In the Cage

Mrs. Frisby said: "But why did they want to catch you? And how did you ever get away again?"

"At first," said Nicodemus, "I thought it must be because they didn't like our stealing the food. And yet you could hardly even call it stealing—it was waste food, and all they did with it was haul it away to the city incinerator. So what harm if we ate some of it? Of course, there are people who just dislike rats, whether they're doing any harm or not."

"And mice, too," said Mrs. Frisby.

"True," said Nicodemus. "Though not so much as rats, I think. Anyway, that wasn't the reason at all; but

what the real reason was, I didn't find out for a while. As to getting away—that, too, didn't happen until much later."

No, I was firmly and inextricably caught, snared in the net and helpless (Nicodemus continued). When the man who held it saw that he had four rats, he pulled a draw string that closed it up. He put the net down and picked up another, an empty one. He moved on into the square, leaving us to lie there. I tried gnawing my way out, but the strands were made of some kind of plastic, as hard as wire.

The noise and movement began to die down eventually; I supposed the rats in the square had all either been caught or had escaped. I heard one man call to another: "I guess that's the lot." Someone else was turning a light this way and that, searching the rest of the market area.

"Not a one to be seen."

"We could hide and wait for another wave."

"There won't be another wave. Not tonight. Probably not for four or five nights."

"Word gets around."

"You mean they communicate?" A third voice.

"You bet they communicate. And the next time they do come, you can be sure they'll case the place carefully. We were lucky. These rats hadn't been bothered for years. They'd grown careless."

"How many did the lab order?" Someone was turning out the lights one at a time.

"Five dozen. How many have we got?"

"About that. Maybe more."

"Let's load the truck."

In a minute or so I felt myself being lifted up; and swinging back and forth in the net, I was carried with my three companions to the white truck I had seen earlier. Its back doors were open, and it was lighted inside. I could see that its whole interior was a large wire cage. Into this our net was thrust; the man then opened the draw string and we were dumped onto the floor, which was covered with sawdust. The other nets were emptied one at a time the same way; and in a few minutes there was a good-sized crowd of us on the floor, all more or less dazed and all (if I was typical) terrified. The cage was locked, the doors clanged shut, and the lights went out. I heard the truck motor start; a second later the floor lurched beneath me. We were moving. Where were they taking us? For what purpose?

Then, in the dark, I heard a voice beside me.

"Nicodemus?" It was Jenner. You can imagine how glad I was to hear him. But I was sorry, too.

"Jenner. I thought maybe you got away."

"I was in the last net. I thought I saw you across the floor."

"Where are we going?"

"I don't know."

"What's a lab?"

"A laboratory."

"Yes, but what is it?"

"I don't know. I've just heard the word somewhere."

"Well, I think that's where we're going. Whatever it is."

The truck rumbled along through the dark, over bumpy streets at first, then, at a higher speed, over a smooth highway. There were no windows in the back,

so it was impossible to see where we were going—not that I would have known anyway, never before having been more than half a dozen blocks from home. I think we drove for about two hours, but it might have been less, before the truck slowed, and turned, and finally came to a stop.

The back doors were opened again, and through the wire wall of the cage I saw that we had come to a building, very modern, of white cement and glass. It was square and big, about ten stories tall. Night had fallen, and most of its windows were dark, but the platform to which our truck drove us was lighted, and there were people waiting for us.

A door opened, and three men came out. One of them pushed a cart, a hand truck piled with small wire cages. The man beside him was dressed in a heavy coat, boots, and thick leather gloves. The third man wore heavy horn-rimmed glasses and a white coat. He was obviously the leader.

The men from the truck, the ones who had caught us, now joined the men from the building.

"How many did you get?" asked the man in the white coat.

"Hard to count—they keep moving around. But I make it between sixty and seventy."

"Good. Any trouble?"

"No. It was easy. They acted almost tame."

"I hope not. I've got enough tame ones."

"Oh, they're lively enough. And they look healthy."

"Let's get them out."

The man with the gloves and the boots then donned a wire face-mask as well, and climbed in among us. He

opened a small sliding trapdoor at the back of our cage; a man outside held one of the small cages up to the opening, and one at a time we were pushed out into our individual little prisons. A few of the rats snarled and tried to bite; I did not, and neither did Jenner; it was too obviously futile. When it was finished, the man in the white coat said, "Sixty-three—good work." A man from the truck said, "Thanks, Dr. Schultz." And we were racked on the hand truck and wheeled into the building.

Dr. Schultz. I did not know it then, but I was to be his prisoner (and his pupil) for the next three years.

We spent the rest of that night in a long white room. It was, in fact, a laboratory, with a lot of equipment at one end that I didn't understand at all then—bottles and shiny metal things and black boxes with wires trailing from them. But our end held only rows of cages on shelves, each cage with a tag on it, and each separated from its neighbors by wooden partitions on both sides. Someone came around with a stack of small jars and fastened one to my cage; a little pipe led through the bars like a sipping straw—drinking water. Then the lights were dimmed and we were left alone.

That cage was my home for a long time. It was not uncomfortable; it had a floor of some kind of plastic, medium soft and warm to the touch; with wire walls and ceiling, it was airy enough. Yet just the fact that it was a cage made it horrible. I, who had always run where I wanted, could go three hops forward, three hops back again, and that was all. But worse was the dreadful feeling—I know we all had it—that we were completely at the mercy of someone we knew not at

all, for some purpose we could not guess. What were their plans for us?

As it turned out, the uncertainty itself was the worst suffering we had to undergo. We were treated well enough, except for some very small, very quick flashes of pain, which were part of our training. And we were always well fed, though the food, scientifically compiled pellets, was not what you'd call delicious.

But of course we didn't know that when we arrived, and I doubt that any of us got much sleep that first night. I know I didn't. So, in a way, it was a relief when early the next morning the lights snapped on and Dr. Schultz entered. There were two other people with him, a young man and a young woman. Like him, they were dressed in white laboratory coats. He was talking to them as they entered the room and walked toward our cages.

". . . three groups. Twenty for training on injection series A, twenty on series B. That will leave twenty-three for the control group. They get no injections at all—except, to keep the test exactly even, we will prick them with a plain needle. Let's call the groups A, B, and C for control; tag them and number them A-1 through A-20, B-1 through B-20, and so on. Number the cages the same way, and keep each rat in the same cage throughout. Diet will be the same for all."

"When do we start the injections?"

"As soon as we're through with the tagging. We'll do that now. George, you number the tags and the cages. Julie, you tie them on. I'll hold."

So the young woman's name was Julie; the young man was George. They all put gloves on, long, tough

plastic ones that came to their elbows. One by one we were taken from our cages, held gently but firmly by Dr. Schultz while Julie fastened around each of our necks a narrow ribbon of yellow plastic bearing a number. I learned eventually that mine was number A-10.

They were kind, especially Julie. I remember that when one rat was being tagged, she looked at it and said, "Poor little thing, he's frightened. Look how he's trembling."

"What kind of biologist are you?" said Dr. Schultz. "The 'poor little thing' is a she, not a he."

When my turn came, the door of my cage slid open just enough for Dr. Schultz to put his gloved hand through. I cowered to the back of the cage, which was just what he expected me to do; one hand pressed me flat against the wire wall; then his fingers gripped my shoulders. The other hand held my head just behind the ears, and I was powerless. I was lifted from the cage and felt the plastic collar clipped around my neck. I was back inside with the door closed in less than a minute. The collar was not tight, but by no amount of tugging, twisting or shaking was I ever able to get it off.

I watched through the wire front of my cage as the others were caught and tagged. About six cages down from me, on the same shelf, I saw them put a collar on Jenner; but once he was back in his cage, I could see him no longer.

A little later in the morning they came around again, this time pushing a table on wheels. It was loaded with a bottle of some clear liquid, a long rack of sharp needles, and a plunger. Once more I was lifted from the cage. This time George did the holding while Dr.

Schultz fastened one of the needles to the plunger. I felt a sharp pain in my hip; then it was over. We all got used to that, for from then on we got injections at least twice a week. What they were injecting and why, I did not know. Yet for twenty of us those injections were to change our whole lives.

The Maze

During the days that followed, our lives fell into a pattern, and the reason for our captivity gradually became clear. Dr. Schultz was a neurologist—that is, an expert on brains, nerves, intelligence, and how people learn things. He hoped, by experimenting on us, to find out whether certain injections could help us to learn more and faster. The two younger people working with him, George and Julie, were graduate students in biology.

