

## The Mole Pirate

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The story of the Mole Pirate properly begins neither with Jack Hill, who built the Mole, nor with Durran, who stole it and used it to acquire more loot and do more damage than any other pirate ever managed in an equal length of time.

The records begin with a Mrs. Frank P. Hohenstauffer, who appears only once in the entire affair, and with Professor Eisenstein who, whatever his prominence in history, vanishes with equal promptness from this tale.

Really, the career of Durran as the Mole Pirate was simply one long battle between himself, the scientist-criminal, and Jack Hill, the inventor we remember as the man who made the earth-plane possible. But the story does begin with Mrs. Hohenstauffer, however briefly she remains in it.

She was, it seems, washing dinner dishes on the screened-in back porch of her home in Wausakkee, New York. It was three o'clock in the afternoon of June 16, 1935. The sun was hot. The radio in the dining room droned through a news bulletin, amid sundry cracklings of summer static:

Police have found a hide-out they feel sure was used by James Durran, America's Public Enemy No. 1, for at least two weeks. Durran, formerly one of America's greatest scientists, has been living in the most squalid surroundings, amid great privation, since he made his cynical statement of his intention to renounce all ideas of morality and ethics for the so-called natural principle of living for one's own satisfaction only. Durran's record to date shows that in six months he has been the cause of eight deaths - two believed to be murders committed by him personally - and twelve robberies. His loot has totalled more than a hundred thousand dollars, but he lives in conditions of unbelievable squalidness.

Four members of his gang, recently captured, have been sentenced to life imprisonment and are now in Sing Sing prison-

Mrs. Frank P. Hohenstauffer dried dishes and meditated piously. It was good that the government required the broadcasters to emphasize the penalties dealt out to lawbreakers and not to talk about criminals until they were caught or nearly caught. It would make young men more law-abiding.

She looked complacently through the screening. The Albany highway soared past, not half a mile from her door. As she looked, a car slowed down and turned off to the county road. It disappeared from view behind a clump of trees.

Mrs. Hohenstauffer looked for it to reappear with a sensation of mild curiosity. But it did not. It remained hidden. For three, four, five minutes there was no sign of it. Then it showed again, sweeping back up on to the highway. Into low speed, racing in second - dodging two heavy trucks bound for Troy - and then into high, the car shot forward at its maximum speed until it became a dwindling speck in the distance.

Mrs. Hohenstauffer blinked. That was her clump of trees. These people, these tourists, had no respect for other people's property. Maybe they came to steal green stuff for a city apartment; maybe some of the tiny pines and cedars that city people were making a fad of just now.

Indignantly, Mrs. Hohenstauffer took off her apron. She marched the full half mile to the wood lot in the broiling sun, growing more indignant as she marched. She saw the tyre tracks of the car. It had crushed ruthlessly through the tender small growths which Mrs. Hohenstauffer expected to sell at the proper time for transplanting. She followed the tracks, growing more angry by the minute.

Then she saw a man lying on the ground. His sandy-brown whiskers and white hair looked vaguely familiar to her even at first glance, but then she grew horrified. He was bound hand and foot. He was quite unconscious, and blood flowed from a nasty blackjack wound on his temple. Mrs. Hohenstauffer squawked in dismay.

It was half an hour before the police came. In that time Mrs. Hohenstauffer had cut the ropes from about the man's body. She had carried him, herself, all the way back to the house. There she telephoned for the police and a doctor and regarded her patient with extreme disfavour. He was undoubtedly one of these criminals of whom the radio chattered constantly.

She greeted the police with indignant protests against their allowing criminals to clutter up the wood lots of law-abiding people with their victims and acquaintances.

Then the officers saw her patient.

'Good Heaven!' said the first. 'It's Professor Eisenstein! What the hell's happened to him?'

'Prof--' Mrs. Hohenstauffer squeaked. 'The scientist? The great scientist that all the papers print pictures of?'

'That's who,' said the cop. 'Here! We got to get him fixed up so he can tell us -'

The patient's eyes opened vaguely. His whiskers stirred. 'Durran,' said the injured man faintly, 'Durran, you verdammt fool, what is der idea?'

Then he looked bewildered.

The cops snapped phrases of explanation.

'An' you were talkin' about Durran,' said one of the two feverishly. 'Did he sock you, professor?'

