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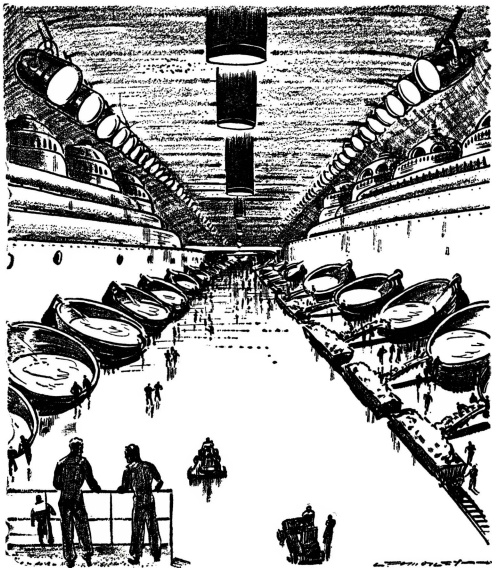
An excursion to the borderline of scientific knowledge—and beyond!

Cover by Stephen Lawrence, illustrating "Taa the Terrible"
Inside illustrations by Dolgov, Lawrence, Morey and Paul.

Our Director Meets Trouble

A Novelette

By John E. Harry



Listen to the sad saga of Our Director—whose business it was to grow food in water—and whose biggest problem was to keep from drowning himself in the hydroponics tanks!

CHAPTER ONE

We Feed the World!

JIM PERRY, general director of Hydroponics Station No. 23 for some two years, kicked his heels happily against his desk blotter and leaned back

until the springs on his chair creaked. Jim Perry was very, very happy. Two years of his directorship had seen the station climb to second place in production and efficiency. While those who knew were inclined to split the credit for the feat with his secretary, that fact bothered Mr. Perry not at all. The heads of the Hydroponics Service, in Chicago, were not numbered among those who knew. They had sent him a tidy little recognition in the form of a just-received administrative promotion in salary from ten to twelve thousand credits a year.

Jim Perry fished a flattened cigarette pack from his shirt pocket and dug deep, searching for a fag to put the ultimate period to his sense of well-being. Then his face fell.

As usual, the pack was empty.

"Gertrude!" bellowed Jim Perry. "Gertrude! Where in hell are you?"

THE doorway to the outer office opened, and Gertrude, Perry's trim, efficient secretary, looked in. "What's the matter now?" she asked coldly. "Got the D.T.'s again?"

"Young lady," growled Perry, "please remember that I am your superior and address me accordingly. I may be forced yet to take stern measures with you."

"Such as putting me in the nitrate mines?"

"Such as some such thing!"

"Ha!" said Gertrude nastily. "Just try. Just try to get along without me! See how long you'd hang on to that two thousand credit boost in pay. Why, you'd be out as director so fast—"

"Woman!" roared Perry in a terrible voice. "Did you come in here to start a debating society? And on government time to boot!"

"What was it you called me in here for?" asked Gertrude. "I heard you bellowing like a wounded elephant and came running in to save you from some terrible

fate. And look what I get for my devotion! What *did* you want, anyway?"

"My cigarettes are all gone," said Perry accusingly.

"So what? You don't think I took them, do you?"

"I wouldn't be surprised," Perry told her. "As punishment you can scam up to the canteen and get me another pack."

"My dear sir," said Gertrude frostily, "do you think I'm an errand boy? I'm extremely busy—"

"What, did the manicurist drop in this morning?" snarled Perry.

"—very busy this morning," Gertrude went on, ignoring him. "If you want to keep that extra two thousand a year, you'd better let me keep working. After all, at least one person in this office should keep busy if we want to keep growing plants here. Go up to the canteen yourself. You're usually there anyway during working hours."

"Merely to make sure none of the section directors are killing Government time," Perry assured her hastily. "However, what you say does have some sense—particularly the part about your getting back to work. To your grindstone, me proud beauty!"

As the door closed behind the girl, Perry picked up the intraphone on his desk and dialed Charlie Hammond, director of the Section of Solutions. After a moment's talking he put down the phone and headed out through Gertrude's door to the corridor. As he passed her desk, heaped high with forms she was working on, she gave him a baleful stare.

"And I suppose you're disappearing for the rest of the morning?"

"Nothing of the sort. I have an important conference," Perry hedged, from the doorway to the corridor. "Charlie Hammond and I have some burning questions to discuss."

"Burning thirsts, you mean," said Gertrude, scowling. "I suppose this—con-

ference—will take place in the canteen?"

"Well—heh, heh—yes," admitted Perry. "We had hoped to toss a couple down the hatch betimes. During the pauses in conversation, as it were." The door slammed behind him as he ducked out into the corridor.

Gertrude clucked despondently. "What's the use!" she exclaimed to herself. Shoving the stacks of forms aside, she reached down into one of the drawers of her desk and pulled out the latest issue of a romantic magazine. Leaning back in her chair, she began to read, happily oblivious of the forms that waited reproachfully for her attention.