"Watch always," he told them, "for signs of improvement, faster learning, quicker reaction in group A as compared to group B, and both as compared to the

control group."

My own training began on the day after the first injections. It was George who did it; I suppose Julie and Dr. Schultz were doing the same test on other rats. He took my cage from the shelf and carried it to another room, similar to the first one but with more equipment in it, and no shelves of cages. He placed the cage in a slot against a wall, slid open the end, opened a matching door in the wall—and I was free.

Or so I thought. The small doorway in the wall led into a short corridor, which opened, or seemed to, dirictly onto a green lawn. I could see it clearly, and behind it some bushes, and behind them a street—all outdoors, and nothing but air between me and them. Furthermore, I could smell the fresh outdoor breeze blowing in. Were they letting me go?

I made a dash toward the open end of the corridor—and then jumped back. I could not go on. About two feet from my cage (still open behind me) there was something dreadfully wrong with the floor. When I touched my feet to it, a terrible, prickling feeling came over my skin, my muscles cramped, my eyes blurred and I got instantly dizzy. I never got used to that feeling—no one ever does—but I did experience it many times, and eventually learned what it was: electric shock. It is not exactly a pain, but it is unbearable.

Yet I was in a frenzy to reach that open lawn, to run for the bushes, to get away from the cage. I tried again—and jumped back again. No use. Then I saw, leading off to the left, another corridor. I had not noticed it at first because I had been looking so eagerly at the open end of the one I was in. The second one seemed to stop

about five feet away in a blank wall. Yet there was light there: it must turn a corner. I ran down it, cautiously, not trusting the floor. At the end it turned right—and there was the lawn again, another opening. I got closer that time; then, just as I thought I was going to make it —another shock. I pulled back and saw that there was still another corridor, leading off to the right. Again I ran, again I saw the open escape hole, and again I was stopped by shock. This was repeated over and over; yet each time I seemed to get a little closer to freedom.

But when finally I reached it and the grass was only a step away, a wire wall snapped down in front of me, another behind me; the ceiling opened above me and a gloved hand reached in and picked me up.

A voice said: "Four minutes, thirty-seven seconds."

It was George.

I had, after all my running through the corridors, emerged into a trap only a few feet from where I had started, and through a concealed opening up above, George had been watching everything I did.

I had been in what is called a maze, a device to test intelligence and memory. I was put in it many times again, and so were the others. The second time I got through it a little faster, because I remembered—to some extent—which corridors had electric floors and which did not. The third time I was still faster; and after each trial George (or sometimes Julie, sometimes Dr. Schultz) would write down how long it took. You might ask: Why would I bother to run through it at all, if I knew it was only a trick? The answer is I couldn't help it. When you've lived in a cage, you can't bear *not* to run, even if what you're running toward is an illusion.

There were more injections, and other kinds of tests, and some of these were more important than the maze, because the maze was designed only to find out how quickly we could learn, while some of the others actually taught us things—or at least led up to actual teaching.

One was what Dr. Schultz called "shape recognition." We would be put into a small room with three doors leading out—one round, one square, and one triangular. These doors were on hinges, with springs that held them shut, but they were easy to push open, and each door led into another room with three more doors like the first one. But the trick was this: If you went through the wrong door, the room you entered had an electric floor, and you got a shock. So you had to learn: In the first room, you used the round door; second room, triangle, and so on.

All of these activities helped to pass the time, and the weeks went by quickly, but they did not lessen our longing to get away. I wished for my old home in the storm sewer; I wished I could see my mother and father, and run with my brother to the marketplace. I know all the others felt the same way; yet it seemed a hopeless thing. Still there was one rat who decided to try it anyway.

He was a young rat, probably the youngest of all that had been caught, and by chance he was in the cage next to mine; I might mention that like Jenner and me, he was in the group Dr. Schultz called A. His name was Justin.

It was late one night that I heard him calling to me, speaking softly, around the wooden partition between

our cages. Those partitions generally kept all of us from getting to know each other as well as we might have done, and discouraged us from talking much to one another; it was quite hard to hear around them, and of course you could never see the one you were talking to. I think Dr. Schultz had purposely had them made of some soundproof material. But you *could* hear, if you and your neighbor got in the corners of the cages nearest each other and spoke out through the wire front.

"Nicodemus?"

"Yes?" I went over to the corner.

"How long have we been here?"

"You mean since the beginning? Since we were caught?"

"Yes."

"I don't know. Several months—I think, but I have no way to keep track."

"I know. I don't either. Do you suppose it's winter outside now?"

"Probably. Or late fall."

"It will be cold."

"But not in here."

"No. But I'm going to try to get out."

"Get out? But how? Your cage is shut."

"Tomorrow we get injections, so they'll open it. When they do, I'm going to run."

"Run where?"

"I don't know. At least I'll get a look around. There might be some way out. What can I lose?"

"You might get hurt."

"I don't think so. Anyway *they* won't hurt me."

By they he meant Dr. Schultz and the other two. He

added confidently:

"All those shots, all the time they've spent—we're too valuable to them now. They'll be careful."

That idea had not occurred to me before, but when I thought about it, I decided he was right. Dr. Schultz, Julie and George had spent most of their working hours with us for months; they could not afford to let any harm come to us. On the other hand, neither could they afford to allow any of us to escape.

Justin made his attempt the next morning. And it did cause a certain amount of excitement, but not at all what we expected. It was Julie who opened Justin's cage with a hypodermic in her hand. Justin was out with a mighty leap, hit the floor (about four feet down) with a thump, shook himself and ran, disappearing from my view heading toward the other end of the room.

Julie seemed not at all alarmed. She calmly placed the needle on a shelf, then walked to the door of the laboratory and pushed a button on the wall near it. A red light came on over the door. She picked up a notebook and pencil from a desk near the door and followed Justin out of my sight.

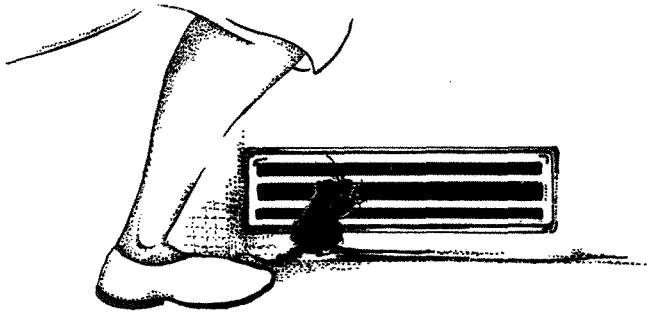
A few minutes later Dr. Schultz and George entered. They opened the door cautiously and closed it behind them. "The outer door is shut, too," said Dr. Schultz. "Where is it?"

"Down here," said Julie, "inspecting the air ducts."

"Really? Which one is it?"

"It's one of the A group, just as you expected. Number nine. I'm keeping notes on it."

Obviously the red light was some kind of a warning signal, both outside the door and in—"laboratory animal



at large." And not only had Dr. Schultz known one of us was out, but he had expected it to happen.

". . . a few days sooner than I thought," he was saying, "but so much the better. Do you realize . . ."

"Look," said Julie. "He's doing the whole baseboard —but he's studying the windows, too. See how he steps back to look up?"

"Of course," said Dr. Schultz. "And at the same time he's watching us, too. Can't you see?"

"He's pretty cool about it," said George.

"Can you imagine one of the lab rats doing that? Or even one of the controls? We've got to try to grasp what we have on our hands. The A group is now three hundred per cent ahead of the control group in learning, and getting smarter all the time. B group is only twenty per cent ahead. It's the new DNA that's doing it. We have a real breakthrough, and since it is DNA, we may very well have a true mutation, a brand new species of rat. But we've got to be careful with it. I think we should go ahead now with the next injection series."

"The steroids?"

(Whatever that meant.)

"Yes. It may slow them up a little—though I doubt it. But even if it does, it will be worth it, because I'm betting it will increase their life span by double at least. Maybe more. Maybe *much* more."

"Look," said Julie, "A-9 has made a discovery. He's found the mice."

George said: "See how he's studying them."

"Probably," said Dr. Schultz wryly, "he's wondering if they're ready for their steroid injections, too. As a matter of fact, I think the G group is. They're doing almost as well as A group."