'To be sure.' The white-baked man blinked and said angrily: 'I came out of my house and got in my car. I had an appointment to visit der American Electric laboratories, where Jack Hill is going to show off a most remarkable infention today. And halfway there, my chauffeur turned around, and he was not my chauffeur. He was Durran, whom I knew. And he hit me with a blackjack. I suppose he has stolen my car.'

'Right!' snapped the cop. 'Brady, you got it? Phone in an' give the alarm. Durran's in Professor Eisenstein's car, an' it's a blue Diessel, licence number is -'

The other cop snapped into the telephone. Plugs clicked. A smoothly running organization moved swiftly into action. Short radio waves carried a brisk, curt order into every police car in New York, and to police-car headquarters in at least two adjoining States. In fifteen minutes, by actual timing, there were more than two hundred police cars, at least a hundred traffic posts, and even a few stray members of the general public feverishly on the lookout for Professor Eisenstein's blue Diessel, because it contained America's Public Enemy No. 1.

And all that effort and all that searching was in vain; Because the blue Diessel was parked outside the American | Electric laboratories, where Professor Eisenstein had an appointment, and nobody thought of noticing it.

It was not until Professor Eisenstein's secretary was notified of his whereabouts and telephoned an apologetic message to the laboratory that the blue Diesel was noticed. The professor and Mrs. Hohenstauffer immediately vanished from the tale of the Mole Pirate. But in the meantime things had happened.

## II

Jack Hill was talking to reporters in the machine-shop section of the American Electric laboratories. The lathes and machine tools were covered over, for the moment, and there were a dozen or more of folding chairs in view. On the table before Jack there was a large sheet of white-painted metal, on which stood a block of brass and a small but intricate contrivance of radio tubes and the like. Behind him a wide curtain hid the farther wall.

'I'll give you a part of the idea now,' said Jack. 'Professor Eisenstein is late, but I don't want to start the apparatus until he gets here.'

'What's all this performance about, anyway?' demanded a man from the Mirror. 'Somebody said you had some kind of gadget that made you able to walk through walls.'

'Td hate to tell you what I can do," returned Jack. 'You wouldn't believe me. I'd rather show you. I've been experimenting on a rather neglected aspect of the atom. You know, of course, that the atom is regarded today as a sort of miniature solar system, a nucleus like a sun with a greater or lesser number of

electrons revolving around it like planets?'

'Yeah.' The Minor man had appointed himself spokesman. 'We know all that stuff.'

'Good!' said Jack. 'Then we can talk about magnets first. In ordinary iron the molecules have north and south poles, like all other molecules, but they point in every possible direction, helter-skelter. They have magnetism in them, but it isn't organized. Pointing haphazard, though each one is a miniature magnet, in the mass they neutralize each other. It's only when the whole mass of iron is magnetized that all the poles point in the same direction - or only when they all point in the same direction that it's magnetized. Is that clear, too?'

'Yeah! I hadda do an interview with Eisenstein once,' said the Mirror man. 'He said I had a brain for that stuff.'

'Kind of him,' observed Jack. 'Now I've been trying to carry the idea of organization a bit further. Not only molecules but atoms have poles, and they point helter-skelter in every direction, too. Suppose I got them all to point in one direction. What would happen then?'

'You could walk through walls?' hazarded the Mirror man.

Jack grinned. 'Not so fast! Let's think it over first. An atom is a miniature solar system. That means it's practically flat. But with such flatnesses pointing in every direction - well, an enlarged picture of any sort of matter would be just about like a dozen packs of cards being poured from one basket to another and back again. They'd be fluttering every which way. You couldn't swing a stick through those falling cards without hitting a lot of them.'

'Not unless you were pretty good,' conceded the Mirror man.

'But if you had the same number of cards falling, only in a neat and orderly fashion, every one parallel, so they'd stack up all face down in the bottom basket. It's a standard card trick to spring a pack of cards from one hand to the other like that. You could swing a stick through that bunch.'

'You might knock one of 'em away,' said the Mirror man cautiously, 'but you wouldn't mess up the whole works. They wouldn't block up the whole distance between the baskets.'