ONCE UPON a time, two years back, Jim Perry himself had occupied Charlie Hammond's job, that of director of the Section of Solutions. Although for a time it had appeared that he might remain right there, and Charlie remain as his assistant, a lucky break with a congressionally-appointed general director (who'd tried to wash out growing tanks with a lye solution!) had raised him to the unbearable eminence of general director himself, while Charlie took over his old job. Now, after two years, Perry had almost forgotten that he'd ever held a job as degrading as mere Section Director—practically manual labor—and took a keen delight in all Charlie's troubles, which were numerous.

As everyone knows, the job of Solutions-Section director in a modern hydroponics station is wearing under the best of conditions. Under adverse conditions it can become a nightmare. That fact is implicit in the setup of the Hydroponics Stations themselves.

The stations were made possible, of course, by the discovery, shortly before 2000 A.D., of a uranium isotope (U-235) which, through atomic power, made possible low-cost power to provide light needed by growing plants. The first indoor

growth of plants on a commercial scale in nutrient solutions (about 2000 A.D.) proved to be such a huge success that within a hundred years no more plant food was grown on soil, as had been the custom previously.

The vast areas of the North American Union were deserted by farmers, and given over to intensive use by grazing cattle watched and guarded by the hard-bitten "pioneers," men who lived outside the cities. Concentration of growing facilities in the hydroponics stations made possible a population of almost ten billion people in North America alone. And when the Federated Unions of South America, Europe, Africa, and Eastern and Western Asia followed the North American Union's example in food growing, their populations also increased proportionally. Now the world held more people than would have been dreamed possible a few centuries before—and they were all well cared for. But the pressure of population meant that no breakdown of the highly developed, complicated civilization could be allowed. Even a momentary interruption of production would mean hardship for millions.

Since the time the first station was set up, the Section of Solutions carried the heaviest load of responsibility for proper growth of the plants. Now, in 2321, the responsibility was greater than it had ever been, for the newly developed, high-producing strains of plants now grown were much more cranky than the older, less efficient growers, and required a solution that was little less than exactly perfect.

CHARLIE was gloomy again, Perry found when he stepped from the escalator on the hundred fifty-third—recreation—level and breezed into the canteen. Charlie stood disconsolately by the stainless-steel bar, a foaming tankard only half drained before him. He looked as if at any moment he might begin to

weep dolefully into the glass of beer. "Heigh-ho, heigh-ho!" Perry sang out cheerfully. "What ails thee, lad? Methinks thou hast an evil expression on thy puss."

"Evil isn't the word," growled Charlie. "I'm a bad guy to drink with today, J.C." Since Perry's promotion to general director, Charlie had taken to calling him by his initials. Perry hated it. "The world looks black and gloomy."

"It's going to look a lot blacker if you don't stop calling me J. C.," warned Perry. "There's no sunlight in the nitrate mines. . . . Petey!" he yelled to the barman. "Haven't you learned yet to draw me one and put a head on it as soon as I come through that door? Now, Charlie my lad, what's bothering you most?"

"It's my assistant, as usual," growled Charlie. "Fred Stirling, his name is. You know him, don't you?"

"Stirling," said Perry meditatively. "Yes, I think so. What's the matter with him?"

"What isn't the matter!" snorted Charlie. "He couldn't figure the osmotic pressure of a solution of bath salts! Honest to Pete, it burns me up the way they've requisitioned all the good men from me for other stations. In the past two years I've had six assistants—six of them!—and all good men until Stirling came along. They requisitioned them away from me at a dizzy clip and gave them high-pay jobs—all but Stirling. Will they ever requisition him? No! I've had him for eight months now, and it looks as if he'd stay forever."

"Whyn't you fire him, then?"

"Can't," gloomed Charlie. "He's a hydroponics career man, and in my ignorance I recommended him for the job myself. So now I haven't the right to discharge him."

"Assistants," muttered Perry to himself. "Always inefficient. I had a terrible one once, name of Hammond. Charlie

Hammond. He's a section director now, in some station. God help them!"

Not to be swerved from his grievance, Charlie kept right on. "Suppose I tell Stirling there's something I want done. Does he do it? Oh, after a fashion—the fashion of a child of ten. I've got to check all his work, to make sure it's properly done. I might as well do it myself in the first place. Can I take a little annual leave and go on a vacation like a normal section director? Not me. If I did, I'd likely come back to find the solutions are Scotch and soda! Discouraging."

"Oh, I don't know," said Perry, toying with the idea.

"That's not all. I always hoped that when I got to be section director I could do like you—let my assistant do all the work while I wallowed in ease and alcohol. What happens? I'm doing as much work as I ever did. More, by golly—I haven't even got Gertrude to help me any more. I tell you it's tough, J. C."

Perry's eyes sparkled. "Initials again, hey? Suppose I give you an easier job—digging nitrate, for example? Back to work, you parasite, before I forget myself and give you a boot in the snoot!"

CHAPTER TWO

Headquarters Cracks Down

THOUGH Jim Perry didn't realize it, he himself was soon to join Charlie in the depths of woe. In fact, even as he was turning bottoms up with a flourish in the canteen, Gertrude was laying on his desk a letter, just received by facsimile beam from Chicago, that was packed with gray hairs for him. All unconscious of the dire things that awaited him, Perry pushed open the door of the office with a large smile, the innocent foam scarcely dry on his upper lip.