"Should I get the net and put him back?" George asked.

"I doubt that you'll need it," Dr. Schultz said, "now that he's learned he can't get out."

But they were underestimating Justin. He had learned no such thing.

A Lesson in Reading

Of course, Justin did not escape that day, nor even that year. When they—Julie—put on a glove and went to pick him up, he submitted meekly enough, and in a short time he was back in his cage.

Yet he had learned some things. He had, as Julie noticed, examined the air ducts—the openings along the wall through which warm air flowed in winter, cool air in summer—and he had studied the windows. Mainly he had learned that he could, occasionally at least, jump from his cage and wander around without incurring any anger or injury. All of this, eventually, was important. For it was Justin, along with Jenner, who finally figured

out how to get away. I had a part in it, too. But all that came later.

I won't go into details about the rest of our training except for one part of it that was the most useful of all. But in general, during the months that followed, two things were happening:

First, we were learning more than any rats ever had before, and were becoming more intelligent than any rats had ever been.

The second thing could be considered, from some points of view, even more important—and certainly more astonishing—than the first. Dr. Schultz (you will recall) had said that the new series of injections might increase our life span by double or more. Yet even he was not prepared for what happened. Perhaps it was the odd combination of both types of injections working together—I don't know, and neither did he. But the result was that as far as he could detect, in the A group the aging process seemed to stop almost completely.

For example—during the years we were in the laboratory, most of the rats in the control group grew old and sickly, and finally died; so did those in B group, for though they were getting injections, too, the formula was not the same as ours. But among the twenty of us in A group, no one could see any signs that we were growing older at all. Apparently (though we seldom saw them) the same thing was happening with the G group, the mice who were getting the same injections we were.

Dr. Schultz was greatly excited about this. "The short life span has always been a prime limiting factor in education," he told George and Julie. "If we can double

it, and speed up the learning process at the same time, the possibilities are enormous." Double it! Even now, years later, years after the injections were stopped, we seem scarcely any older than we were then.

We could not detect either of these things ourselves. That is, we didn't *feel* any different, and since we had no contact with the other groups, we had no basis for comparison. All we had to go by was what Dr. Schultz said. He and the others were preparing a research paper about us—to be published in some scientific journal—so each morning he dictated the results of the previous day's tests into a tape recorder. We heard all of it, though there was a lot of technical stuff we couldn't understand, especially at first. Until the paper was published (he kept reminding George and Julie of this) the whole experiment was to be kept secret.

The one important phase of training began one day after weeks of really hard work at the "shape recognition" that I mentioned before. But this was different. For the first time they used sounds along with the shapes, and pictures, real pictures we could recognize. For example, one of the first and simplest of these exercises was a picture, a clear photograph, of a rat. I suppose they felt sure we would know what that was. This picture was shown on a screen, with a light behind it. Then, after I had looked at the picture and recognized it, a shape flashed on the screen under it—a sort of half circle and two straight lines, not like anything I had seen before. Then the voice began:

"Are."

"Are."

"Are."

It was Julie's voice, speaking very clearly, but it had a tinny sound—it was a record. After repeating "are" a dozen times or so, that particular shape disappeared and another one came on the screen, still under the picture of the rat. It was a triangle, with legs on it. And Julie's voice began again:

"Aiee."

"Aiee."

"Aiee."

When that shape disappeared a third one came on the screen. This one was a cross. Julie's voice said:

"Tea."

"Tea."

"Tea."

Then all three shapes appeared at once, and the record said:

"Are."

"Aiee."

"Tea."

"Rat."

You will already have recognized what was going on: they were teaching us to read. The symbols under the picture were the letters R-A-T. But the idea did not become clear to me, nor to any of us, for quite a long time. Because, of course, we didn't know what reading *was*.

Oh, we learned to recognize the shapes easily enough, and when I saw the rat picture I knew straight away what symbols would appear beneath it. In the same way, when the picture showed a cat, I knew the same shapes would appear, except the first one would be a half-circle, and Julie's voice would repeat: "See—see—

see." I even learned that when the photograph showed not one but several rats, a fourth shape would appear under it—a snaky line—and the sound with that one was "ess—ess—ess." But as to what all this was *for*, none of us had any inkling.

It was Jenner who finally figured it out. By this time we had developed a sort of system of communication, a simple enough thing, just passing spoken messages from one cage to the next, like passing notes in school. Justin, who was still next to me, called to me one day:

"Message for Nicodemus from Jenner. He says important."

"All right," I said, "what's the message?"

"Look at the shapes on the wall next to the door. He says to look carefully."

My cage, like Jenner's and those of the rest of A group, was close enough to the door so I could see what he meant: Near the doorway there was a large, square piece of white cardboard fastened to the wall—a sign. It was covered with an assortment of black markings to which I had never paid any attention (though they had been there ever since we arrived).

Now, for the first time, I looked at them carefully, and I grasped what Jenner had discovered.

The top line of black marks on the wall were instantly familiar: R-A-T-S; as soon as I saw them I thought of the picture that went with them; and as soon as I did that I was, for the first time, reading. Because, of course, that's what reading is: using symbols to suggest a picture or an idea. From that time on it gradually became clear to me what all these lessons were for, and once I understood the idea, I was eager to learn more. I could

scarcely wait for the next lesson, and the next. The whole concept of reading was, to me at least, fascinating. I remember how proud I was when, months later, I was able to read and understand that whole sign. I read it hundreds of times, and I'll never forget it:

RATS MAY NOT BE REMOVED FROM THE LABORATORY WITHOUT WRITTEN PERMISSION. And at the bottom, in smaller letters, the word NIMH.

But then a puzzling thing came up, a thing we're still not sure about even now. Apparently Dr. Schultz, who was running the lessons, did not realize how well they were succeeding. He continued the training, with new words and new pictures every day; but the fact is, once we had grasped the idea and learned the different sounds each letter stood for, we leaped way ahead of him. I remember well, during one of the lessons, looking at a picture of a tree. Under it the letters flashed on: T-R-E-E. But in the photograph, though the tree was in the foreground, there was a building in the background, and a sign near it. I scarcely glanced at T-R-E-E, but concentrated instead on reading the sign. It said:

NIMH. PRIVATE PARKING BY PERMIT ONLY. RESERVED FOR DOCTORS AND STAFF. NO VISITOR PARKING. The building behind it, tall and white, looked very much like the building we were in.

I'm sure Dr. Schultz had plans for testing our reading ability. I could even guess, from the words he was teaching us, what the tests were going to be like. For example, he taught us "left," "right," "door," "food,"

"open," and so on. It was not hard to imagine the test: I would be placed in one chamber, my food in another. There would be two doors, and a sign saying: "For food, open door at right." Or something like that. Then if I—if all of us—moved unerringly toward the proper door, he would know we understood the sign.

As I said, I'm sure he planned to do this, but apparently he did not think we were ready for it yet. I think maybe he was even a little afraid to try it; because if he did it too soon, or if for any other reason it did not work, his experiment would be a failure. He wanted to be sure, and his caution was his undoing.

Justin announced one evening around the partition:

"I'm going to get out of my cage tonight and wander around a bit."

"How can you? It's locked."

"Yes. But did you notice, along the bottom edge there's a printed strip?"

I had not noticed it. I should perhaps explain that when Dr. Schultz and the others opened our cages we could never quite see how they did it; they manipulated something under the plastic floor, something we couldn't see.

"What does it say?"

"I've been trying to read it the last three times they brought me back from training. It's very small print. But I think I've finally made it out. It says: To release door, pull knob forward and slide right."

"Knob?"

"Under the floor, about an inch back, there's a metal thing just in front of the shelf. I think that's the knob, and I think I can reach it through the wire. Anyway,

I'm going to try."

"Now?"

"Not until they close up."

"Closing up" was a ritual Dr. Schultz, George and Julie went through each night. For about an hour they sat at their desks, wrote notes in books, filed papers in cabinets, and finally locked the cabinets. Then they checked all the cages, dimmed the lights, locked the doors and went home, leaving us alone in the still laboratory.

