to wear his comet after he's too old to herd a space ship. But let's be practical. Ever been out in the jungle?"

"Not yet, sir. But I always was good at woodcraft—"

"Mmm... Ever camped in the Florida Everglades?"

"Well... no~ sir."

"No matter. I simply wanted to point out that while the Everglades are jungle, they are an open desert compared with the jungle here. And the coral snakes and water moccasins in the Everglades are harmless little pets alongside some of the things here. Have you seen our dragonflies yet?"

"Well, a dead one, at school."

"That's the best way to see them. When you see a live one, better see it first, ... if it's a female and ready to lay eggs."

"Uh, I know about them. If you fight them off, they won't sting."

"Which is why you had better see them first."

"Mr. Qu'an? Are they really that big?"

"I've seen thirty-six-inch wing spreads. What I'm trying to say, Chuck, is that a lot of men have died learning the tricks of this jungle. If you are as smart as a Star Scout is supposed to be, you won't assume that you know what these poor fellows didn't. You'll wear that badge... but you'll class yourself in your mind as a tenderfoot, all over again, and you won't be in a hurry about promoting yourself."

Charlie swallowed it. "Yes, sir. I'll try."

"Good. We use the buddy system—you take care of your buddy and he takes care of you. I'll team you with Hans Kuppenheimer. Hans is only a Second Class Scout, but don't let that fool you. He was born here and he lives in the bush, on his father's plantation. He's the best jungle rat in the troop."

Charlie said nothing, but resolved to become a real jungle rat himself, fast. Being under the wing of a Scout who was merely second class did not appeal to him.

But Hans turned out to be easy to get along with. He was quiet, shorter but stockier than Charlie, neither unfriendly nor chummy, he simply accepted the assignment to look after Charlie. But he startled Charlie by answering, when asked, that he was twenty-three years old.

It left Charlie speechless long enough for him to realize that Hans, born here, meant Venus years, each only two

hundred twenty-five Earth days. Charlie decided that Hans was about his own age, which seemed reasonable. Time had been a subject which had confused Charlie ever since his arrival. The Venus day was only seven minutes different from that of Earth—he had merely had to have his wristwatch adjusted. But the day itself had not meant what it used to mean, because day and night at the north pole of Venus looked alike, a soft twilight.

There were only eight months in the year, exactly four weeks in each month, and an occasional odd "Year Day" to even things off. Worse still, the time of year didn't mean anything; there were no seasons, just one endless hot, damp summer. It was always the same time of day, always the same time of year; only clock and calendar kept it from being the land that time forgot. Charlie never quite got used to it.

If Nixie found the timelessness of Venus strange he never mentioned it. On Earth he had slept at night simply because Charlie did so, and, as for seasons, he had never cared much for winter anyhow. He enjoyed getting back into the Scouts even more than Charlie had, because he was welcome at every meeting. Some of the Scouts born on Earth had once had dogs; now none of them had—and Nixie was at once mascot of the troop. He was petted almost to exhaustion the first time Charlie brought him to a meeting, until Mr. Qu'an pointed out that the dog had to have some peace... then squatted down and petted Nixie himself. "Nixie," he said musingly, "a nixie is a water sprite, isn't it?" -

"Uh, I believe it does mean that," Charlie admitted, "but that isn't how he got his name."

"So?"

"Well, I was going to name him 'Champ,' but when he was a puppy I had to say 'Nix' to so many things he did that he got to thinking it was his name—and then it was."

"Mmm... more logical than most names. And even the classical meaning is appropriate in a wet place like this. What's this on his collar? I see... you've decorated him with your old tenderfoot badge."

"No, sir," Charlie corrected. "That's his badge."

"Eh?"

"Nixie is a Scout, too. The fellows in my troop back Earthside voted him into the troop. They gave him that. So Nixie is a Scout."

Mr. Qu'an raised his eyebrows and smiled. One of the boys said, "That's about the craziest yet. A dog can't be a Scout."

Charlie had doubts himself; nevertheless he was about to answer indignantly when the Scoutmaster cut smoothly in front of him. "What leads you to say that, Al?"

"Huh? Well, gosh! It's not according to Scout regulations."

"It isn't? I admit it is a new idea, but I can't recall what rule it breaks. Who brought a Handbook tonight?" The Scribe supplied one; Mr. Qu'an passed it over to Alf Rheinhardt. "Dig in, Alf. Find the rule."

Charlie diffidently produced Nixie's letter of transfer. He had brought it, but had not given it to the Scribe. Mr. Qu'an read it, nodded and said, "Looks okay." He passed the letter along to others and said, "Well, Alf?"

"In the first place, it says here that you have to be twelve years old to join—Earth years, that is, 'cause that's where the Handbook was printed. Is that dog that old? I doubt it."

Mr. Qu'an shook his head. "If I were sitting on a Court of Honor, I'd rule that the regulation did not apply. A dog grows up faster than a boy."

"Well, if you insist on joking—and Scouting is no joke to me—that's the point: a dog can't be a Scout, because he's a dog."

"Scouting is no joke to me either, Alf—though I don't see any reason not to have fun as we go. But I wasn't joking. A candidate comes along with a letter of transfer, all regular and proper. Seems to me you should go mighty slow before you refuse to respect an official act of another troop. All you've said is that Nixie is a dog. Well, didn't I see somewhere—last month's Boys' Life—I think—that the Boy Scouts of Mars had asked one of the Martian chiefs to serve on their planetary Grand Council?"

"But that's not the same thing!"

"Nothing ever is. But if a Martian—who is certainly not a human being—can hold the highest office in Scouting, I can't see how Nixie is disqualified simply because he's a dog. Seems to me you'll have to show that he can't or won't do the things that a Tenderfoot Scout should do."

"Uh..." Alf grinned knowingly. "Let's hear him explain the Scout Oath."

Mr. Qu'an turned to Charlie. "Can Nixie speak English?"

"What? Why, no, sir—but he understands it pretty well."

The Scoutmaster turned back to Alf. "Then the 'handicapped' rule applies, - Alf—we never insist that a Scout do something he can't do. If you were crippled or blind, we would change the rules to fit you. Nixie can't talk words... so if you want to quiz him about the Scout Oath, you'll have to bark. That's fair, isn't it, boys?"

The shouts of approval didn't sit well with Alf. He answered sullenly, "Well, at least he has to follow the Scout Law—every Scout has to do that."