"Any urgent business lately, Gertrude?" he beamed.

"A letter, on your desk," she told him. "It came just after you went to the . . . conference."

When Perry picked it off his desk, he glanced at it idly and then put it down again, its full import not striking him. Then a thrill of horror went through him. He picked it up again and gave it an agonized glance.

"Gertrude!" he bellowed. "Gertrude! Did you put this here?"

Gertrude, who knew him well enough to expect this reaction, came in from the outer office.

"Who else?" she inquired in an acid tone. Then, to herself, "Typical male reaction. No control over himself at all. Disgusting!" Perry didn't even reply, and that alarmed her. When he failed to return an insult, she knew the matter was very, very serious.

"Oh, it can't be as bad as that!" she said fearfully.

"Get me Charlie Hammond!" said Perry. "Get me Davis! Get me Yates! Get me Carter! Get me all the section directors or their assistants! And hurry up!"

As Gertrude ducked out to her office again, Perry sat down with the letter, searching it for a hint that the whole thing was a grisly joke thought up by some big shot in the National Office at Chicago. He found none. It was in deadly earnest.

The letter was headed, "*New Type of Experimental Oat to be Put Into Production*", and his dazed eyes went from that innocent-looking heading to the body of the letter itself. This tricky, experimental plant, minus growth data and exact solution formulas, was to be tried out here—at Station 23! He'd have to shift fully half his production to this oat—which had to be grown in the dark!

And worst of all, he had just three days to get the whole unhappy mess into full production. If any of the kinks in the thing caused a lost crop-

Perry groaned hollowly. "Gertrude!" he wailed. "Gertrude! Come here with the remedy!" After two years of smooth sailing, Jim Perry saw breakers ahead. Large, ominous ones—and directly on his course!

GERTRUDE had contacted only Charlie Hammond and Yates, director of the Section of Development, when Jim Perry sent out his SOS for the "remedy"—the bottle of Scotch she kept in her desk for just such an emergency. Those two, therefore, were the first to get to Perry's office, a few minutes later, and without a word Perry handed the letter to Yates to read.

Yates, a dapper, correct little man, read it aloud in a mincing tone, his eyebrows raised superciliously.

" . . . Department of Pathology report which states that this vitamin is essential to sound bone and tooth structure . . . extremely elusive . . . but has at last been isolated. The richest natural sources are the cereal grains . . . umph, umph . . . and particularly oats. Experimental work at the Central Laboratories here in Chicago has developed a new strain of oats . . . high in this vitamin . . . if proper growth conditions are maintained. These conditions . . . umph, umph . . . temperature . . . umph . . . and, most important retardation of normal chlorophyll development . . . umph . . . requiring . . . absence of light during the first week of growth . . . restricted light thereafter. Solution . . . giving optimum growth and vitamin production has not yet been . . . entirely perfected . . . used here consists of dipotassium phosphate, three milligrams per liter; ammonium sulphate, umph milligrams per liter; potassium chloride, umph, umph; ammonium sulphate, umph; potassium nitrate, umph; and an unbalanced solution of trace elements consisting of ferrous citrate, man-ganous sulphate, borax, copper sulphate,

and zinc sulphate in the following proportions . . . Triangulation not worked out, but should not be too difficult. Since your station has achieved the highest rate of improvement during the past two years, it has been decided to try cultures on a commercial scale first there . . . half your tanks will be devoted to this purpose and it is sincerely hoped that you can report that the necessary changes have been made and slips set some time within the next three days. Yours very truly . . ."

Yates glanced up. "This should be a highly interesting piece of work," he commented.

Perry moaned. "Interesting, he says! Interesting! Ye gods!"

"An unbalanced solution of trace elements," Charlie quoted bitterly. "Triangulation not worked out—but should not be difficult! Should not be difficult! Damn you, Yates, I wish I had just half your optimism."

Yates smiled precisely. "Oh, come, it isn't so bad. Here's a chance for you to distinguish yourself with a neat piece of solution work."

"Chance to get kicked out on my tail, you mean!" snarled Charlie. "Triangulation not worked out yet! No wonder they didn't work it out! With that unbalanced ratio of trace elements, the trig formulas won't work. It can't be done mathematically. In other words, we can work out the best ratio of elements by cut-and-try. A couple of thousand different solutions to make up and test—and we've got to have the proper formula worked out, ready for the seedlings, inside of three days! Those lice—shoving a half-baked experimental job off on us like this, and telling us to get it into commercial production inside of three days!"

"It's a stinker," agreed Perry. "And if anything goes wrong, of course, they'll accept no excuses. They judge by results, and this is going to be a bad, bad job to get results on! Half our production to be

switched to a new, untried crop, on three days' notice, and a question of produce—or else."

He shook his head. "Wonder what's the big rush on this thing."

"I THINK I know," said Yates in his dainty way. "There's been a five million credit grant voted by Congress recently for study of this new vitamin and its effects. Tharovin, it's been named. No doubt the foundation set up for the study has requisitioned a large amount of tharovin-bearing plants for quick delivery from the Hydroponics Service, and this order is the result. Most likely, several of the top-ranking stations will be put to producing such plants in the near future."