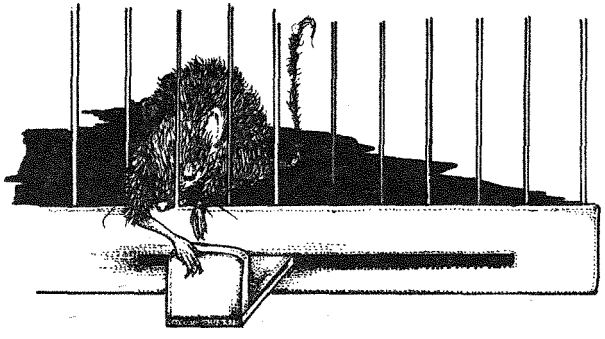
About half an hour after they left that night, Justin said: "I'm going to try now." I heard a scuffling noise, a click and scrape of metal, and in a matter of seconds I saw his door swing open. It was as simple as that—when you could read.

"Wait," I said.

"What's the matter?"

"If you jump down, you won't be able to get back in. Then they'll know."

"I thought of that. I'm not going to jump down. I'm going to climb up the outside of the cage. It's easy. I've climbed up the inside a thousand times. Above these cages there's another shelf, and it's empty. I'm going to



walk along there and see what I can see. I think there's a way to climb to the floor and up again."

"Why don't I go with you?" My door would open the same way as his.

"Better not this time, don't you think? If something goes wrong and I can't get back, they'll say: It's just A-9 again. But if two of us are found outside, they'll take it seriously. They might put new locks on the cages."

He was right, and you can see that already we both had the same idea in mind: that this might be the first step toward escape for all of us.

The Air Ducts

And so it was.

By teaching us how to read, they had taught us how to get away.

Justin climbed easily up the open door of his cage and vanished over the top with a flick of his tail. He came back an hour later, greatly excited and full of information. Yet it was typical of Justin that even excited as he was, he stayed calm, he thought clearly. He climbed down the front of my cage rather than his own, and spoke softly; we both assumed that by now the other rats were asleep.

"Nicodemus? Come on out. I'll show you how." He

directed me as I reached through the wire bars of the door and felt beneath it. I found the small metal knob, slid it forward and sideward, and felt the door swing loose against my shoulder. I followed him up the side of the cage to the shelf above. There we stopped. It was the first time I had met Justin face to face.

He said: "It's better talking here than around that partition."

"Yes. Did you get down?"

"Yes."

"How did you get back up?"

"At the end of this shelf there's a big cabinet—they keep the mouse cages in it. It has wire mesh doors. You can climb up and down them like a ladder."

"Of course," I said. "I remember now." I had seen that cabinet many times when my cage was carried past it. For some reason—perhaps because they were smaller—the mice were kept in cages-within-a-cage.

Justin said: "Nicodemus, I think I've found the way to get out."

"You have! How?"

"At each end of the room there's an opening in the baseboard at the bottom of the wall. Air blows in through one of them and out the other. Each one has a metal grid covering it, and on the grid there's a sign that says: Lift to adjust air flow. I lifted one of them; it hangs on hinges, like a trapdoor. Behind it there is a thing like a metal window—when you slide it wide open, more air blows in.

"But the main thing is, it's easily big enough to walk through and get out."

"But what's on the other side? Where does it lead?"

"On the other side there's a duct, a thing like a square metal pipe built right into the wall. I walked along it, not very far, but I can figure out where it must go. There's bound to be a duct like it leading to every room in the building, and they must all branch off one main central pipe—and that one has to lead, somewhere, to the outside. Because that's where our air comes from. That's why they never open the windows. I don't think those windows *can* open."

He was right, of course. The building had central air conditioning; what we had to do was find the main air shaft and explore it. There would have to be an intake at one end and an outlet at the other. But that was easier said than done, and before it was done there were questions to be answered. What about the rest of the rats? There were twenty of us in the laboratory, and we had to let the others know.

So, one by one, we woke them and showed them how to open their cages. It was an odd assembly that gathered that night, under the dimmed lights in the echoing laboratory, on the shelf where Justin and I had talked. We all knew each other in a way, from the passing of messages over the preceding months; yet except for Jenner and me, none of us had ever really met. We were strangers—though, as you can imagine, it did not take long for us to develop a feeling of comradeship, for we twenty were alone in a strange world. Just how alone and how strange none of us really understood at first; yet in a way we sensed it from the beginning. The group looked to me as leader, probably because it was Justin and I who first set them free, and because Justin was obviously younger than I.

We did not attempt to leave that night, but went together and looked at the metal grid Justin had discovered, and made plans for exploring the air ducts. Jenner was astute at that sort of thing; he could foresee problems.

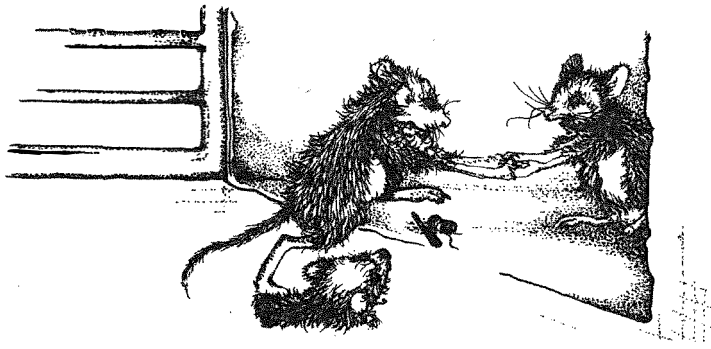
"With a vent like this leading to every room," he said, "it will be easy to get lost. When we explore, we're going to need some way of finding our way back here."

"Why should we come back?" someone asked.

"Because it may take more than one night to find the way out. If it does, whoever is doing the exploring must be back in his cage by morning. Otherwise Dr. Schultz will find out."

Jenner was right. It took us about a week. What we did, after some more discussion, was to find some equipment: first, a large spool of thread in one of the cabinets where some of us had seen Julie place it one day. Second, a screwdriver that was kept on a shelf near the electric equipment—because, as Jenner pointed out, there would probably be a screen over the end of the airshaft to keep out debris, and we might have to pry it loose. What we really needed was a light, for the ducts, at night, were completely dark. But there was none to be had, not even a box of matches. The thread and the screwdriver we hid in the duct, a few feet from the entrance. We could only hope they would not be missed, or that if they were, we wouldn't be suspected.

Justin and two others were chosen as the exploration party (one of the others was Arthur, whom you've met). They had a terrible time at first: Here was a maze to end all mazes; and in the dark they quickly lost their sense of direction. Still they kept at it, night after



night, exploring the network of shafts that laced like a cubical spiderweb through the walls and ceilings of the building. They would tie the end of their thread to the grid in our laboratory and unroll it from the spool as they went. Time and time again they reached the end of the thread and had to come back.

"It just isn't long enough," Justin would complain. "Every time I come to the end, I think: if I could just go ten feet farther . . ."

And finally, that's what he did. On the seventh night, just as the thread ran out, he and the other two reached a shaft that was wider than any they had found before, and it seemed, as they walked along it, to be slanting gently upward. But the spool was empty.

"You wait here," Justin said to the others. "I'm going just a little way farther. Hang on to the spool, and if I call, call back." (They had tied the end of the thread around the spool so they would not lose it in the dark.)

Justin had a hunch. The air coming through the shaft had a fresher smell where they were, and seemed to be blowing harder than in the other shafts. Up ahead he thought he could hear the whir of a machine running

quietly, and there was a faint vibration in the metal under his feet. He went on. The shaft turned upward at a sharp angle—and then, straight ahead, he saw it: a patch of lighter-colored darkness than the pitch black around him, and in the middle of it, three stars twinkling. It was the open sky. Across the opening there was, as Jenner had predicted, a coarse screen of heavy wire.

He ran toward it for a few seconds longer, and then stopped. The sound of the machine had grown suddenly louder, changing from a whir to a roar. It had, obviously, shifted speed; an automatic switch somewhere in the building had turned it from low to high, and the air blowing past Justin came on so hard it made him gasp. He braced his feet against the metal and held on. In a minute, as suddenly as it had roared, the machine returned to a whisper. He looked around and realized he was lucky to have stopped; by the dim light from the sky he could see that he had reached a point where perhaps two dozen air shafts came together like branches into the trunk of a tree. If he had gone a few steps farther he would never have been able to distinguish which shaft was his. He turned in his tracks, and in a few minutes he rejoined his friends.