"Yes," agreed the Scoutmaster soberly. "The Scout Law is the essence of Scouting. If you don't obey it, you aren't a Scout, no matter how many merit badges you wear. Well, Charlie? Shall we examine Nixie in Scout Law?"

Charlie bit his lip. He was sorry that he hadn't taken that badge off Nixie's collar. It was mighty nice that the fellows back home had voted Nixie into the troop...

but with this smart Aleck trying to make something of it—Why did there always have to be one in every troop who tried to take the fun out of life?

He answered reluctantly, "All right."

"Give me the Handbook. Is Nixie trustworthy?"

"Sure he is!"

"How?"

"Well... he doesn't get on furniture even if you're not watching him... and he won't touch food unless he's told to, and uh..."

"I think that's enough. Is he loyal?"

"He's loyal to me."

"Mmm... good enough. Helpful?"

"Uh, there isn't a whole lot he can do, I guess. He used to fetch newspapers in—but he can't do that here. He'll fetch anything you ask him to, if he understands what it is.,,

"Friendly—well, obviously. 'Courteous'—we'll pass him on that, seeing what he has put up with tonight. Kind?" --

"He'll let a baby try to pull his tail off, or step on his face, and never snap or growl. Uh, he did used to be kind of rough on cats, but I taught him better."

"Obedient?"

"Want to see?" Charlie put him through hand signal orders, ending with standing at attention and saluting. The applause made Nixie tremble but he held it until Charlie signalled "At ease."

"Take note of that, Alf," Mr. Qu'an said drily, "next time I have to speak to you twice. 'Cheerful'—we can skip that; I'm sure his grin isn't faked. 'Thrifty'—well, we can hardly expect him to have a savings account."

"He buries bones."

"Mmm, I suppose that's the canine equivalent. Brave?"

"I think he is. I've seen him tackle a dog three times his size—and chase it out of our yard, too, back home— back Earthside."

"Clean?"

"Smell him. He had a bath just yesterday. And he's perfectly housebroken."

"All that is left is 'Reverent'—and I don't intend to try to discuss that with him. I rule that Nixie is at least as reverent as the rascals I've heard cussing around here when they didn't think I was listening. How about it, boys? Does he pass?"

Nixie was voted into Troop Four in his tenderfoot status unanimously... Alfred Rheinhardt, Tenderfoot abstaining.

After the meeting the troop treasurer butt-on-hole Charlie. "You want to pay your dues now, Chuck?"

"Huh? Oh, yeah, sure—I brought some money."

"Good." The other Scout accepted payment. "Here— your receipt."

"Just mark it down in your book." -

"Take it. No tickie, no washee. I'm nasty about it—that's why they made me treasurer. Now about Nixie—You pay? Or do I speak to him?"

The other boy was not smiling and Charlie could not decide whether or not he was joking. He decided to play it just as soberly. "I settle for Nixie. You see, he doesn't have pockets." He dug down in his diminishing resources, managed to piece out enough to pay the small amount for Nixie. "Here."

"Thanks." The treasurer handed back a shilling. "Tenderfeet get by cheaper, under Troop by-laws. But every little bit helps. You know, when I took this job, the troop was in the hole. Now we got money in the bank."

"I believe it!" Charlie agreed. He was secretly delighted at the transaction. Nixie was no longer an honorary Scout, he was a Scout—he kept the Law and his dues were paid.

Nixie's eligibility to take part in all troop doings wa~ fbi questioned until the first hike thereafter. Mr. Qu'ar looked troubled when Charlie showed up with him. "You had better take Nixie home. We'll wait for you."

Charlie was upset. "But, Mr. Qu'an, I thought--Well, Nixie always goes on hikes."

"No doubt, back Earthside. Charlie, I'm not being

arbitrary. I don't want your dog to get hurt."

"He won't get hurt!- He's real smart."

The Scoutmaster frowned. Hans Kuppenheimer spoke up. "I think Nixie could come along, Mr. Qu'an."

"Eh?" - The Scoutmaster looked at Hans thoughtfully.

"You'll have your hands full with Chuck, since it's his first time out."

Hans had a habit of saying nothing when he had nothing to say;- he did so now. Mr. Qu'an persisted, "You'd have to look out for them both, you know."

Hans still kept quiet. "Well," Mr. Qu'an said doubtfully, "Nixie is a member of the troop. If you can take care of him--and Charlie, too--I'll let him come."

"Yes, sir."

The- Scoutmaster turned away. Charlie whispered, "Thanks, Hans. That was swell." Hans said nothing.

Hans had surprised Charlie by his first reaction to Nixie the night Nixie had been taken into the troop. While other boys were clustering around making much of Nixie, Hans had stayed a wary distance away. Charlie had felt offended. Since he was assigned with Hans as a buddy team, Charlie decided to do something about it.

After the meeting he sought out Hans. "Don't be in a hurry, Hans. I want you to get acquainted with Nixie."

The country boy still avoided the dog. "Does it bite?"

"Huh? Nixie? Of course not. Well, he would if you took a poke at me. -Not otherwise."

"I thought so. And suppose I gave you a friendly slap on- the back. He could kill a man, huh?"

Nixie had listened, tense and watchful. He could feel the fear in Hans' mind; he understood, without understanding why, that his boy was arguing with this other boy. Charlie did not seem in immediate danger, but Nixie stayed at yellow alert.

It showed. The savage carnivores who were Nixie's remote ancestors showed in his stance and his watchful eyes. The Venus-born jungle rat, drilled since babyhoo~ to keep his eyes open for just such unknown dangers could see the carnivore--and failed to see the gentle household pet. He watched the dog carefully.

Charlie said, "Why, that's nonsense, Hans. Pat him Rough him up a bit. Shake hands with him. Let hin learn your smell." When Hans still did not move Charlie asked incredulously, "Don't you like dogs?"

"I don't know. I've never seen one before, up close." Charlie's jaw dropped. But Hans had spoken the

simple truth. Some town boys in the troop, immigrant~ like Charlie, had once owned dogs Earthside. Others had friends among the handful of dogs in Borealis. But Hans alone, born on Venus and living outside town, knew so little of dogs that they were as strange to him as a tiger shark would have been.

When Charlie finally got this incredible fact firm in his mind he persisted even more strongly in Jiis--fibt to get his team buddy acquainted with his~ther partner. Before Hans went home that nght he had touched the dog, patted him, even picked him up and held him. Nixie could feel the fear go away, to be replaced by a sudden warm feeling. So Nixie snuffled Hans and licked his chin.