Perry nodded. "We produce it, or else."

"There's been a good deal of basic work done on the vitamin all over the country in the past few months. Even my Section had a crack at it." Yates smiled deprecatingly. "It's thought now that it holds the secret of dental caries—tooth decay, that is—and all sorts of bone disorders, as well as having some obscure effect on the brain tissues. Recent advances in medical science have done away with nearly all contagious diseases; and now investigators are beginning to believe that tharovin deficiency is at the bottom of most hospital cases that are being received—except accidents, of course."

"Deficiency of this vitamin has been recorded, unknowingly, of course, in even ancient literature. In the Middle Ages, before the formation of the Federated Union, we know, poultry developed cannibalism through tharovin deficiency. That was before the year 2000, when there were still independent farmers in the Plains; and it had been observed that feeding sprouted oats to poultry prevented them from developing cannibalism. The sprouted oats, low in chlorophyll, were apparently comparatively high in tharovin even

then, although the plants used for growth in soil in those days were extremely inefficient. Brewer's grains, which contained sprouted barley, had the same effect, though they weren't quite so efficient. Barley probably didn't carry as much tharvin as sprouted oats. So, almost four hundred years ago, the existence of tharvin was indicated by a method of controlling cannibalism in poultry—"

Charlie had been wrinkling his forehead, bored by the lecture. "Cannibalism?" he interrupted. "What's that?"

"The poultry pecked each other to death," Yates snapped. "Don't tell me you've never heard of cannibalism before."

"I've heard of cannibals," said Charlie, turning to look at Gertrude, who had just come in from her office. "They used to eat people." He eyed the secretary's luscious figure appraisingly. "Yum!"

"Beast!" said Gertrude. Then, to Perry, "The other two directors were working in the tank levels when I called their offices. They're on their way up now."

As Gertrude started out again, she smiled meltingly at Charlie. "Don't think I'm really annoyed," she confided. "Really, I like my men virile."

"Oh, boy!" grinned Charlie, getting up to chase her.

"Down, pup!" barked Perry. "If anybody gets virile around Gertrude it'll be me. I don't have any intention of letting the best secretary in the station get married out from under my nose."

Gertrude had paused in the doorway. "Best one, hah?" she inquired. "Then how about recommending me for a raise in pay?"

"Trapped!" ejaculated Perry hoarsely. "It just goes to show, a man can never win!"

DAVIS, the Director of the Section of Illumination, was inclined to take the letter lightly at first, since at first glance it didn't seem to affect his

section to any great degree. But Carter, of Plant Care, set up a howl even louder than Charlie's.

"Half our tanks?" he bellowed. "In oats? Half of them! By Godfrey, it can't be done, not in three days! Not half our tanks!"



Jim Perry tapped the letter on his desk. "It's got to be done."

"It can't be done, I tell you! Those tanks are full to the brim with immature food plants."

"Tear 'em out."

"Tear 'em out?" wept Carter. That was heresy! Tear out his beautiful plants—before maturity? "We can't! What about our commitments to the retail outlets?"

Perry actually smiled. "That's the only joyful tidings this letter bore. Any commitments we can't meet will be prorated to the other stations in this Region. The Regional Office is to work out the exact amounts."

"Don't make me tear out those immature plants," begged Carter. "Give me a

week to empty the tanks—then I can do it properly, taking only matured crops. Be reasonable! Only a week.”

Perry felt sympathetic, but there was nothing he could do. “The letter says three days.”

“It’s only a suggestion.”

“Hah!” snorted Perry. “Don’t you know what’d happen to us if we ignored that *suggestion*? The seedlings must be placed in the tanks within three days. You’d better arrange to have the seeds pricked into the sprouting flats yet this afternoon—if they’ve come. They were to be flown out, and should be here by now.”

“All right,” Carter said dully, a broken man. He would literally have given a year’s salary to be allowed enough time to clear the tanks in an orderly fashion, without waste, taking only mature crops. He was a methodical man, and it hurt him to do business in this haphazard, inefficient way.

He got to his feet. “I’ll arrange for it now, and work out the best possible manner of clearing the tanks. Some of them will be empty for fifty hours, you know.”

“I know,” said Perry, realizing how unhappy it would make any Plant Care man to have perhaps ten or twenty percent of production capacity lying idle for two full days. “Nothing we can do about it, though. I’m sorry.” Perry turned to Davis, an evil gleam in his eye.

“You thought you were out of it, didn’t you, Davis? Get set for a shock. You’ve got to develop switchboards to enable you to switch off every individual set of radiators in the station. It’s got to be done within three days.”

“What?” screamed Davis. “That’s an impossibility, man!”

Perry showed his teeth in a vicious grin. “I agree with you. But the National Office in Chicago doesn’t. Tell it to them. They don’t realize it.”

“But, man—there are a hundred and thirty-one tank levels, with a thousand tanks on each level, and a set of ultra-violet radiators for each tank. A hundred and thirty-one thousand of them!” He closed his eyes to visualize the maze of conduits and wiring carrying juice to all those radiators, and 131,000 separate switches to be properly connected into that maze. A shudder of horror ran through him.