We had a meeting that night, and Justin told all of us what he had found. He had left the thread, anchored by the screwdriver, to guide us out. Some were for leaving immediately, but it was late, and Jenner and I argued against it. We did not know how long it would take us to break through the screen at the end. If it should take more than an hour or two, daylight would be upon us. We would then be unable to risk returning to the laboratory, and would have to spend the day in

the shaft—or try to get away by broad daylight. Dr. Schultz might even figure out how we had gone and trap us in the air shaft.

Finally, reluctantly, everyone agreed to spend one more day in the laboratory and leave early the next night. But it was a hard decision, with freedom so near and everyone thinking as I did: "Suppose . . ." Suppose Dr. Schultz grew suspicious and put locks on our cages? Suppose someone found our thread and pulled it out? (This was unlikely—the near end, tied to the spool, was six feet up the shaft, well hidden.) Just the same, we were uneasy.

Then, just as we were ending our meeting, a new complication arose. We had been standing in a rough circle on the floor of the laboratory, just outside the two screen doors that enclosed the mice cages. Now, from inside the cabinet, came a voice:

"Nicodemus." It was a clear but plaintive call, the voice of a mouse. We had almost forgotten the mice were there, and I was startled to hear that one of them knew my name. We all grew quiet.

"Who's calling me?" I asked.

"My name is Jonathan," said the voice. "We have been listening to your talk about going out. We would like to go, too, but we cannot open our cages."

As you can imagine, this caused a certain consternation, coming at the last minute. None of us knew much about the mice, except what we had heard Dr. Schultz dictate into his tape recorder. From that, we had learned only that they had been getting the same injections we were getting, and that the treatment had worked about as well on them as on us. They were a sort of side ex-

periment, without a control group.

Justin was studying the cabinet.

"Why not?" he said. "If we can get the doors open."

Someone muttered: "They'll slow us down."

"No," said the mouse Jonathan. "We will not. Only open our cages when you go, and we will make our own way. We won't even stay with you, if you prefer."

"How many are you?" I asked.

"Only eight. And the cabinet doors are easy to open. There's just a simple hook, half way up."

But Justin and Arthur had already figured that out. They climbed up the screen, unhooked the hook, and the doors swung open.

"The cages open the same way as yours," said another mouse, "but we can't reach far enough to unlatch them."

"All right," I said. "Tomorrow night, as soon as Dr. Schultz and the others leave, we'll open your cages, and you can follow the thread with us to get out. After that you're on your own."

"Agreed," said Jonathan, "and thank you."

"And now," I said, "we should all get back to the cages. Justin, please hook the doors again."

I had latched myself into my cage and was getting ready for sleep when I heard a scratching noise on the door, and there was Jenner, climbing down from above.

"Nicodemus," he said, "can I come in?"

"Of course. But it's getting on toward morning."

"I won't stay long." He unlatched the door and entered. "There's something we've got to decide."

"I know," I said. "I've been thinking about it, too."

"When we do get out, where are we going to go?"

I could not see Jenner's face in the dark of the cage, but I knew from his voice that he was worrying. I said:

"At first I thought, home, of course. But then, when I began remembering, I realized that won't work. We could find the way, I suppose, now that we can read. But if we did—what then? We wouldn't find anyone we know."

"And yet," Jenner said, "you know that's not the real point."

"No."

"The real point is this: We don't know where to go because we don't know what we are. Do you want to go back to living in a sewer-pipe? And eating other people's garbage? Because that's what rats do. But the fact is, we aren't rats any more. We're something Dr. Schultz has made. Something new. Dr. Schultz says our intelligence has increased more than one thousand per cent. I suspect he's underestimated; I think we're probably as intelligent as he is—maybe more. We can read, and with a little practice, we'll be able to write, too. I mean to do both. I think we can learn to do anything we want. But where do we do it? Where does a group of civilized rats fit in?"

"I don't know," I said. "We're going to have to find out. It won't be easy. But even so, the first step must be to get out of here. We're lucky to have a chance, but it won't last. We're a jump ahead of Dr. Schultz; if he knew what we know, he wouldn't leave us alone in here another night. And he's sure to find out soon."

"Another thing to worry about," Jenner said. "If we do get away, when he finds we're gone—won't he figure

out how we did it? And won't he realize that we must have learned to read?"

"Probably."

"And then what? What will happen when he announces that there's a group of civilized rats roaming loose—rats that can read, and think, and figure things out?"

I said: "Let's wait until we're free before we worry about that."

But Jenner was right. It was a thing to worry about, and maybe it still is.

The next day was terrible. I kept expecting to hear Dr. Schultz say: "Who took my screwdriver?" And then to hear Julie add: "My thread is missing, too." That could have happened and set them to thinking—but it didn't, and that night, an hour after Julie, George, and Dr. Schultz left the laboratory, we were out of our cages and gathered, the whole group of us, before the mouse cabinet. Justin opened its doors, unlatched their cages, and the mice came out. They looked very small and frightened, but one strode bravely forward.

"You are Nicodemus?" he said to me. "I'm Jonathan. Thank you for taking us out with you."

"We're not out yet," I said, "but you're welcome."

We had no time for chatting. The light coming in the windows was turning gray; in less than an hour it would be dark, and we would need light to figure out how to open the screen at the end of the shaft.

We went to the opening in the baseboard.

"Justin," I said, "take the lead. Roll up the thread as you go. I'll bring up in the rear. No noise. There's sure to be somebody awake somewhere in the building.

We don't want them to hear us." I did not want to leave the thread where it might be found: the more I thought about it, the more I felt sure Dr. Schultz would try to track us down, for quite a few reasons.

Justin lifted the grid, pushed open the sliding panel, and one by one we went through. As I watched the others go ahead of me, I noticed for the first time that one of the mice was white. Then I went in myself, closing the grid behind me and pushing the panel half shut again, its normal position.

With Justin leading the way, we moved through the dark passage quickly and easily. In only fifteen or twenty minutes we had reached the end of the thread; then, as Justin had told us it would, the shaft widened; we could hear the whir of the machine ahead, and almost immediately we saw a square of gray daylight. We had reached the end of the shaft, and there a terrible thing happened.

Justin—you will recall—had told us that the machine, the pump that pulled air through the shaft, had switched from low speed to high when he had first explored through there. So we were forewarned. The trouble was, the forewarning was no use at all, not so far as the mice were concerned.

We were approaching the lighted square of the opening when the roar began. The blast of air came like a sudden whistling gale; it took my breath and flattened my ears against my head, and I closed my eyes instinctively. I was still in the rear, and when I opened my eyes again I saw one of the mice sliding past me, clawing uselessly with his small nails at the smooth metal beneath him. Another followed him, and still another, as one by

one they were blown backward into the dark maze of tunnels we had just left. I braced myself in the corner of the shaft and grabbed at one as he slid by. It was the white mouse. I caught him by one leg, pulled him around behind me and held on. Another blew face-on into the rat ahead of me and stopped there—it was Jonathan, who had been near the lead. But the rest were lost, six in all. They were simply too light; they blew away like dead leaves, and we never saw them again.

In another minute the roar stopped, the rush of air slowed from a gale to a breeze, and we were able to go forward again.

I said to the white mouse: "You'd better hold on to me. That might happen again."

He looked at me in dismay. "But what about the others? Six are lost! I've got to go back and look for them."

Jonathan quickly joined him: "I'll go with you."

"No," I said. "That would be useless and foolish. You have no idea which shaft they were blown into, nor even if they all went the same way. And if you should find them—how would you find your way out again? And suppose the wind comes again? Then there would

be eight lost instead of six."

The wind did come again, half a dozen times more, while we worked with the screwdriver to pry open the screen. Each time we had to stop work and hang on. The two mice clung to the screen itself; some of us braced ourselves behind them, in case they should slip. And Justin, taking the thread with him as a guideline, went back to search for the other six. He explored shaft after shaft to the end of the spool, calling softly as he went—but it was futile. To this day we don't know what became of those six mice. They may have found their way out eventually, or they may have died in there. We left an opening in the screen for them, just in case.

The screen. It was heavy wire, with holes about the size of an acorn, and it was set in a steel frame. We pried and hammered at it with the screwdriver, but we could not move it. It was fastened on the outside—we couldn't see how. Finally the white mouse had an idea.

"Push the screwdriver through the wire near the bottom," he said, "and pry up," We did, and the wire bent a fraction of an inch. We did it again, prying down, then left, then right. The hole in the wire grew slowly bigger, until the white mouse said: "I think that's enough." He climbed to the small opening and by squirming and twisting, he got through. Jonathan followed him; they both fell out of sight, but in a minute Jonathan's head came back in view on the outside.