Hans showed up the next day at Charlie's home. He wanted to see Nixie.

In the two weeks that followed before the hike, Nixie adopted Hans as another member of Charlie's family. Subject always to his first loyalty, he accepted the other boy, took orders from him, even worked to hand signals, which he had never done with anyone but Charlie. At first he did it to please Charlie, but in time he was doing so because it was right and proper in his doggy mind, as long as it was all right with Charlie.

The troop set out on the hike. Before they reached~ the jungle at the edge of town Hans said to Charlie, "Better have him heel."

"Why? He likes to run around and poke his nose into things. But he always stays in earshot. He'll come if he's called."

Hans scowled. "Suppose he can't? Maybe he goes into bush and doesn't come out. You want to lose him?"

This was a long speech for Hans. Charlie looked surprised, then called, "Nixie! Heel!"

The dog had been supervising the van; he turned and came at once to Charlie's left and rear. Hans relaxed, said, "Better," and placed himself so that the dog trotted between them.

When the jungle loomed up over them, pierced here by a road, Mr. Qu'an held up his arm and called out, "Halt! Check watches." He held up his wrist and waited; everybody else did the same.

Jock Quentin, an Explorer Scout equipped with two-way radio, spoke into his microphone, then said, "Stand by... oh nine eleven."

"Anybody fail to check?" continued Mr. Qu'an. "All you with polarizers, establish base line."

Hans took out an odd-looking pair of spectacles with double lenses which rotated and a sighting device which snapped out. "Try it."

"Okay." Charlie accepted them gingerly. He did not yet own a light-polarizing sighter. "Why are we going to establish base line if we're going to stay on marked roads?"

Hans did not answer and Charlie felt foolish, realizing that the time to learn how not to get lost was before you got lost. He put on the polarizers and tried to establish base line.

"Base line" was the prime meridian of Venus, the direction from Borealis of the Sun at noon. To find that direction it was necessary first to find the Sun itself (in a grey, thickly overcast sky), then, using a watch, figure where the Sun would be at noon.

That direction would be south--but all directions from Borealis were south; the city lay on the north pole of the planet. The mapmakers used Borealis as a zero point and the direction of the Sun at noon as a base line. With the aid of transceivers, radar beacons, and radi compass, they were gradually establishing a grid of reference points for the few hundred square mile around Borealis. A similar project was going on at South Pole City. But the millions of square miles between pole were unknown country, more mysterious and incredibly vaster than any jungle on Earth. There- was a saying~ among the Scouts that streams at the equator were "hot enough to boil eggs," but nobody knew. As yet, no ship had landed near the equator and managed to come back.

The difficulty of telling directions on Venus is very great. The stars are always invisible. Neither magnetic compasses nor gyro compasses were of any use at the poles. Nor is there moss on the north sides of trees, nor any shadows to read--Venus is not only the land that time forgot; it is also the place of no directions.

So the colonists were forced to establish new directions. From Borealis toward the Sun at noon was prime meridian, called "base line," and any direction parallel to that was "base."- Back the other way was "reverse"; the two intermediate directions were "Left demi" and "right demi." By counting clockwise from "base," any other direction could be named.

It was not a perfect system since it used square coordinates for a spherical surface. But it was better than nothing in a place where the old directions had turned slippery--where all directions away from the city were "south" and where east and west, instead of being straight lines, were circular.

At first, Charlie could not see why, if they were going to use four directions, they didn't call them "north," "south," "east" and "west," instead of ringing in these silly names, "base,"

verse," "right demi," and "left demi." It was not until he saw in school a map of the colony, with the old familiar directions, north, south, east, west, on it and a "base line" grid drawn on top of it that he realized that the problem was not that simple. To

go east on that map you went counterclockwise on one of those little circles—but how could you tell what direction "east" was unless you knew where you were? And how could you tell how much to curve left in order to keep going east? When compasses were no good and the Sun might be in any direction, north, south, east, or west, depending on which side of the city you were on?

So he buckled down and learned the new system.

Charlie put on Hans' polarizing spectacles and looked around. He could see nothing. Light leaked around the guards of the spectacles and the glass in front of his eyes seemed opaque. He knew that he should be able to pick out the Sun, for he knew that the light from the sky, dispersed by the clouds of Venus, was polarized, made to wiggle up-and-down or sideways, instead of in all directions. He knew that these spectacles were supposed to blank out polarized light, let him see the Sun itself. But he could not see anything.

He turned slowly, blind behind the spectacles.

Hey, it was getting brighter! He swung his head back and forth, made sure he was not mistaken. "I got it!"

"False sun," Hans announced dispassionately.

"Huh?"

"You're a hundred and eighty degrees out of phase," Mr. Qu'an's voice announced. "You're looking at the reflection of the Sun. Never mind, other people have made that mistake. But it's not a mistake you can afford to make even once out in the bush... so keep trying!"

Charlie kept on turning—dam it, these specs fit so tight that he couldn't even see his feet! There it was again! Was it false sun? Or the Sun itself? How far had he turned?

He turned until he was dizzy, seeing brightness, then darkness, several times—and realized that one brightness was brighter than that which it alternated. Finally he stopped. "I'm looking at the Sun," he announced firmly.

"Okay," Hans admitted. "Jigger with it. Fine it down."

Charlie found that he could fiddle with screw settings on the sides of the spectacles and thereby kill the brightness almost completely. He did so, while swinging his head back and forth like a radar, trying to spot the smallest gleam that he could. "That's the best I can do."

"Hold still," Hans ordered. "Uncover your right eye. Mark me."

Charlie did as ordered, found himself staring with one eye down the sighter in front of the spectacles. Hans was thirty feet away, holding his Scout staff upright. "Don't move!" Hans cautioned. "Coach me on."

"Uh... come right a couple of feet."

"Here?"

"I think so. Let me check." He covered his right eye again, but found that his eye, dazzled by brighter light, could no longer pick up the faint gleam he had marked. "That's the best I can do."

Hans stretched a string along the marked direction. "My turn. Note your time." He took the spectacles, quickly gave Charlie a direction, coached him into place. The two lines differed by about ten degrees.

"Figure your hour angle," Hans said and looked at his watch.

The time was nine-thirty... and the Sun moved fifteen degrees each hour... two and a half hours to noon; that's thirty-seven and a half degrees and each minute on the face of his watch was six degrees, so—Charlie was getting confused. He looked up, saw that Hans had placed his watch on the ground and was laying out base line. Hans' watch had a twenty-four hour face; he simply pointed the hour hand at the Sun and the XII spot then pointed along base line.