“It can’t be done!” he cried, his eyes wild. “Not in three days!”

Perry tapped the letter. “It’s got to be done. The letter says this crop needs darkness for the first week, and after that only enough light to enable it to manufacture food for growing.” He paused. “After the first week you’ll need rheostats in the circuits, too, for dimming the radiators.”

Davis was a broken man too. “I’ve only got two hundred men in my section,” he muttered. “Two hundred men to put in 131,000 switches in three days, and 131,000 rheostats in the following week.” His eyes staring, he got to his feet and tottered to the door. Perry turned to look at Charlie Hammond, the sole remaining occupant of the room.

Even Charlie’s eyes had begun to glaze as he realized the enormity of what had to be done.

“Gertrude!” yelled Perry. “Gertrude! Bring the remedy, right away! If we act quickly enough, this one, at least, can be saved!”

CHAPTER THREE

“Trouble, Step Right In!”

DURING the next three days Jim Perry thought that things were as bad as they could get, but as usual he was overly optimistic. Davis, who was getting little sleep, kept weeping on his shoulder, to the effect that two

hundred men absolutely couldn't connect 131,000 switches in three days. Carter, who got even less sleep, could do nothing save moan about the murder being done to his immature plants, and the level after endless level of tanks standing idle after they'd been cleared.

Charlie Hammond, who apparently got no sleep at all, didn't even make his usual trips to the canteen, by which sign Perry knew that his case was the most serious of all. The fourth day, however, things got worse, for Trouble dropped in, in person—and in more ways than one.

Gertrude announced it. "A man here to see you," she said. "An inspector out of the Regional Office."

Perry, whose own eyes had become red-rimmed from lack of sleep by this time, groaned inwardly.

"What next?" he growled. "All right, show him in."

The newcomer was a heavy-set man with a stubborn, antagonistic face and apparently possessed of the typical check-up man's unpleasant mentality. He leered at Perry happily as he came in.

"Some li'l houri you got working out there, brother. What's her name?" Then, as Perry scowled, he hurriedly added, "I'm checking up on the experimental oat crop you've been ordered to put in production."

Perry stared at him coldly, with all the aversion of the producer for the political check-up man. Under his stare, the newcomer's eyes dropped.

"Uh—my credentials," he said, offering his papers. "My name's George Trouble."

"George Trouble?"

"That's right, brother."

"Umm," said Perry, stifling a desire to grin.

"You got the oats in the growing tanks yet?"

"The seedlings were placed last night," Perry told him. "Within three days, as

instructed. Half the tanks now contain this crop, also as instructed. And, finally, the ultra-violet radiators are dead over the tanks containing oats. *Precisely* as instructed. Anything else?"

"Solutions worked out properly?"

"Four thousand, three hundred and fifty-eight separate solutions were made up and checked for proper osmotic pressure, triangulation, and balance of elements. By the way, just what *was* the idea of that unbalanced solution of trace elements?"

"Don't ask me," said Trouble. "I'm no expert on solution chemistry. I'll have to make an actual physical check to see that conditions are as good as you say they are."

"Fine. I'll have one of the men show you around."

"You can show me around yourself," said Trouble truculently. "And things had better be right, or you'll do a lot of explaining."

Things were right, as Perry knew from the reports of his section directors. The oats seedlings were in the square, flat quarter-acre oak tanks, their rootlets already reaching out hungrily into the richly nutritious water that surrounded them; the overhead ultra-violet radiators were dark; an actual count by Trouble showed some hundred-fifteen-thousand odd tanks, scattered through every level, devoted to the new crop.

The count itself took twelve long hours, and Perry, who'd been getting little sleep as it was, was dead on his feet by the time Trouble had finished. But the inspector insisted that no one else could answer his questions properly. When at last they finished, Perry turned to the Regional Office man.

"I hope that's all," he said bitterly. "If not, feel free to call my apartment any time. Just wake me up from a sound sleep any time there's something you want to know."

"Don't worry; I will," promised Trouble.

As Perry dragged himself to the nearest escalator, he had one grain of hope to sustain him. To himself he murmured, "But now, *nothing* else can happen to me."

He did not see the figure of Fate, who must have been standing somewhere near, leering at him. For he was wrong again.

THE really bad news came the following day, when Charlie Hammond came dragging into Perry's office in the afternoon. Since their day-and-night work to get the proper solution formula worked out inside of three days, almost all the Solutions Section men had taken time off to catch up on their sleep. No exception, Charlie was showing his face for the first time in two days. One look at that face told Perry that all was not well with the Solutions Section.

"What is it, man?" he gasped. "Another inspector?"

"Worse than that," muttered Charlie, lowering himself into a chair like one who is suddenly very, very old.

"Worse? How could it be?"

"It's Stirling," said Charlie. "My assistant."

Perry closed his eyes tight and waited numbly for the blow. It came.

"We worked out the solution, you know, by trial and error; the trig formulas for figuring the proper ratios wouldn't work because of that unbalanced solution of trace elements. After we ran off over four thousand tests, we picked the optimum formula. Stirling hadn't been helping us. I didn't think his mental equipment was up to the strain of what we had to do. When we finally got the thing worked out, though, I gave Stirling the formula and told him to do the actual solution mixing."