'Just so!' said Jack approvingly. 'Professor Eisenstein was right. You do have a head for this stuff. Now the object of my experiments has been to arrange the atoms in a solid object like the second bunch of cards. They're flat. And it turns out that when they're arranged that way, all parallel, they block so small a proportion of the space they ordinarily close up, that they will pass right through ordinary matter with only the slightest of resistance. And that resistance comes from just such accidental collisions as you suggested.'

There was a stirring at the door. The snow-white hair and bushy, sandy whiskers of Professor Eisenstein came into the room. He beamed at Jack and the reporters. He spoke separately to Gail Kennedy, bending over her hand. The girl looked at him queerly. She was here because she intended to marry Jack and wanted to share in this triumph.

Her father and half the higher-ups of American Electric came in after the professor. Gail's face stiffened when her father's eyes fell upon her. He did not approve of Jack Hill.

'Ach, my young friend!' said Professor Eisenstein blandly.

A flash bulb flared as he shook hands with Jack. A news photographer changed plates in his camera and abstractly envisioned the caption. It would be 'Eisenstein Congratulates Youthful American Scientist', if this demonstration came out all right, and 'Eisenstein Condoles' if it didn't.

'You go on with your explanation,' said Eisenstein cordially. 'I sit at your feet and listen. Presently I make an announcement which will surprise everybody.'

He sat down benignly. Gail looked at him, at her father, and back to Eisenstein. A moment later she appeared to be puzzled and uneasy. Her eyes remained on Eisenstein.

'I had just explained to these gentlemen,' said Jack, 'the object of my experimenting, the co-ordination of atom poles and what might be expected to result. I think all of you are familiar with the reasoning, since there's been a good deal of controversy about it. It was suggested that any co-ordinated matter would collapse into something like neutronium. Fortunately, it doesn't.'

He flung a switch and vacuum tubes glowed. A curious, ghostly light appeared above the white-painted sheet of metal on the table.

'The field of force,' he explained, 'which arranges the atoms in any substance so that they all point the same way.'

He switched off the tubes. The light died. He picked up the block of brass that was on the table. He placed it where the light had been.

'I am going to co-ordinate all the atom poles in this piece of brass,' he observed. 'Around the shop, here, the men say that a thing treated in this way is dematerialized. Watch!'

He flung the switch again and as the eerie white light flared on, the solid mass of brass seemed to glow of itself. Its surfaces ceased to reflect a brazen colour. They emitted the ghostly hue of the field light. Then it seemed that the block glowed within. The light seemed to come from inside the block as well as from its outer edge.

The whole thing took place in only the part of a second. A swift, smooth, soundless glowing of the block, which began at the outside and seemed to move inward - and cease. Then there was nothing visible at all but the queer glow itself.

Jack turned off the field. The light vanished. But the metal block did not spring back into view. Instead of a solid cube of polished brass there was the tenuous, misty outline of a cube. It looked unsubstantial, fragile. It looked like the ghost of a block of metal.

'It's still there,' said Jack, 'but you're looking past the edges of the atoms, so it's very nearly transparent. It's just as solid, in its way, as it ever was. It weighs as much. It conducts electricity just as well. But it's in a state that isn't usual in nature, just as magnetism isn't usual. The poles of its atoms all point the same way. Now look!'

He swept his hand through the misty block. He lighted a match and held it in the middle of the phantom. It burned, where Jack had claimed there was solid brass. A sceptical silence hung among the reporters.

Then the Mirror man said: 'That's a good trick, but if it wasn't phony -'

'What?'

'If that brass were still there, an' it would pass through anything else, it'd slide right through that sheet metal an' drop through the floor!'

'Radioactivity,' said Jack. 'The only exception. When coordinated matter is bombarded by radioactive particles, some of the atoms are knocked halfway back to normal. This paint has thorium oxide in it and it's slightly radioactive. Come here a moment.'

The Mirror man went sceptically forward. He suddenly reached out and passed his hands through the phantom block.

'It's a phony!' he said firmly. 'You're trying' to put somethin' over on us!'

'Put on these gloves,' said Jack. 'They've been painted with more of the same radioactive paint.'

The Mirror man incredulously obeyed. He reached again for the phantom block. And he gasped. Because his hands, encased in these gloves, touched something which was not only solid., but heavy. He picked it up, held it high; and his face was a study in stupefaction and unwilling belief. He staggered over to the nearest of his confreres.

'By cripes!' he said dazedly. 'It is real, even if you can't see it! Put y'hands on it!'