No mental arithmetic, no monkeying around— "Gosh, I wish I had a watch like that!"

"Don't need it," Hans answered without looking up.

"But it makes it so simple. You just—"

"Your watch is okay. Make yourself a twenty-four hour dial out of cardboard." -

"That would work? Yeah, it would! I wish I had one now.,"

Hans fumbled in his duffel bag. "Uh, I made you one." He handed it over without looking up—a cardboard clock face, laid out for twenty-four hours.

Charlie was almost speechless. "Gee! Nixie, look at that! Say, flans, I don't know how to thank you."

~*Don't want you and Nixie getting lost," Hans answered gruffly.

Charlie took it, aimed nine-thirty along his line, marked - noon and restretched the string to match. Base line, according to his sighting, differed by ten degrees from that of Hans. In the meantime, two patrol leaders had stretched a line at right angles to base line, along where the troop was spread out. One of them moved down the line, checking angles with a protractor. Mr. Qu'an followed, checked Charlie's layout himself. "About nine degrees off," he told Charlie. "Not bad for a first try."

Charlie felt crestfallen. He knew that he and Hans could not both be right but he had had a small hope that his answer was nearer the correct one. "Uh... which way am I wrong?" -

"Left-demi. Look at Hans'—he's dead on... as usual." The Scoutmaster raised his voice. "All right, gang! Bush formation, route march. Flamers out, right and left. Rusty on point, Bill on drag—shake it up!"

"Heel, Nixie."

The road cut straight through the jungle. The clearing had been flamed back wider than the road so that the jungle did not arch over it. The column kept to the middle where the ground was packed by vehicles running to and from outlying plantations. The flamers on the flanks, both of them Explorer Scouts, walked close to the walls of green and occasionally used their flame guns

to cut back some new encroachment of vine or tree or grass. Each time they did so, they kept moving and a scavenger gang moved out, tossed the debris back into the living forest, and quickly rejoined the column. It was everybody's business to keep the roads open; the colony depended on roads more than Ancient Rome had depended on theirs.

Presently it began to rain. No one paid attention; rain was as normal as ice in Greenland. Rain was welcome; it washed off ever-present sweat and gave an illusion of coolness. -

Presently Point (Rusty Dunlop) stopped, sighted back at Drag, and shouted, "Right demi fifteen degrees!"

Drag answered, "Check!" Point continued around the slight bend in the road. They had left Borealis heading "south" of course, since no other direction was possible, but that particular south was base thirty-two degrees right demi, to which was now added fifteen degrees

lockwise.

It was Point's duty to set trail, keep lookout ahead, and announce his estimate of every change in direction. It was Drag's business to have eyes in the back of his head (since even here the jungle was - not without power to strike), keep count of his paces, and keep written record of all course changes and the number of paces between each—dead reckoning navigation marked down in a waterproof notebook strapped to his wrist. He was picked for his reliability and the evenness of his strides.

A dozen other boys were doing the same things, imitating both Point and Drag, and recording everything, paces, times, and course changes, in preparation for Pathfinder merit badges. Each time the troop stopped, each would again establish base direction and record it. Later, after the hike, they would attempt to map where they had been, using only their notes.

It was just practice, since the road was surveyed and mapped, but practice that could determine later whether they lived, or died miserably in the jungle. Mr. Qu'an

had no intention of taking the troop, including tenderfoot town boys not yet twenty Venus years old, into unexplored jungle. But older boys, seasoned explorer Scouts did go into trackless bush; some were already marking out land they would claim and try to conquer. On their ability to proceed by dead reckoning through bush and swamp and return to where they had started depended both their lives and their future livelihoods.

Mr. Qu'an dropped back, fell in beside Charlie. "Counting paces?"

"Yes, sir."

"Where's your notebook?"

"Uh, it was getting soggy in the rain, so I put it away. I'm keeping track in my head."

"That's a fine way to wind up at South Pole. Next time, bring a waterproof one."

Charlie didn't answer. He had wanted one, as he had wanted a polarizing sighter and many other things. But the Vaughn family was still scratching for a toehold; luxuries had to wait.

Mr. Qu'an looked at Charlie. "If convenient, that is," he went on gently. "Right now I don't want you to count paces anyhow."

"Sir?"

"You can't learn everything at once, and today you can't get lost. I want you to soak up junglecraft. Hans. you two move to the flank. Give Charlie a chance to see what we're passing through. Lecture him about it.

and for goodness' sake try to say more than two words at a time!"

"Yes, sir."

"And—" The Scoutmaster got no further; he was hailed by the boss of the scavenger gang. "Mr. Qu'an! Squint's got a screwbug!"

The man said something bitter under his breath, started to run. The two boys followed. The scavengers had been moving a large branch, freshly flamed down. Now they were clustered around one boy, who was

gripping his forearm. Mr. Qu'an burst into the group, grabbed the kid by that arm without saying a word, and examined it.

- He shifted his grip so that the skin was drawn tight at one spot, reached for his belt and drew a knife—dug the point into skin, and, as if he were cutting a bad spot out of an apple, excised a small chunk of flesh. Squint screwed up his face and tears came into his eyes, but he did not cry out.

The scavenger boss had his first-aid kit open. As the Scoutmaster handed his knife to a boy near him, the gang boss placed a shaker bottle in Mr. Qu'an's hand. The Scoutmaster squirted powder into the wound, accepted a pressure patch and plastered it over the cut.

Then he turned sternly to the gang boss. "Pete, why didn't you do it?"

- "Squint wanted you."

"So? Squint, you know better. Next time, let the boy closest to you get it—or cut it out yourself. It could have gone in another half inch while I was getting to you. And next time be more careful where you put your hands!"

The column had halted.- Point, looking back, saw Mr. Qu'an's wave, lifted his own arm and brought it down smartly. They moved on. Charlie said to Hans, "What's a screwbug?"

"Little thing, bright red. Cling underneath leaves."

"What do they do to you?"

"Burrow in. Abscess. Don't get 'em out, maybe lose an arm."

"Oh." Charlie added, "Could they get on Nixie?"

"Doubt it. 'Cept maybe his nose. Ought to check him over every chance we get. Other things, too."

They were on higher and drier ground now; the bush around them did not go up so high. was not quite as dense. Charlie peered into it, trying to sort out details, while Hans kept up what he probably felt was a lively discourse—usually one word at a time, such as: "Poison," "Physic," or "Eat those."