"It's a sliding bolt," he said. "We're working on it." Inside we could hear the faint rasping as the two mice tugged on the bolt handle, working it back. Then the crack at the base of the screen widened; we pushed it open, and we were standing on the roof of Nimh, free.

The Boniface Estate

Mrs. Frisby said: "Jonathan and Mr. Ages got the screen open."

"Yes," Nicodemus said, "and without them I doubt that we could have done it. The steel frame was strong, the bolt was secure, and the wire so stiff we could not have bent it enough for one of us to go through. So we were glad they were with us and asked them if they would, after all, like to stay with us. Since there were only two of them, they said they would, for the time being at least."

And now began a journey that was to last, with some

interruptions, for almost two years. Parts of it were pleasant (it was a joyful feeling, at first, just to be free again and to get those laboratory collars off), and parts of it were terrible. I have made notes about all of it, and if the time ever comes when rats publish books of their own, I intend to write a book about it. It would be a long book, full of trouble and danger, too much to tell now. It was in one of the dangerous times that I lost my eye and got the scar you see on my face.

But we did have some happy times, and some pieces of great good luck, two in particular, that help to explain how we got here and what our plans are now.

It was early summer when we got out. We had known that beforehand—we could tell by the lateness of the light through the windows, though it was dark when we finally stood on the roof. We had no trouble getting down the side of the building, however. There were downspouts in the corners with plenty of toeholds (we dropped the screwdriver and the spool of thread into one of these); a little lower there was ivy; we were all good climbers, and there was moonlight to see by. In less than fifteen minutes we were on the ground. Staying in the darkest shadows, under the bushes when we could, we sped away from Nimh, not knowing or caring at first what direction we were going. Nobody saw us.

During the next few weeks we lived as we could. We had, in a way, to learn all over again how to get along, for although the world outside the laboratory was the same, we ourselves were different. We were, a couple of times, reduced to eating from dumps and garbage cans. But knowing how to read, we quickly learned to

recognize signs on buildings: Groceries, Supermarket, Meats & Vegetables, for instance, let us know that there was food inside for the taking. And once inside a supermarket at night (they always leave a few lights on) we could even read the signs on the wall directing us to Section 8 for Dairy Products (cheese), Section 3 for Baked Goods, and so on. In the country there were barns and siloes stocked with grain and corn, and chicken houses full of eggs.

Occasionally we came upon other rats, and a few times we talked with them, but not for long. Because after just a few words they would begin to look at us strangely, and edge away. Somehow they could tell that we were different. I think we even looked different; either the diet or the injections at Nimh had made us bigger and stronger than other rats, and all the strange rats we saw looked, to us, surprisingly weak and puny. So we were set apart from even our own kind.

It was while we were in the country that we had our first important stroke of luck. We had just about decided, after nearly four months of freedom and constant roving, to find a place to settle down—if not permanently, at least for the winter. We thought that it should be in the country, but not too far from a town, so that we would have access to grocery stores as well as barns and gardens.

(It was about this time, too, that I began to wonder, and worry somewhat, about the fact that whatever we ate, whatever we needed, must always be stolen. Rats had always lived that way. And yet—why? I talked to some of the others about this. It was the beginning of a discontent and an idea that kept growing, although

slowly.)

The season was autumn. We were walking one evening down a winding country road. We never walked really *on* the road, but along the edge, so that we could vanish into the bushes or a ditch if anyone came along. You can imagine that twenty rats and two mice traveling in procession would cause some comment, and we did not want that.

As we walked, we reached a very high fence of wrought iron, the kind that looks like a row of black iron spears fastened together, with pointed tops—an expensive fence, surrounding a large estate with a big, expensive-looking house in the middle, and well kept grounds and gardens. We walked along past this fence until we reached a gate.

"There's nobody living in there," said Justin.

"How do you know?"

"The gate's padlocked. And look. Dead weeds standing outside of it, not even bent. Nobody's driven in here for a while."

The house had a quiet, deserted look. There was a mail box in front, hanging open, empty.

"I wonder if we could get in," Jenner said.

"Why should we?"

"It's a big place. It would have a big pantry, big cupboard, big freezer. If it's as empty as it looks . . ."

We turned into the grounds, moving cautiously, and from beneath some bushes we watched the windows. As dusk fell, lights came on in several of them, both upstairs and down.

Jenner said: "That's supposed to make us *think* there's someone there."

"Yes," said Justin, "but there isn't. I could see one of the lamps when it came on. There was nobody near it. And they all came on at the same time."

"Automatic switches. To keep burglars away."

"Well, they're not keeping me away," said Justin. He ran to the house, climbed to one of the windowsills, and looked in. He tried another. Then he came back. "Nobody," he said.

So we went in. We found a small window in the back with a cracked pane, knocked out one corner of the glass, and climbed through. At first, we planned just to look for food. We found it, too, enough to last us for a year or more. As Jenner had predicted, there was a big freezer, well stocked—bread, meat, vegetables, everything—and a whole room full of shelves covered with canned food. The cans baffled us at first, as they had in the grocery stores. We could read what was in them, but we couldn't get it out. Then Arthur found a machine on the kitchen counter. He read the instructions on the side of it: Slide can under cutter and press switch. We tried it. The can turned slowly around in the machine, and when we pulled it out, the top had been cut free. I'll always remember what was in that first can—clam chowder, delicious.

After we had eaten, we wandered around the house. It was a rich man's mansion, with beautiful furniture and fine rugs and carpeting on the floor. There was a crystal chandelier in the dining room, and a big stone fireplace in the living room.

But the greatest treasure of all, for us, was in the study. This was a large rectangular room, with walnut paneling, a walnut desk, leather chairs, and walls lined to

the ceiling with books. Thousands of books, about every subject you could think of. There were shelves of paperbacks; there were encyclopedias, histories, novels, philosophies, and textbooks of physics, chemistry, electrical engineering, and others, more than I can name. Luckily, there was even one of those small ladders-on-wheels they use in some libraries to get to the top shelves.

Well, we fell on those books with even more appetite than on the food, and in the end, we moved into the house and stayed all winter. We could do that, it turned out, without much fear of discovery. We learned that from some newspaper cuttings I found on the desk in the study: They were about a wedding, and most of them showed pictures of a newly married couple leaving a house to begin their honeymoon. The groom was a Mr. Gordon Boniface—"heir to the Gould-Stetson fortune" —and the house they were leaving was the house we were in. According to the clippings, they were going on a trip all the way around the world. They were coming back to the Boniface Estate in May. Until then, it was our estate.

Oh, there was a caretaker-gardener who came three times a week, and once in a while he would check the house in a cursory sort of way. That is, he would unlock the front door, glance around to see that everything looked all right, and then lock it and leave. But he didn't live there; he lived in a small house down the road. And we were expecting him when he came; we had figured out, from the way the place was kept up, the lawns mowed, leaves raked, gardens weeded and watered, that there had to be somebody working on it. So we posted a watch, saw him coming, and kept watching him

all the time he was there. And we made sure, when he looked in the house, that everything *did* look all right.

This involved a certain amount of work. We had to haul all our empty tin cans and other trash at night out into a hidden place in the woods quite far from the house. We cleaned up after ourselves carefully; we learned to use the water taps and the dusting cloths we found in the kitchen closet. If the caretaker had looked more closely, in fact, he would have seen that the kitchen counters were somewhat shinier than they should have been in an empty house. But he didn't. He never even noticed the small corner of glass missing from the back window.

And all winter, far into the night, we read books and we practiced writing.

The Main Hall

There came a knock on Nicodemus's office door; it opened, and Justin and Mr. Ages entered.

"Back so soon?" said Nicodemus.

"Soon?" said Justin. "It's past noon. It's lunchtime."

"Past noon!" Mrs. Frisby stood up, remembering her children waiting at home. Down in the rats home, in the artificial light, it was hard to tell the passage of time, and she had been so engrossed in Nicodemus's story that she had not glanced at the clock.

Justin was wearing a satchel like Nicodemus's, and from it he took a small paper package. "Here's Dragon's medicine," he said, putting it on the table. He asked Mrs.

Frisby: "Did he tell you about the Toy Tinker?"

Nicodemus said: "No. I was just coming to that."