The other reporter, who was seated at the table, put his hands right through the object he could very dimly see. And to the Mirror man the brass block was solid. It was heavy. He gasped again and his hold relaxed. The phantom slipped from his fingers.

'Look out!'

The man gasped for the third time as the phantom object dropped. And it looked so utterly unsubstantial that the eye denied its weight. It should have floated down like gossamer, or so it seemed. But it did fall with the forthrightness of something very heavy indeed.

The man who had just put his hand through it now instinctively held them out to catch it. He cupped them, in anticipation of something very fragile and light. The phantom struck his hands. It went through them, and he could not feel it. It reached his knees and penetrated them. It dropped to the floor and through it, and did not as much as stir the cloth of the seated man's trousers.

'That's gone,' said Jack dryly, 'though I intended to reverse the process and bring it back to normal. It's felling down toward the centre of the earth., now, encountering just about as much resistance from earth and stone as if it were falling through air. I don't think any of us are likely to see it again.'

Professor Eisenstein beamed. The Mirror man put his head in his hands. The other reporters babbled together. Gail Kennedy looked, frequently and uneasily at Professor Eisenstein. 'A telephone rang stridently somewhere. Somebody answered it, out of sight.

'Have I gone nuts ?' the Mirror man exclaimed.

'I don't think so.' Jack assured him. 'If you have, all the rest of us will be nuts, tooa in just a moment. Because what I've showed you is just a preparation for this.'

He turned and pushed aside a curtain. It took nearly a minute to clear the tiling behind it, because the curtain hid a space all of forty feet long, and most of that space was filled with an altogether-extraordinary object.

While Jack thrust at the curtain a distant voice said, evidently into a telephone: 'Professor Eisenstein's secretary? Yes, the prof-'

Noise cut out the rest of it. Gail Kennedy looked puzzledly at Professor Eisenstein. He was abruptly alert and feral. He was listening. His eyes, which had been benign, became quite otherwise. And Gail Kennedy suddenly looked as if she could not believe a thought which had come to her and which she could not dismiss. She stared at Professor Eisenstein in something approaching horror.

Jack turned again to his audience. He had cleared the Mole to view. It was a vessel of riveted steel plates quite ten yards in length and about three yards high. There was a rough approximation to torpedo shape, but the likeness was not carried far enough to keep it from looking more like a military tank than anything else.

Yet even that wasn't a fair description. There were neither tractor treads nor wheels. Instead there was a marine screw propeller in the back and four others mounted vertically where wheels should have been. They made the Mole into something it was quite impossible to classify.

It was plainly designed for travel, but in what medium was not clear. It did not seem fitted for travel in any medium at all. Yet the heavy glass windows and a carefully curved and fitted door which opened inward seemed to imply that the medium was one in which a supply of air for breathing would need to be carried along,

'Here's the ship,' said Jack curtly. In it the field of force I just generated is made use of. There's a generator of that field inside the ship, also a means of alternating the gradually weakening field to restore it to its normal condition. The process is the same as demagnetization.

'I go inside the ship. I start the motors, and these screws try to revolve. They can't. I turn on the force field and the ship becomes like that block of brass. It tries to drop down to the centre of the earth as that block of brass did. But the screws revolve then. And they are coated with a film of radioactive matter somewhat thinner than the paint on this sheet of metal.

It's not radioactive enough to keep them "solid". It's just enough so that they seem to work in a medium about like - like -'

'Mashed potatoes,' put in Professor Eisenstein unexpectedly. 'Much better than water for der screws to work in.'

'Just so,' agreed Jack. 'And now, to save a lot of talk, I'll show you how it works.'

He opened the curved door.

Professor Eisenstein got up and said blandly: 'May I come ? I haff der most implicit confidence.'

Jack stared. Then he said gratefully: 'Thanks! Of course you can come'. To the others he added: I'll put the ship through the same process as the block of brass, only I'll rematerialize it. Please don't stand where I'm going to bring it back. The results would be very unpleasant.'

He ushered the white-haired scientist into the door. Gail Kennedy stood up and opened her mouth, her features queerly twisted. But before she could speak Jack was inside the Mole and the door had closed behind him.

There was a queer roaring noise out-of-doors. It sounded like the popping of many motorcycles. "But those in the machine shop of the American Electric Co. paid no heed. They were giving strict and exclusive attention to the ungainly metal shape before them.