"Eat what?" Charlie asked, when Hans had made the last comment. He looked where Hans pointed, saw nothing looking like fruit, berries or nuts.

"That stuff. Sugar stick." Hans thrust cautiously into the brush with his staff, pushed aside a Venus nettle, and broke off a foot of brown twig. "Nixie! Get out of there! Heel!"

-Charlie accepted half of it, bit cautiously when he saw Hans do so.

It chewed easily. Yes, it did have a sweetish taste, about like corn syrup. Not bad!

Hans spat out pulp. "Don't swallow the cud—give you trouble."

"I wouldn't've guessed you could eat this."

"Never go hungry in the bush."

"Hans? What do you do for water? If you haven't got any?"

"Huh? Water all around you."

"Yeah, but good water."

All water is good water.... if you clean it." Hans' eyes darted around. "Find a filter ball. Chop off top and bottom. Run water through. I'll spot one, show you."

Hans found one shortly, a gross and poisonous-looking fungus. But it was some distance off the clearing and when Hans started after it, he was told gruffly by the flamer on that flank to get back from the edge and stay there. Hans shrugged. "Later."

The procession stopped in the road clearing, lunched from duffel bags. Nixie was allowed to run free, with strict instructions to stay away from the trees. Nixie didn't mind. He sampled every lunch. After a rest they went on. Occasionally they all gaye way to let some plantation- family, mounted on high trucks with great, low-pressure bolster wheels, roll past on the way to a Saturday night in town. The main road led past narrow tunnels cut into the bush, side roads to plantations. Late in the afternoon they passed one such; Hans hooked a thumb at it. "Home."

"Yours?"

"Half a mile in."

A couple of miles farther the troop left the road and started across country. But this was high land, fairly dry and semi-open, no more difficult than most forest back Earthside. Hans merely saw to it that Nixie stayed close at heel and cautioned Charlie, "Mind where you step... and if anything drops on you, brush it off quick."

They broke out shortly into a clearing, made camp, and started supper. The clearing was man-made, having been flamed down, although a green carpet had formed underfoot. The first step in making camp was to establish four corners of a rectangle, using Scout staffs; then Jock Quentin, the troop's radioman, clamped mirrors to them. After much fiddling he had a system rigged by which a powerful flashlight beam bounced around the rectangle and back into a long tube which housed a photocell; the camp was now surrounded by an invisible fence. Whenever the beam was broken an alarm would sound. --

While this was going on other Scouts were lashing staffs together, three to a unit, into long poles. Rags were sopped with a sickly-sweet fluid, fastened to the ends and the poles were erected, one at each corner of the rectangle. Charlie sniffed and made a face, "What's that stuff?"

"For dragonflies. They hate it."

"I don't blame 'em!"-

"Haven't seen one lately. But if they were swarming, you'd rub it on your hide and be glad of the stink."

"Hans? Is it true that a dragonfly sting can paralyze a man?"

"No."

"Huh? But they say--"

"Takes three or four stings. One sting will just do for an arm or a leg--unless it gets you in the spine."

"Oh." Charlie couldn't see much improvement.

"I was stung once," Hans added.

"You were? But you're still alive."

"My paw fought it off and killed it. Couldn't use my left leg for a while."

"Boy! You must be lucky."

"Unlucky, I'd say. But not unlucky as it was. We ate it."

"You ate it?"

"Sure. Mighty tasty, they are."

Charlie felt queasy. "You eat insects?."

Hans thought about it. "You ever eat a lobster?"

"Sure. But that's different."

"It sure is. Seen pictures of lobsters. Disgusting."

This gourmets' discussion was broken up by the Scoutmaster. "Hans! How about scaring up some oil weed?"

"Okay." Hans headed far the bush. Charlie followed and Nixie trotted after. Hans stopped. "Make him stay behind. We can't gather weed and watch him, too."

"All right."

Nixie protested, since it was his duty to guard Charlie. But once he understood that Charlie meant it and would not be swayed, he trotted back, tail in air, and supervised campmaking.

The boys went on. Charlie asked, "This clearing... is it the regular Scout camp?"

Hans looked surprised. "I guess so. Paw and I aren't going to set a crop till we flame it a few more times."

"You mean it's yours? Why didn't you say so?"

"You never asked." Presently he added, "Some planters, they don't like Scouts tromping around, maybe hurting a crop."

Oil weed was a low plant, resembling bracken. They gathered it in silence, except once when Hans brushed something off Charlie's arm. "Want to watch that."

While they were loading with weed Hans made quite a long speech: "These dragonflies, they aren't much. You hear them coming. You can fight 'em off, even with your hands, because they can't sting till they light. They won't sting anyway, except when they're swarming--then it's just females, ready to lay eggs." He added thoughtfully, "They're stupid, they don't know the eggs won't hatch in a man."

"They won't?"

"No. Not that it does the man much good; he dies anyway. But they think they're stinging a big amphibian, thing called kteela."

"I've seen pictures of kteela."

"So? Wait till you see one. But don't let it scare you. Kteela can't hurt you and they're more scared than you are--they just look fearsome." He brushed at his arm. "It's little things you got to watch."

Oil weed burned with a clear steady flame; the boys had a hot dinner and hot tea. No precautions were taken against fire; of the many hazards on Venus, fire was not one. The problem was to get anything to burn, not to avoid forest lire. --

After they had eaten, one boy was examined by Mr. Qu'an in first-aid and artificial respiration. Listening, Charlie found that there was much that he must learn and unlearn; conditions were different. Then Rusty Dunlop broke out a mouth organ and they sang.

Finally Mr. Qu'an yawned and said, "Sack in, Scouts. Hard day tomorrow. Pedro, first watch--then rotate down the list."

Charlie thought he would never get to sleep. The ground underneath his waterproof was not hard, but he was not used to sleeping with lighted sky- in his eyes. Besides that, he was acutely aware of strange noises in the bush around them.

He was awakened by a shout. "Dragons! Heads up, gang! Watch yourself!"

Without stopping to think, Charlie reached down, grabbed Nixie to his chest, then looked around. Several boys were pointing. Charlie looked and thought at first that he was seeing a helicopter.

Suddenly it came into perspective and he realized that it was an enormous insect... unbelievably huge, larger than had been seen on Earth since the Carboniferous period, a quarter of a billion years ago.

It was coming toward camp. Something about it--its wings?--made a whining buzz -

It approached the tall poles with the smelly rags, hesitated, turned away. Mr. Qu'an looked thoughtfully after it, glanced at Hans.