His voice broke. "You wouldn't think he could mess *that* up, would you?"

"For heaven's sake, man, don't keep me in suspense. What did he do?"

"The fool saw that the trace-element solution was unbalanced, so without asking anybody about it, he balanced that first. Everybody else was asleep," Charlie admitted honestly. "We'd all been working day and night, except Stirling—" "Give!" thundered Perry. "What then?"

"Well, balancing the trace element solution threw the nutrient elements out of *their* ionization balance. So Stirling simply applied the trig formulas and balanced them up that way. In the end, he had a perfectly normal nutrient solution. You can find a dozen like it in any textbook on five-salt solutions. Nothing at all like the deliberately different solution the laboratories recommend for maximum vitamin development."

"Oh—oh!" muttered Perry. "Well, it's been nice knowing you, Charlie. Next time we meet we'll probably both be in the nitrate mines, and Stirling will have your job—or mine. Stirling!" he muttered, his brow darkening. Then he brightened. "Maybe we can still change the solution."

"You know better than that!" protested Charlie. "At this stage of their development, experimental plants are always as delicate as babies. A sudden change in food would throw their whole digestive system out of order. Don't forget, they've been on this solution for some fifty hours by now."

"Yes, of course," admitted Perry. "Well, I guess there's nothing for it but to raise 'em in that solution. Vitamin production will be cut, and we'll probably get a red-hot kickback on it. But after all, it's our first crop. As long as we get even fair vitamin production, they'll have to give us another chance."

"That Stirling!" muttered Charlie. "If only I hadn't recommended him for the job myself! He'd've been down in the nitrate mines so long ago—"

"Charlie, my boy," said Perry, "what you and I need is a little foam clinging lovingly to our upper lips."

TROUBLE did not spot anything specifically wrong but like all investigative officers he spent his time criticizing minor points of procedure and noting them on the endless reports that he had to be filling out almost constantly.

The result was that Gertrude got called in more frequently with the remedy. And Charlie took to dropping in for a consolatory dram or two.

It was such a convivial moment that was rudely interrupted by Trouble himself, a couple of days later. Fortunately, he did not come directly into Perry's office. They heard his rough voice as he talked to Gertrude.

Suddenly there was the unmistakable, pistol-sharp sound of a slap, well-delivered, and Gertrude's chilly voice. "Keep your hands in your pocket, you flea-bitten Lothario!" Charlie snickered and went to the door to see what was going on.

Gertrude's back was straight and uncompromising as she sat by her desk in the outer office, and one of Trouble's red

cheeks held the whitened outline of an undoubtedly Gertrude-sized hand.

Although the tableau spoke for itself, Charlie could not resist asking, "What gives?"

"This—this Neanderthaler tried to kiss me."

"And you slapped him? Tut-tut, Gertrude, I thought you liked 'em virile."

"Men, yes," said Gertrude haughtily. "Gorillas—no!"

Charlie started to snicker again, but his eyes crossed Trouble's.

"You laugh, do you?" said the investigator, shaking one stubby forefinger at him. "Think it's funny, do you? Well, see if you can laugh at what I came to tell you. Your assistant just burned out the switchboard controlling the ultra-violet radiators, and none of them can be turned off any more. Right now every radiator is burning full strength, even over your tanks of oats. In another hour there won't be a milligram of tharovin in the whole station. Laugh *that* off, hyena!"

Turning, he stalked out furiously. Charlie didn't even have to turn around to know that Jim Perry was already reaching blindly for the bottle in his desk.

CHAPTER FOUR

Chlorophyll, I Love You!

"A THOUSAND man days!" roared Davis. "A thousand man days of work on those switches and rheostats, and he burns them out in half a second! He ought to be shot!"

"There, there," soothed Perry, who agreed with him. "We couldn't shoot him, dammit. He'll be fined, of course."

Davis subsided, still rumbling like a volcano trying to work up courage to erupt. Perry tapped his fingernails with a pencil.

"We'll have to get those lights turned off. Every second they burn, more chlorophyll develops and we lose more tharovin. You'll have to pull the master-switch, Davis, and black out the whole station while you work at getting that switchboard patched up again."

"What?" screamed the harried Davis; but his voice was drowned out by Carter's agonized bellow.

"Not by a damn' sight! You'll kill all my other plants if you do that!"

"It'll only be for a couple of days," argued Perry, "while Davis gets another switchboard built."

"A few days will be too long! Some of those tanks are only one and two days from maturity now. They need every second's illumination if they're to mature properly."

"We've got to do something right away," muttered Perry, wondering if his hair wasn't turning white. "Damn that Stirling anyway! What the hell was he doing at the switchboard in the first place?"