"But I can't stay to hear it now," said Mrs. Frisby. "My children will be waiting for their lunch."

A plan was worked out. Mrs. Frisby would go home to take care of her children. Nicodemus, Justin, Arthur and the other rats involved would work out the details of moving her house, which would be done that night at about eleven o'clock—"after the Fitzgibbons are asleep and we're sure Dragon is, too," said Nicodemus. Mrs. Frisby would return in mid-afternoon to the rosebush.

Mr. Ages said: "And I'm going to lie down. After making that trip with this cast, I'm tired."

"You can have your choice of rooms," said Nicodemus. "Now that Jenner and his friends are gone, we have seven empty."

"Thank you," said Mr. Ages. "Mrs. Frisby, when you return I will tell you as well as I can exactly how to put the powder in Dragon's food."

As she hurried home, Mrs. Frisby considered just how much she should tell her children about all that had happened—and all that was going to happen. She decided at that stage, at least, she would not tell them about their father's connection with the rats. Also that she would not say she had volunteered to put the sleeping powder into Dragon's bowl. That would worry them; she could tell them, perhaps, when it was safely done—when, among other things, there would be no chance for Martin to volunteer in her place.

She would tell them simply that as the owl had suggested, she had gone to the rats and asked for help.

She had found them friendly and intelligent, and a group of them were coming that night to move the house to a place where it would be safe from the plow. That would be enough. She could tell them the whole story later—when she knew it all herself.

But it was not enough. The children were skeptical at first, then intensely curious, especially Timothy (who was looking stronger and feeling more energetic, but still staying in bed, primarily because Teresa and Martin had made him).

"But why should the rats do that?" said Timothy. "We don't know them at all. Nobody does. They keep to themselves."

"Maybe it's because the owl sent me," said Mrs. Frisby, searching for an answer that would satisfy him. "They seem to be impressed by the owl."

"For that matter," said Timothy, "I don't even see why the owl wanted to help. He's no friend of ours, either."

"Maybe they thought someday we could do them a favor in return."

"Oh, Mother!" said Cynthia. "How could *we* ever do *them* a favor?"

"You forget. I did do Jeremy a favor. That's what started the whole thing."

"That, and my getting sick," said Timothy. "I wish I could get up. I'm tired of bed."

"Not yet," said Mrs. Frisby, glad to change the subject. "You must save your strength, because tonight you will have to get up for a little while, when they move the house. We must be sure you're well wrapped up and hope that the night is warm."

"It will be," said Martin. "It's turned quite hot outside."

They ate lunch.

That afternoon Mrs. Frisby told the children that she must leave them to confer again with the rats about moving the house. When she thought of the danger she would face in just a few more hours, she wanted to kiss them all goodbye. But knowing that Timothy, at least, was already suspicious, she did not dare; but told them only that they should not worry if she was a little late getting home for supper.

On her way back to the rosebush she felt quite relieved, almost cheerful. Her problem was nearly solved, and the final solution was in sight. If all went well, Timothy would be saved.

If all went well. Then the thought of what she had to do came back to her like the clanging of an alarm bell. What worried her most was not so much putting the powder into Dragon's bowl, but the fear that at the last minute she might lose her nerve and bungle it somehow. That could wreck the plan.

She looked toward the Fitzgibbons' farmhouse, and there, on the back porch, lying in the sun, was Dragon. He was watching a pair of sparrows playing in the grass halfway to the chicken yard; the tip of his tail barely twitched as he debated whether or not they were near enough to spring for. He looked very big and very dangerous.

At least he was not looking in her direction, and Mrs. Frisby hurried on to the bush, directly to the hidden entrance, and slipped inside. When she reached the

arched portal, Brutus was standing guard as before, but this time he greeted her politely.

"I've been expecting you," he said.

"May I go in?"

"If you'll wait just a minute, I'll get Justin." He went inside the arch and pressed a small button on the wall. Mrs. Frisby had not noticed it before.

"A doorbell," she said.

"It rings a buzzer down below. If I pushed it three times, you'd see some action."

"Action?"

"That's the alarm signal. A dozen rats would come out this door, ready to fight. All the rest, with the women and children, would be hurrying out the back door."

"I didn't know there was a back door."

"It comes out in the woods, in a blackberry bramble. It's got a longer tunnel than this one."

When Justin appeared, they went down the same hallway as before, but this time, when they reached the chamber where the elevator and the stairway led down, Justin paused.

"Nicodemus thought you might like to see our main hall—just a quick look. He said you asked about the Plan."

"I did," said Mrs. Frisby, "but he didn't tell me about it."

"It's more than just a plan now, but we're used to calling it that. If you see the main hall, you'll get an idea of what we're doing."

So instead of going down as they had before, Justin led the way across the chamber, where, as Mrs. Frisby

had noticed, the tunnel continued. They walked along for what seemed like several more minutes.

"Somewhere right along here," Justin remarked, "we're entering the woods. You'll notice the tunnel runs a bit crooked. We had to bend it to go around tap roots—some as thick as fence posts."

They went on until they came to a fork in the tunnel. "Right fork leads out to the blackberry bramble," said Justin. "Left fork leads to the main hall." They took the left fork.

"Now brace yourself for a surprise."

From ahead came noises: the sound of many rats talking, a sound of hurrying and thumping and of machinery running. They stepped into a room as full of activity as a factory.

It was the biggest room Mrs. Frisby had ever seen, half the size of a house, with a ceiling and floor of hard gray rock. It was brightly lit with electric bulbs —here the large sized ones, strung unshaded—and beneath them were rats at work everywhere. Rats running electric motors that ran belts that ran small circular saws, lathes, drills, grindstones, and other tools Mrs. Frisby could not name; rats hammering, welding, cutting. But most of all, rats hauling.

There was a steady procession to and from the far end of the chamber, and each of these rats wore a harness to which was fastened a pair of large, sturdy sacks, one on each side, like a miniature pack horse. As the rats trooped in, their sacks were empty. They disappeared into a part of the room that was hidden by a high wall of wood. When they came out, the sacks were full and heavy.

As she watched, a troop of ten, their sacks bulging, went past her out the tunnel; they greeted Justin and nodded at her, but they did not pause. She noticed that just inside the entrance an electric fan whirred quietly, aiming inward, pulling fresh air into the room from somewhere out in the woods.

Mrs. Frisby stood beside Justin and gaped. She felt dizzy at the sight, the motion, the noise, and the size of the room, which must have measured twenty feet long and almost as wide.

"How could you ever dig out such a big room?" she asked.

"We didn't," said Justin. "We found it. It's a natural cave. You can see that the ceiling and floor are solid rock. That's the reason, or the main one, we chose this spot to live. Others had lived here before us. Probably, for centuries before there was a farmhouse, bears. Then wolves, then foxes, then ground hogs. We had quite a cleaning job to do, I can tell you.

"When we found it, there was a large hole, only a few feet long, leading straight in, but it was so full of sticks and leaves you could hardly see it. We closed that entrance entirely and dug another, longer and narrower—our back door. Then we dug our living quarters under the rosebush, and the entrance you came in. But the cave is still our chief workshop. Let's go in."

As they entered some of the rats looked up, some waved and smiled, but all quickly turned back to the work they were doing, as if they were in a hurry.

"They're all on a schedule," Justin explained, talking close to Mrs. Frisby's ear to be heard above the noise, "so they can't stop working."

One group, especially busy, was gathered around an odd-shaped object of wood and metal about a foot long. It was curved and had a point at one end; it looked, Mrs. Frisby thought, rather like the side of a small boat. Could the rats be making a boat? Then she saw that they were fastening a strong metal ring to the top of it.

Justin led her to it.

"That," he said, "is our most important invention, the key to the whole Plan. We made a pilot model last fall. We tried it out, and it worked. So now we're making three more."

"But what is it?"

"It's a plow. Nicodemus designed it himself, after reading every book he could find about farm tools. It's light and sharp, especially made to be pulled by rats. It takes eight of us to pull it—more if the turf is tough. But with it we can turn over, in a day of hard work, a patch of earth about ten by fifteen feet."

"But why? What do you need it for?"

"Come over here, and I'll show you."

He led the way to the back of the cave where the high walls stood. He opened a door and beckoned her

through. She stood in a large wooden bin; starting at her feet and rising in a slope to the wall of the cave was a small mountain of grain.

"Oats," said Justin.