"They're not swarming," Hans stated positively. "Anyhow, that was a male."

"Mmm... No doubt you're right. Still—double guard the rest of the night, down the roster. Tenderfeet makee-learnie only." He lay down.

The troop started back the next morning—"Morning" by clock; Charlie, awakening stiff and sleepy to the same dull-bright, changeless sky, felt as if he had napped too long but not well during an afternoon. They headed back the way they had come. Once on the cleared road, Hans left Charlie and looked up the Scoutmaster. He was back shortly, grinning. "Stay over night with me? You and Nixie?"

"Gee! Is it okay? Your folks won't mind?"

"They like company. You can ride in with Paw in the morning."

"It 'ould be swell, Hans... but how about my folks? Uh, do you suppose Jock could raise 'em on the portable?"

"Everything's okay. Mr. Qu'an will phone 'em when the troop gets in... and you can call them soon as we get to my place. If they holler, I can still catch you up with the troop."

So it was settled. When they got to the little side road for the Kuppenheimer plantation Mr. Qu'an ordered them to head for the house and no monkey business. They solemnly agreed and left the troop.

The side road was a dark tunnel; Hans hurried them through it. A few hundred yards farther on they came out into cultivated fields and Hans slowed down. "That's the only bad stretch. You okay?"

"Sure."

"Let's check Nixie."

If anything had attached itself to Nixie, they could not find it and his wagging tail gave no sign of distress; they went on. Charlie looked around with interest. "What are you cropping?"

"Jungle bread on the right. Once it's established you don't have to worry about it, smothers anything else,

mostly. Other side is mutated -bananas. They take more care."

Shortly they came to the house, on a rise and with no growth around it—a typical Venus settler's house, long and low and built of spongy logs and native bamboo. Hans' mother greeted Charlie as if he were a neighbor boy, seen daily, and she petted Nixie. "He minds me of a hound I had in Hamburg." Then she set out banana cake and mugs of coffee that were mostly milk. Nixie had his cake on the floor.

There were several kids around, younger than Hans and looking like him. Charlie did not get them straight, as they talked even less than Hans did and hung back from Nixie—unlike their mother, they found him utterly strange. But presently, seeing how the monster behaved with Hans and with their mother, they timidly patted him. After that, Nixie was the center of attention while they continued shyly to ignore Charlie.

Hans bolted his cake, hurried out. He was back a few minutes later. "Maw, where's the flamer?"

"Paw is using it."

Hans looked blank. "Well... we don't have to have it. Come on, Chuck." He carried two hefty machetes, a blade in each hand; he handed one to Charlie.

"Okay." Charlie stood up. "Thanks, Mrs. Kuppenheimer—thanks a lot."

"Call me 'Maw.'"

"Hurry up, Charlie."

"Right. Say—how about that call to my folks?"

"I forgot! Maw, would you phone Mrs. Vaughn? Tell her Chuck is staying all night?"

"Yes, surely. What's your frequency, Charlie?"

"Uh, you have to call city exchange and ask them to relay."

"Jawohl. You boys run along."

They headed off through the fields. Nixie was allowed to run, which he did with glee, returning every thirty seconds or so to see that his charges had not fainted nor been kidnapped in his absence.

"Where are we going, Hans?"

Hans' eyes brightened. "To see the prettiest plantation land on Venus!"

"It's mighty pretty, no doubt about it."

—"Not Paw's land. I mean my plantation."

"Yours?"

"Will be mine. Paw posted an option bond. When I'm old enough, I'll prove it." He hurried on.

Shortly Charlie realized that he was lost even though they were in a cultivated grove. "Hold it, Hans! Can I borrow your polarizer?"

"What for?"

"I want to establish base, that's what. I'm all mixed up.",

"Base is that direction," Hans answered, pointing with his machete. "My polarizer is at the house. We don't need it."

"I just thought I ought to keep straight."

"Look, Chuck, I can't get lost around here; I was born on this piece."

"But I wasn't."

"Keep your eyes open; you'll learn the landmarks. We're heading that way—" Hans pointed again. "—for that big tree." Charlie looked, saw several big trees. "We cut over a ridge. Pretty soon we come to my land. Okay?"

"I guess so."

"I won't let you get lost. Look, I'll show you the bush way to establish base—polarizers are for townies." He looked around, his quick eyes picking up and discarding details. "There's one." -

"One what?"

"Compass bug. Right there. Don't scare him. Back, Nixie!"

Charlie looked, discovered a small, beetle-like creature with striped wing casings. Hans went on, "When they fly, they take right off toward the Sun. Every time, -Then they level off and

head home—they live in nests." Hans slapped the ground beside the little creature; it took off as if jet propelled. "So the Sun is that way. What time is it?"

"Ten thirty, about."

"So where is base?"

Charlie thought about it. "Must be about there."

"Isn't that the way I pointed? Now find another compass bug. Always one around, if you look."

Charlie found one—frightened it, watched it take off in the same direction as the first. "You. know, Hans," he said slowly, "bees do something like that—fly by polarized light, I mean. That's the way they get back to their hives on cloudy days. I read about it."

"Bees? Those Earth bugs that make sugar?"

"Yes. But they aren't bugs."

"Okay," Hans answered indifferently. "I'll never see one. Let's get moving."

Presently they left cultivation, started into bush. Hans required Nixie to heel. Even though they were going uphill, the bush got thicker, became dense jungle. Hans led the way, occasionally chopping an obstacle.

He stopped. "Trash!" he said bitterly.

"Trouble?"

"This is why I wanted the flamer. This bit grows pretty solid."

"Can't we chop it?"

"Take all day with a bush knife; need heat on it. Going to have to poison this whole stretch 'fore I get a road through from Paw's place to mine."

"What do we do?"

"Go around, what else?" He headed left. Charlie could not see that Hans was following any track, decided he

must know his way by the contour of the ground. About half an hour later Hans paused and whispered, "Keep quiet. Make Nixie keep quiet." -

"What for?" Charlie whispered back.

"Good chance you'll see kteela, if we don't scare them." He went noiselessly ahead, with the other boy and the dog on his heels. He stopped. "There."

Charlie oozed forward, looked over Hans' shoulder—found that he was looking down at a stream. He heard a splash on his right, turned his head just in time to see spreading ripples. "Did you see him?" asked Hans in a normal voice.