Something rumbled inside it. The screws stirred. Then a ghostly eerie light seemed to envelop it. And in the fraction of a second the solid mass of metal shimmered into insubstantiality. It was transparent - more transparent than any glass. Only its outline could be seen, ghostly and improbable.

The screws, for an instant, seemed somehow more 'solid than the rest. They swept swiftly into motion, into a blur which was like the most airy of froth. The whole ship settled with a speed which suggested falling, until those screws took hold in the solid concrete of the floor.

It was a phantom, then, which remained steady for an instant. Then the tail propeller began to revolve. And slowly, slowly, the apparition, the ghost, the utterly unreal outline, began to move. The tail propeller swept through the concrete of the floor. The whole thing moved forward with a quick gathering of speed which was exactly like a ship getting under way. It reached the wall it went through it. And not one brick, not one grain of mortar, was disturbed. Stunned silence. Then a startled babbling.

A news photographer wailed: 'I didn't flash it! I didn't flash it!'

And then there was a sudden rush of figures at the doors - dark blue-clad figures with service revolvers out and ready.

'Where's the man who calls himself Professor Eisenstein?' barked a police lieutenant, staring around. 'We want him!'

The president of American Electric, no less, stood up indignantly. 'What's all this about ?' he demanded furiously. 'What the devil -'

'Durrant!' snapped the cop. 'He knocked Professor Eisenstein on the head an hour ago. Stole his car. One of your men here said Professor Eisenstein was right in here. That must be Durrant himself! Where is he?'

Then Gail Kennedy gave a little choked cry. And as she uttered the cry the shimmering, ghostly outline of the Mole rose up through the floor. Somebody leaped to be away from it. It went to the end of the room and out through the wall beyond. And again there was not a brick or a grain of mortar disturbed.

'He's - in that!' said Gail, her throat constricted. 'With Jack! Hide! You policemen! Hide, quickly!'

And for long minutes there was incoherent argument with the police before the ghostly Mok appeared again. Its pointed beak came through the wall to the right. It was a wraith. It was unreal. It was not substance, as we know substance. It came, slowing as it -came, and checked itself by a reversal of its tail propeller. It was still, a hair-raising spectacle to the policemen who had not been prepared for such a sight.

And suddenly an eerie light seemed to envelop it and fade, and its substance thickened and thickened. Its vertical screws, revolving freely in the concrete, found resistance to their movement. They climbed



upward, lifting the whole Mole.

And then, as the eerie light grew very faint and died, the Mok became actually solid. It became real, and it was a massive construction of riveted steel plates, unlike anything else that had ever existed on earth. Its solidity came as a shock. The clang of its door as it opened broke a silence of almost superstitious intensity.

Jack Hill came out. 'As you see,' he said quietly, 'it works.' Gail darted forward to him, clutching him convulsively. 'Jack!' she gasped. 'Professor Eisenstein! He's Durran! I thought he'd kill you and take the Mole.

Then a bland voice came from the open door of the earthship. 'In that case, I can drop both my accent and my whiskers.'

The man who had been taken for Eisenstein tugged at his face. The identifying sandy whiskers came off. He flung away the white wig. He grinned at the men in the machine shop.

'As Professor Eisenstein,' he said amusedly, 'I promised an announcement that would surprise everybody; I make it now. I'm Durran.'

A pistol barked savagely. He jerked backward and almost closed the door. Through the remaining crack he said more amusedly still: 'I add that my mission here to-day was much more successful than I expected. I hoped to gain useful information. I've got something much better, this contrivance and instruction in its use gained on a trial trip. Au'voir!'

The door slammed. Almost instantly a fusillade of shots poured upon the machine. But the eerie white light enveloped it. It shimmered into a phantom which fell with a jerk. Then the vertical screws caught it again and raised it back into view. It did not come all the way above the surface of the ground, now. Only half its bulk appeared above the surface. Only the tip of the phantom tail screw appeared above the concrete in which it suddenly began to revolve with a quite impossible freedom. It moved forward - through the wall. It vanished.

'And I showed him all about the thing!' said Jack Hill. 'I even let him steer it!'