"The first week's growth was ended," explained Davis, "and it was time to start giving the plants restricted illumination. Of course, Stirling wouldn't put in a chit to the Section of Illumination, like a nor-

mal man. He had to do it himself. Where there were individual tanks of oats scattered here and there on a level, he pulled the double throw switch over to the rheostat all right. But some levels had nothing but oats in their tanks, and he couldn't be bothered to pull a thousand switches individually. He tried to hook the whole lot together in parallel by tying a piece of haywire to the back of the board, on the proper terminals—he thought. Well, he's no electrician. He hooked one lead on the wrong terminal, and blew out the whole board and the master fuse. Half the contacts were fused beyond repair, on the board. We replaced the fuse and shunted the switchboard out of the circuit. That way there's no short, and we can feed juice to the radiators; but the switches aren't in the circuit any more, so we can't cut out the individual radiators as we did before. They're all on—or they're all off."

Charlie came in through the door, his face mournful. One hand held some stalks of oats, immature yet, just beginning to head out. They were green—such a bright, poisonous green that they hurt the eye.

"Chlorophyll!" groaned Perry. "Well, I guess it's too late to do anything at all now. Did you have them analyzed for content?"

"With that color I don't need to have them analyzed," said Charlie grimly. "They're so full of chlorophyll that their root volume more than doubled during the past two hours."

"Storing food manufactured in the leaves," explained Carter, of Plant Care, to no one in particular. He was professionally interested. "That's an almost unbelievably high rate of food manufacture. Chlorophyll content must be higher than that of any plant known to science now."

Perry held his head. "The lab said that vitamin content varied inversely with chlorophyll development. By that, we must have a tharovin content that's a

minus quantity—if not less than that!"

The door opened again, this time to admit Trouble, who was followed by the dapper Yates, Director of the Development Section, and another man, portly and important-looking, whom Perry didn't know.

Trouble's face was ominously gloating. "I think you can guess what I'll be reporting on this fizzle," he told Perry.

Perry bent his head, indicated a spot at the back of his neck. "Hit right here," he said. "Get out your axe and don't keep me in suspense."

Yates coughed delicately. "Er—Mr. Perry."

It was so unusual for any of his Section Directors to use formality with him that Perry looked up in astonishment. "Yes?"

"I thought I'd better introduce Mr. Downey. He's from the Central Laboratory at Chicago. The work done on tharovin there was his personal responsibility. He tells me he flew out to Station 23 to see how the crop was coming along."

"Er—yes," said the portly man. "How do you do, Mr. Perry?"

"Badly," said Perry, looking him over. So it was this fellow who would wield the axe, instead of Trouble! "You know, don't you, that our tharovin yield will be nil?"

Trouble looked triumphant, but Yates and Downey both smiled.

"It doesn't really matter any more," Yates told him in his precise way. "Mr. Downey tells me that he received word en route that his technicians have succeeded in synthesizing tharovin. The synthesized product is not only cheaper, but actually purer than that made from plants. High-tharovin oats have proved to be a still-born product."

This seemed altogether too good to be true. "You mean—" gasped Perry—"you mean that it doesn't make any difference about our failure to get a yield of tharovin from this crop?"

Downey was smiling even more broadly than Yates. "That's right, Mr. Perry. Nor is that all. I've had quite a talk with Mr. Yates, and he's been telling me that you overcame almost insuperable obstacles to get the crop into commercial production within the time limit set by the National Office. Personally, I wouldn't have believed that what you did could have been done inside of three weeks, let alone three days."

Perry almost blushed. "Well, thanks," he said, leering at Trouble.

"I fully intend to give you the strongest kind of recommendation for your devotion to orders," said Downey. "I shall state in my report how resourcefully you met your problems and overcame them, getting a tricky experimental crop into commercial production inside of the time limit set by Chicago—a limit which, I may add, they probably didn't expect you to keep to. In the future, your station will almost unquestionably be picked as the best-fitted to work out any new experimental crops on a commercial basis in a hurry!"

"Awk!" croaked Perry. He wasn't at all happy about that; the thought of going through another nightmare like the last two weeks turned him cold with horror. A glance at Trouble's angry face, however, made him feel better.

"That's very kind of you, Mr. Downey," he said, and almost meant it.

GERTRUDE came in from the outer office just then. In one hand she held a letter, evidently just plucked from the facsimile recorder, and her face was a study. She handed the letter to Perry and fled again, not waiting for the explosion that she was sure would come. Perry read it, the smile frozen on his face. Slowly he sank back into his chair.

"Read this," he said, handing the letter to Charlie. "Read it."

Charlie read. "It will be necessary to have all tanks switched back to produc-

tion of normal food crops. We urgently request you to have this production change made within twelve hours—"

"It can't be done!" cried Carter wildly.

"It's got to be done," Perry told him coldly. He flapped his hand for silence. "Go on," he told Charlie.

"War has broken out between the city people and the herders. The plainsmen have begun systematically slaughtering the vast herds of cattle in their care . . . at least partial starvation faces the city people . . . storage stocks below normal . . . production cut through sabotage in many stations. Production must be stepped up . . ."

"War!" said Davis blankly. "Why—why—that's unheard of! There haven't been any wars for over a hundred years!"

"Nothing could justify—" began Carter, but he was interrupted by Downey.

"Let me see that letter, will you, please?"

When he had it, he read it over slowly, nodding his head. "Well, it's come, then," he said sadly. "People will starve before it's over. I'll have to leave for Chicago again immediately. No doubt there'll be attempts to synthesize food enough to carry us through, and I'll be needed."