"Shucks, he was right there. A big one. Their houses are just downstream. They often fish along here. Have to keep your eyes open, Chuck." Hans looked thoughtful. "Kteela are people."

"Huh?"

"They're people. Paw thinks so. If we could just get acquainted with them, we could prove it. But they're timid. Come on—we cross here." Hans descended the bank, sat down on muddy sand by running water and started taking his shoes off. "Mind where you sit."

Charlie did the same. Bare-footed and bare-legged, Hans picked up Nixie. "I'll lead. This stretch is shallow

—keep moving and don't stumble."

The water was warm and the bottom felt mucky, Charlie was glad when they reached the far side. "Get the leeches off," Hans commanded as he put Nixie down. Charlie looked down at his legs, was amazed to find half a dozen purple blobs, large as hens' eggs, clinging to him. Hans cleaned his own legs, helped Charlie make sure that he was free of the parasites. "Run your fingers between your toes. Try to get the sand fleas off as you put on your boots, too—though they don't really matter."

"Anything else in that water?" Charlie asked, much subdued.

"Oh, glass fish can bite a chunk out of you... but they aren't poisonous. Kteela keep this stream cleaned up. Let's go."

They went up the far side, reached a stretch that was higher and fairly dry. Charlie thought that they were probably going upstream, he could not be sure.

Hans stopped suddenly. "Dragonfly. Hear it?"

Charlie listened, heard the high, motor-like hum he had heard the night before. "There it is," Hans said quickly. "Hang onto Nixie and be ready to beat it off. I'm going to attract its attention."

Charlie felt that attracting its attention was in a class with teasing a rattlesnake, but it was too late to object; Hans was waving his arms.

The fly hesitated, veered, headed straight for him. Charlie felt a moment of dreadful anticipation—then saw Hans take one swipe with his machete. The humming stopped; the thing flattered to the ground.

Hans was grinning. The dragonfly jerked in reflex, but it was dead, the head neatly chopped off. "Didn't waste a bit," Hans said proudly.

"Huh?"

"That's lunch. Cut some of that oil weed behind you." Hans squatted down. In three quick slices he cut off the stinger and the wings; what was left was the size of a medium lobster. Using the chrome-sharp machete as delicately as a surgeon's knife, he split the underside of the exoskeleton, gently and neatly stripped out the gut. He started to throw it away, then paused and stared at it thoughtfully. -

Charlie had been watching in queasy fascination. "Trouble?"

"Egg sac is full. They're going to swarm."

"That's bad, isn't it?"

"Some. They swarm every three, four years." Hans' hesitated. "We'd better skip seeing my land. Got to tell Paw, so they'll keep the kids in."

"Okay, let's get started."

"We'll eat lunch first. Ten minutes won't matter—they aren't really swarming yet, or this one wouldn't have been alone." -

Charlie started to say that he wasn't interested in lunch—not this lunch—but Hans was already starting a fire. -

What was left in the exoskeleton was clean milkywhite meat, lean flying muscle. Hans cut out chunks, toasted them over the fire, salted them from a pocket shaker. "Have some."

"Uh, I'm not hungry."

"You're crazy in the head, too. Here, Nixie." Nixie had been waiting politely but with his nose quivering. He snapped the tidbit out of the air, gulped it down, waited still more eagerly while

Hans ate the next piece.

It did smell good... and it looked good, when he kept his mind off the source. Charlie's mouth began to water. Hans looked up. "Change your mind?"

"Uh... let me taste just a bite."

It reminded Charlie of crab meat. A few minutes later the exoskeleton was stripped too clean to interest even Nixie. Charlie stood up, burped gently, and said, "Ready?"

"Yeah. Uh, Chuck, one thing I do want to show you... and there's a way back above it maybe quicker than the way we came."

"What is it?"

"You'll see." Hans headed off in a new direction. Charlie wondered how Hans had picked it without the aid of a compass bug.

In a few minutes they were going downhill. Hans stopped. "Hear it?"

Charlie listened, seemed to pick out a soft roar under the ever-present multiple voice of the jungle. "It's not a dragonfly?"

"Of course not. You've got ears."

"What is it?" Hans did not reply, led on. Presently they broke into a clearing, or rather a room, for the

jungle closed in overhead. It enclosed a delightful, surprising waterfall; the muted roar was its song.

"Isn't that swell?" -

"It sure is," Charlie agreed. "I haven't seen anything so pretty in years."

"Sure, it's pretty. But that's not the point. My land is just above. I'll put a water wheel here and have my own power." Hans led his two friends down near it, began to talk excitedly about his plans. The noise of falling water was so great that he had to shout.

So neither one of them heard it. Charlie heard Nixie bark, turned his head and saw it at the last moment. "Hans! Dragon!"

Too late—the thing nailed Hans between his shoulder blades. It laid no eggs; Charlie killed it, crushed it with his hands. But Hans had already been stung.

Charlie wiped his trembling hands on his pants and looked down at his chum. Hans had collapsed even as Charlie had killed the thing; he lay crumpled on the ground. Charlie bent over him. "Hans! Hans, answer me!"

Hans' eyelids fluttered. "Get Paw."

"Hans... can you stand up?"

"Sorry... Cbuck"—then very feebly, "My fault." His eyes stayed open, but Charlie could get no more out of him. -

Even in his distress Charlie's training stayed with him. He could not find Hans' pulse, so he listened for his heart... was rewarded and greatly relieved by a steady, strong flub-a-dub!... flub-a-dub! Hans looked ghastly—but apparently it was true that they just paralyzed; they didn't kill.

But what to do?

Hans had said to get his father. Sure—but how? Could he find his way to the house? Even if he could, could he lead them back here? No, he wouldn't have to—surely Mr. Kuppenheimer would know where the waterfall was that Hans meant to harness. So what he had to do was simply get back. Now let's see; they had come down the bank there—and after they had crossed the stream—it must be this same stream; they hadn't gone over any watershed. Or had they?

Well, it had better be the same stream, else he was lost beyond hope. Back through the bush, then and across the stream—How was he going to cut back in and hit the stream at the place where it could be forded? The bush all looked pretty much alike.

Maybe he had better go downstream along the bank until he hit it. Then cross, and if he could find a compass bug, he could strike off in the general direction of the Kuppenheimers until he came to civilization. He remembered which way base was when they had first started out; that would orient him.

Or would it? They had gone first to that place that couldn't be passed without a flamer—but where had they gone then? How many turns? Which way were they heading when they reached the place where he had not quite seen a kteela?

Well, he would just have to try. At least he could get onto the same side of the stream as the plantation.