There were policemen outside the laboratory. Durran was America's Public Enemy No. i. When a force of uniformed men swarmed inside the laboratory, another force took position outside, to surround him in case he evaded the others momentarily. These men outside saw what looked like the ghost of a prehistoric monster swimming across solid ground toward them. Superstitious terror afflicted some. Others did not believe their eyes. But a hoarse and raging voice from the laboratory shouted for them to shoot it.

They did. Their bullets went through it without affecting it in the least. It was not substance of a sort that bullets could harm. But as if they were annoying, like pin pricks, the phantom dived. It sank out of sight in the solid earth underfoot, still moving forward. Some of the policemen thought they could feel a slight vibration, as if of engines underground.

Durran vanished in and with the Mole at something after four o'clock. At five, a motorist drove shakenly to the home of his family physician. His nerves were badly frayed.

He had seen something like a turtle, he said, swimming in the solid earth. It was larger than his car, and it swam across a concrete road, in the concrete, directly before him. It was a ghost, and there were no ghosts. His nerves were upset, and he wanted treatment which would keep him from seeing anything like that again.

At five thirty, a motorist stopped at a filling station for gas and heard screams coming from inside it. The proprietor was dead on the floor, shot. A coloured helper was having hysterics beside his body.

The helper told what ought to have been a wholly improbable story of a monstrous engine which appeared out of thin air, from which a man emerged and shot the filling-station proprietor. He then took gas and lubricating oil, got back inside the monstrous thing of steel plates, and it melted into thin air again and its ghost swam away.

These two stories were accidents. Durran's real intentions began to be outlined later on - at eight o'clock, to be exact.

At that time - eight o'clock, p.m. Eastern Daylight Saving Time of June 16th - there were extra editions of practically all newspapers on the streets, screaming in headlines of Durran's latest exploit. 'Durran Steals Mystery Invention.' 'Durran Escapes Under Fire.' 'Durran Scores On Cops Again.' 'Scientist-Criminal Turns Phantom.'

But on the whole, the theft of the Mole was played down. The story of what the Mole could do was too improbable to go in a news story. It was held over for the Sunday editions, when feature writers could take space to expound it - if it were still true.

Most of the papers did not really believe in the Mole, despite the impassioned assertions of the reporters who had been on the spot. And in a thousand police stations the official report of Durran's latest exploit and the contrivance he now had at his disposal were subjects for argument. Mostly, the report was regarded with extreme scepticism.

More than one inquiry came to the originating office of that report, demanding confirmation. And more than one hard-headed police official did not bother to inquire, but indignantly reported that a hoax was being put over by somebody. The New York State Police - and half of them, even, did not quite believe it - were spending as much effort trying to get the facts accepted as they were in trying to devise some method of coping with the menace the Mole now represented.

But none of this uncertainty and none of this indignation was to be found in the Wedgewood Arsenal, in Connecticut. Durran simply wasn't thought of there. It was a semi-Federal, semi-State, arsenal which did not manufacture arms. It was a storage place with a stout captain of regulars assigned to duty in it, and a small detail of soldiers who served practically as watchmen. It was an emergency depot of weapons and ammunition, and the duty of its official caretaker was mainly that of making out documents in triplicate for some purpose unknown.

In that arsenal, at eight p.m., there was peace. The captain in charge was seated at a desk in a corner of the vast hall which had once been used for indoor close-order drill by a National Guard organization. He was making out a document in triplicate. His pen scratched. He smoked languidly on a fat cigar. From time to time he mopped his forehead, because it was hot.

There was utter quietness, utter peace. It was so still that it seemed even the scratching of the captain's pen aroused murmurous echoes. The captain sighed heavily. His chair squeaked. That did arouse echoes, which rang about the huge hall for seconds before they died away reluctantly.

Then there was another sound - the very ghost of a sound. Something impalpable and tenuous rose out of the floor. First a round snout, which was quite transparent. After it a misshapen huge bulk, all of thirty feet long.

The whole thing was unsubstantial, was unreal. It came to a stop in the middle of the vast open space. It flared brightly and the glare against the walls made the captain start. He whirled in his chair. Then his eyes widened. His mouth dropped open.

The light was fading, and as it faded the ghost in the middle of the ex-armoury grew solid. Noises came from it, which became louder and more real. Then the light died

away completely and there was a huge thing of entirely substantial steel plates at rest. Huge steel screws beneath it turned for a space, and wooden planks splintered and cracked. Then all was still.