"It should be an interesting problem," said Yates. "Certainly there's a solution."

"Of course such synthesis can be done, even now," Downey replied. "As you know, Mr. Yates, the barriers are cost and the extreme slowness of the process. It is a slow, laborious job requiring many technicians—too many, I'm afraid."

"That's molecular synthesis, you mean, done chemically?" When Downey nodded, Yates went on, "Why not use artificial chlorophyll cultures—let them build the carbohydrate molecules you need? A chlorophyll culture could replace a technician, be on duty twenty-four hours a day and never get tired."

Downey smiled. "Out of the frying pan, my boy. The necessary chlorophyll would

be more difficult to synthesize than the starches and sugars themselves."

"Natural chlorophyll?"

"Almost as bad. It's difficult to extract it from plants in large enough quantities. The trouble is, there aren't any plants that are high enough in chlorophyll to make extraction pay."

Perry, who had been listening dumbly, gulped twice before he could speak. "Wait a minute. Do you mean that the only bar to synthesized carbohydrates is lack of a high-chlorophyll plant? Is that what you mean?" Slowly, unbelievably, his hand went out to his desk-top, where lay a small bunch of wilted oat plants, their brilliant green a vivid splash of color against the neutral gray of the desk. He touched them gently.

"If chlorophyll is all you need, gentlemen," he said dramatically, "it's here!"

PERRY HARDLY dared believe it was true, but there was no question that he was a Big Man because of the development of the high-chlorophyll oat. The fact that he had nothing at all to do with that development made absolutely no difference, it seemed.

Downey wrote letters about it, and reports. A whole corps of experimental technicians descended on the station.

After them came the newsmen for the facsimile-papers and the news-broadcast services. They interviewed Perry and popped flash bulbs at him until he finally wished he'd never as much as heard of chlorophyll.

In desperation, he finally gave all credit for the development to Stirling.

"Yeah," he answered their excited questions a bit bitterly, "it was Stirling who was really at the bottom of the whole thing. And how! The oats were originally intended for vitamin production, you know. After the Solutions Section men had worked out the proper solution for optimum vitamin production, Stirling

worked out another one—to give the highest chlorophyll production.”

Only to himself did he add, “And no tharovin at all!”

None of the newsmen even heard his last sentence; they all tore off in search of this new source of copy. Perry leaned back in his chair, mercifully alone at last.

“Gertrude!” he shouted. “Tell Charlie Hammond to come over and we’ll have a couple of quick ones before anybody else comes barging in.”

TROUBLE found them guzzling there some minutes later, but Jim Perry didn’t even bother to look guilty. He was a Big Man now.

“What can I do for you, my man?” he asked pontifically. He suddenly felt almost affectionate toward the check-up man. Trouble’s scowl, he thought to himself, was becoming an astringent necessity to his well-being, like salt—or alcohol. “Want a nice sample of chlorophyll?”

“Look here,” growled Trouble, “why didn’t you tell me this man Stirling was the one who did the work on that chlorophyll solution?”

“Why didn’t you ask me?” Perry said blithely. “Have a little snort?”

“I don’t drink during working hours,” the other said austerely. “You’d be wiser if you didn’t either. About Stirling—”

“What’s it to you?” said Perry, nettled.

“Just this. My job carries an appropriation for an assistant’s salary. That position has been vacant for some time.”

“No wonder,” muttered Perry.

“I wanted a good solution man as my assistant, so that he could take samples of the tanks when I do check-up work in a station, and test them to see if the proper solution is being used.” He scowled accusingly. “The right one wasn’t used here.”

“And look where it got me,” grinned Perry.

“Well. When I took on a solutions man,

I wanted the best. At first I thought of requisitioning your Solutions Section director.”

“Who, me?” cried the startled Charlie. “Save me, boss!”

“Apparently, however, Stirling is the real brains of the Solutions Section here, while Hammond spends his time tipping with you. I can see why you tried to keep me from realizing this—you were afraid I’d take Stirling away from you. Well, brother, your scheme has fallen through. I intend to put in a requisition immediately for Stirling’s transfer, making him my assistant!”

“I won’t initial it!” cried Perry. Then, deciding he was laying it on a bit too thick, he backtracked. “I’ll let him go if you give him personal recommendation.”

“Then I can’t send him back. Why that?”

“That’ll show you really need him for the job. Otherwise you might be hiring him just to spite me, and later fire him again. The recommendation will keep you from doing that. Of course, if you aren’t sure you really want him—”

“I’m sure, all right,” declared Trouble. “You won’t trick me out of getting him. Just so you don’t change your mind, I’ll have your secretary type out the transfer slips and my personal recommendation right now.” He went out to Gertrude’s office, clicking the door shut behind him.

“This, my boy,” declared Perry solemnly, “requires pledging in the waters of Scotland.” He poured out a couple of generous measures, and they raised their glasses in a wordless toast.

As he was about to drink it, however, the clattering of Gertrude’s typewriter, in the outer office, was interrupted by the unmistakable, pistol-sharp sound of a slap and Gertrude’s icy voice.

“I told you once to keep your hands at home, you big baboon!”

“Thou art forgiven,” he told Charlie generously. “My cup runneth over!”