Nixie had been sniffing at Hans' still body. Now he began to whine steadily. "Shut up, you!" Charlie snapped. "I don't want any trouble out of you, too."

Nixie shut up.

Charlie decided that he couldn't leave Hans; he would have to take him with him. He kneeled down and started wrestling Hans' limp body into a fireman's carry, while wondering miserably whether or not Hans had told his mother where they were going? Or if it would do any good if he had, since they were not where Hans had originally intended to take them.

"Heel, Nixie."

An indefinitely long time later Charlie put Hans down on the ground in a fairly open place. It had taken only a

few minutes of struggle to convince him that he could not carry Hans along the bank of the stream. A man might have been able to carve his way through with a machete—but while Charlie had two machetes he could not swing them and carry Hans as well. After giving that route up, he abandoned one machete by the waterfall, thinking that Hans could find it there some other day. He was tempted to abandon both, for the one on his belt was heavy and got in his way, but he decided that he might have to have it; they had done plenty of chopping in getting here.

So he set out again, this time trying to retrace their steps through the bush, hoping to spot the places they had chopped to help him find his way.

He never spotted such a sign; the living green maze swallowed all such puny marks.

After a long time he decided to go back to the familiar waterfall—he would stay there, nurse Hans, filter water for them all, and wait. Surely Mr. Kuppenheimer would eventually think of the waterfall!

So he turned back... and could not find the waterfall. Not even the stream.

He walked through something. He couldn't see it, there were branches in his face. Whatever it was it clung to his legs like red-hot wires; he stumbled and almost dropped Hans getting free of it. Then his leg did not stop paining him. The fiery burning dropped off a little but a numbness crept up his right leg.

He was glad indeed to put Hans on the ground at the first fairly open place he came to. He sat down and rubbed his leg, then checked Hans—still breathing, heart still beating... but out like a light.

Nixie sniffed Hans again, then looked up and whined inquiringly. "I can't help it," Charlie said to him. "He's a mess. I'm a mess. You're a mess, too."

Nixie barked.

"I will, I will... just as soon as I can move. Don't hurry me. How would you like to carry him for a while?"

Charlie continued to rub his leg. The pain was going away but the numbness was worse. At last he said to Nixie, "I guess we ought to try it, pal. Wait a second while I look for a compass bug—the way I figure it, we came mostly base, so I guess we ought to try to head reverse." He glanced at his wrist to see what time it was.

His watch had stopped.

But it couldn't stop—it was self-winding.

Nevertheless it had. Perhaps he had banged it in the bush, perhaps... no matter, it had stopped. He looked for Hans' watch, thinking that its twenty-four-hour face was easier to use as a compass dial anyhow.

But Hans was not wearing his watch, nor was it in any of his pockets. Whether he had left it at the house, along with his polarizer and duffel bag, or whether it had dropped off while Charlie was carrying him, did not matter. They had no watch between them and Charlie did not know what time it was, not even approximately. It seemed to him that he had been carrying Hans, fighting this dreary bush, for a week.

So a compass bug couldn't tell him anything.

He almost felt defeated at that moment. But he rallied, telling himself that if he went downhill he was bound to find that stream... then he would either find the ford or the waterfall, one or the other. He hauled himself around into position to lift Hans, favoring his right leg.

He need not have bothered; his right leg was not working.

The "pins and needles" in it were almost unbearable, as if he had sat much too long in a cramped position. But they would not go away as they always had in the past; nothing he could do would make that leg obey his orders.

- He lowered his head against Hans and bawled.

He became aware that Nixie was licking his face and whining. He stopped his useless blubbering and raised his head. "It's all right, fellow. Don't you worry."

But it wasn't all right. While Charlie was no jungle rat,

he did know that search parties could comb the area for weeks- and not - find them, could pass within feet of the spot and never see them. Possibly no human being had ever been where they were now; possibly no human would reach this spot in many years to come.

If he didn't use his head now, they would never get out- Nixie sat patiently, watching him, trusting him. "Nixie, this is up to you now, boy. You understand me?"

Nixie whined. "Go back to the house. Fetch! Fetch Maw. Fetch anybody. Right now! Go back to the house."

Nixie barked.

"Don't argue with me. You've got to do it. Gohom Go back and fetch somebody!"

Nixie looked dubious, trotted a few steps in the direction in which they had come, stopped and looked around inquiringly. "That's right! Keep going! Go back to the house! Fetch somebody! Go!"

Nixie looked sharply at him, then trotted away in businesslike fashion.

Sometime later Charlie raised his head and shook it. Gosh! he must have gone to sleep... couldn't do that.

What if another dragonfly came along... have I stay awake. Was Hans all right? Have to pick him up and get out of here... where was Nixie? "Nixie!"

No answer. That was the last straw. But he'd have to get moving anyhow- His leg wouldn't work... felt funny. "Nixie! Nixie!"

Mrs. Kuppenheimer heard the scratching and whining at the door, wiped her hands on her apron and went to open it. When she saw what was there she threw her hands up. "Lieber Gott! What happened to you?" She knelt swiftly, picked up the little dog and put him on her clean table, bent over him, talking to him and picking leeches from him, wiping away blood. "Schrecklich!"

"What happened to him, Mama?"

"I don't know." She went on working. But Nixie jumped out of her arms, charged straight for the closed door, tried to crash his way out—unsuccessful, he leaped and clawed at it and howled. -

Mrs. Kuppenheimer gathered him up and held his struggling body against her breast. "Gerta! Get Paw!"

"What's the matter with him, Mama?"

"Something dreadful has happened. Run!"

The Borealis council hall was filled with Scouts and older people. Hans and Charlie were seated in the front row, with Nixie on a chair between them. Hans had crutches across one knee; Charlie had a cane. Mr. Qu'an came down the aisle, saw them, and sat down as Charlie moved Nixie over to share his seat. The Scoutmaster said to Hans, "I thought you were off those things?" His glance touched the crutches.

"I am—but Maw made me bring them."

"I—" Mr. Qu'an stopped. An older man had just taken his place at a table in the front of the hall at which were seated half a dozen others.

"Quiet, please." The man waited a moment. "This Court of Honor is met in special session for awards. It is our first duty tonight—and proud pleasure—to award a life-saving medal. Will Tenderfoot Scout Nixie Vaughn please come forward?"

"Now, Nixie!" Charlie whispered.

Nixie jumped off the chair, trotted forward, sat at attention and saluted, trembling.