He led her on, opened another door on another mountain. "Wheat," he said.

And others:

"Barley."

"Corn."

"Soy beans."

"We've been building these stockpiles for a long time," he said. "All from Mr. Fitzgibbon's barn. We now have a two-year supply for one hundred and eight rats, plus enough to plant for two crops, in case the first one fails. In there"—he gestured toward the last bin in the row—"we have boxes full of seeds. Seeds for tomatoes, beets, carrots, melons and a lot more."

All the time they stood there, the steady procession of rats continued. They entered the bins, took off their harness-sacks, filled the sacks with grain, put them on again, and left through the tunnel, out the back door. They looked, Mrs. Frisby thought, like very large ants endlessly toiling on an anthill.

Justin must have got the same impression, for he said:

"If the ants can do it, Nicodemus says, if the bees can do it, so can we."

"Do what?"

"Why, live without stealing, of course. That's the whole idea. That's the Plan."

The Toy Tinker

"We left the Boniface Estate on the first of May," said Nicodemus. "We knew a lot more than when we went in. We had been there eight months."

"Then," said Justin, "we found the Toy Tinker."

They were back in Nicodemus's office; Mr. Ages, having rested, sat with them.

"Not quite yet," said Mr. Ages.

"No," said Nicodemus. "That was in late summer. When we first got out, we began searching for a place to live permanently, or at least a place where we could stay as long as we wanted. We had a pretty clear idea of what we were looking for. We had had plenty of

time to talk about it, on the long winter evenings in the library between reading books."

The reading we did! We knew very little about the world, you see, and we were curious. We learned about astronomy, about electricity, biology and mathematics, about music and art. I even read quite a few books of poetry and got to like it pretty well.

But what I liked best was history. I read about the ancient Egyptians, the Greeks and Romans, and the Dark Ages, when the old civilizations fell apart and the only people who could read and write were the monks. They lived apart in monasteries. They led the simplest kind of lives, and studied and wrote; they grew their own food, built their own houses and furniture. They even made their own tools and their own paper. Reading about that, I began getting some ideas of how we might live.

Most of the books were about people; we tried to find some about rats, but there wasn't much.

We did find a few things. There were two sets of encyclopedias that had sections on rats. From them we learned that we were about the most hated animals on earth, except maybe snakes and germs.

That seemed strange to us, and unjust. Especially when we learned that some of our close cousins—squirrels, for instance, and rabbits—were well liked. But people think we spread diseases, and I suppose possibly we do, though never intentionally, and surely we never spread as many diseases as people themselves do.

Still, it seemed to us that the main reason we were

hated must be that we always lived by stealing. From the earliest times, rats lived around the edges of human cities and farms, stowed away on men's ships, gnawed holes in their floors and stole their food. Sometimes we were accused of biting human children; I didn't believe that, nor did any of us—unless it was some kind of a subnormal rat, bred in the worst of city slums. And that, of course, can happen to people, too.

Had we, then, no use at all in the world? One encyclopedia had a sentence of praise for us: "The common rat is highly valued as an experimental animal in medical research due to his toughness, intelligence, versatility and biological similarity to man." We knew quite a bit about *that* already.

But there was one book, written by a famous scientist, that had a chapter about rats. Millions of years ago, he said, rats seemed to be ahead of all the other animals, seemed to be making a civilization of their own. They were well organized and built quite complicated villages in the fields. Their descendants today are the rats known as prairie dogs.

But somehow it didn't work out. The scientist thought maybe it was because the rats' lives were too easy; while the other animals (especially the monkeys) were living in the woods and getting tougher and smarter, the prairie dogs grew soft and lazy and made no more progress. Eventually the monkeys came out of the woods, walking on their hind legs, and took over the prairies and almost everything else. It was then that the rats were driven to become scavengers and thieves, living on the fringes of a world run by men.

Still it was interesting to us that for a while, at least,

the rats had been ahead. We wondered. If they had stayed ahead, if they had gone on and developed a real civilization—what would it have been like? Would rats, too, have shed their tails and learned to walk erect? Would they have made tools? Probably, though we thought not so soon and not so many; a rat has a natural set of tools that monkeys lack: sharp, pointed teeth that never stop growing. Consider what the beavers can build with no tools but their rodent teeth.

Surely rats would have developed reading and writing, judging by the way we took to it. But what about machines? What about cars and airplanes? Maybe not airplanes. After all, monkeys, living in trees, must have felt a need to fly, must have envied the birds around them. Rats may not have that instinct.

In the same way, a rat civilization would probably never have built skyscrapers, since rats prefer to live underground. But think of the endless subways-below-subways-below-subways they would have had.

We thought and talked quite a bit about all this, and we realized that a rat civilization, if one ever did grow up, would not necessarily turn out to be anything at all like human civilization. The fact was, after eight months in the Boniface Estate, none of us was sorry to move out of it. It had given us shelter, free food, and an education, but we were never really comfortable there. Everything in it was designed for animals who looked, moved and thought differently from the way we did. Also, it was above ground, and that never felt quite natural to us.

So, when we left, we decided that our new home should be underground, preferably, if we could find

it, a cave. But where? We thought hard, and studied maps and atlases—there were plenty of those in the study. Finally we reached some conclusions: To find a cave, we would have to go where there were mountains—there aren't many caves in flatlands. And for food, it would have to be near a town or better, a farm.

So we wanted to find a farm, preferably a big one, with a big barn and silos full of grain, near the mountains. We studied the maps some more, and it was Jenner, I think, who spotted this area as a good place to look. On the map, a big part of it was covered with the contour lines that show mountains, and across these were written the words, "Thorn Mountains National Forest." Beneath that, in smaller letters, it said, "Protected Wilderness Preserve." Bordering this, where the mountains turned to foothills, the map showed rolling country with quite a few roads but hardly any towns, which, we thought, ought to mean farmland.

We were right, as of course you know now. It took us two months of steady traveling to get to the Thorn Mountains National Forest, but we found it; we're under the edge of it right now. And there are plenty of caves, most of them never visited by people—because people aren't allowed to drive into a wilderness preserve. There aren't any roads in the forest, but only a few jeep trails used by rangers, and airplanes are not permitted to fly over it.

We looked at a lot of caves, some big, some small, some dry, but mostly damp. Before we chose this cave and this farm, however, we found the Toy Tinker.

It began as a sad sort of thing. We found an old man lying in the woods one morning, near one of the jeep

trails not so far from here, and he was dead. We don't know what he died of; we guessed it must have been a heart attack. He was dressed in a black suit, old-fashioned in style but neat, not ragged. His hair was white, and his face looked gentle.

"I wonder who he was, and where he was going," Justin said.

"Whoever he was," Jenner said, "he wasn't supposed to be in here at all."

"We ought to bury him," I said.

So we did, not by digging a grave, but by covering him with a high mound of leaves and stones and twigs and earth. It was in gathering material for this mound that Justin made the second discovery. He was back in the bushes, out of our sight.

"Look here," he called. "I found a truck."

It was a very ancient truck, with a small round hood, but it had been lovingly polished and was wonderfully shiny. The body, which was square and large, had been rebuilt and painted red and gold. It had little windows with white curtains, and between them, lettered in gold, were signs:

THE TOY TINKER

Toys
Repairs
Hobby Kits
Model Sets
Electrical Toys
All Work Guaranteed

Obviously the truck had belonged to the old man. He was a peddler and mender of toys, the red and gold wagon was his shop and his home, and he had driven into the woods to camp for the night. It was against the law, of course, so he had concealed the truck behind some bushes, off the trail, under a big beech tree. We could see where he had made a campfire, carefully surrounding it with stones and clearing away the brush so he would not set the woods afire. Beyond the beech tree a narrow brook flowed. It was a peaceful spot.

We could see what had probably caused the old man's death: one wheel of the truck had sunk into the soft earth and was stuck. A shovel lay near it—he had been trying to dig it out. The work had been too hard for him, and he had started to go for help when he collapsed.

This much we could figure out just by looking. Then somebody said:

"Whose truck is it now?"

"It belongs to his heirs," I said.

"Whoever *they* are," said Jenner. "He may not even have any. He seems to have been alone."

"Anyway," said someone else, "how would they ever find it?"

"That's true," I said. "We don't know who he was, and if we did, we have no way of notifying anyone. So I suppose, if we want it, the truck is ours."

"Why don't we see what's in it?"