Dazedly, blankly like an automaton, the army captain got up and walked stiffly toward the thing that had appeared before him. Perhaps he had some wild thought of visitors from another world or another dimension. As a curved steel door clanked open he went rigid. But the figure which stepped out was a man, a tall man with a merciless sort of amusement on his face. He brought up a pistol. He fired it, quite ruthlessly and quite coolly.

The explosion echoed thunderously. It made a drum roll of sound as the echoes played about between the walls and among the rafters. The captain choked and made absurd motions with his hands. He collapsed on the floor.

Then the man from the solidified phantom set to work, very coolly and very swiftly.

When a corporal of the guard detail came in anxiously some few minutes later, he saw a shimmering something sinking through the floor. He thought it was an optical illusion. It made his hair stand on end for an instant, but he forgot it when he saw his commanding officer lying dead on the floor.

He, and the other men of the guard, and later on the local police, too, found no sign of any way by which an assassin could have got into the arsenal. They found the captain stretched on the floor with a bullet in his heart and an expression of blank amazement on his face.

They found a case of loaded hand grenades gone, several light machine guns missing, with drums of ammunition for them, and an assortment of tear gas and a few lethal gas bombs. Also a certain amount of engineers' stores had been taken, notably blocks of compressed gun-cotton intended to be used for demolition purposes.

## IV

Sing Sing prison is forty miles from the Wedgewood Arsenal, and the Mole turned up there at eleven o'clock. Its speed was greater than that performance would indicate however, and it is probable that Durran stopped somewhere to rest and possibly to investigate the Mole's various mechanisms more thoroughly.

It is clear that he had made his plans in detail between four in the afternoon^ when he stole the Mole, and eight at night when he raided the arsenal. To carry out his plans he needed help, and he knew where to get it, and he had to move fast to avoid being outguessed and having his men hidden away from him.

It was a bright, moonlit night. At eleven o'clock the high concrete walls of the prison glowed palely where the moonlight struck them and showed utterly black in shadow. White arc lights glittered within the prison enclosures making a misty white aura above the walls. The cell blocks of course were dark, save where corridors reached to windows and showed the faint illumination within. The lights of Ossining twinkled in the distance, and a river steamer floated upstream out in the middle of the Hudson River.

A guard, pacing the top of the wall, saw a vaguely moving thing outside. It was too dark for him to see it clearly<sup>3</sup> but he watched curiously. Something was moving, past question, but the suspicion of Sing Sing guards is directed always toward the interior, not the outside, of the prison.

The guard could make out only motion. Its line was clear. The guard fixed his eyes upon a whitish stone on the ground and waited for it to be obscured. The moving thing, whatever it was, went smoothly up to that stone. The guard watched.

But the movement continued and it was past the whitish stone, and the stone was not hidden for even an instant. The guard grew doubtful and even more curious. The inexplicable thing was headed straight for the base of the wall. He saw or felt it reach a spot directly below him. Movement continued. Then there wasn't anything there at all. He called to the guard next to him.

'Somethin' funny,' he said uneasily. 'I saw somethin<sup>3</sup> movin', down on the ground, an' then it wasn't there.'

The other guard looked down, but on the inside of the wall, because it is toward the inside that a prison guard bends all his alertness. He searched with his eyes.

'There it is!'

He pointed. From the height of the wall and in the glare of the bright arc lights a misty, phantomlike shape could be seen. But it could be looked through. The floor of the exercise yard was visible below it.

'What the hell!' said the second guard.

'Y'guess we oughta make a report? It looks like a ghost!'

The second guard continued to stare. The phantom swam smoothly across the open space. It reached

the outer wall of a cell block. It vanished, apparently into that wall.

'Gosh!' said the second guard. 'That was a funny thing!'

'What was it? A ghost?'

'Hell, no!' said the second guard, without conviction. 'It was some mist, maybe. A speck of fog or somethin'. Y'want to be kidded to death?'

The first guard did not want to be kidded to death. He returned to his pacing back and forth.

Quietness again. A steamer out of sight on the river hooted dismally. Somewhere a motor car bummed along a distant road. Insects stridulated insistently. The crunch of feet on concrete. The wailing, plaintive cry of some night bird. One minute, two, five, ten minutes, with only such sounds as guards upon a tall concrete wall will normally hear.

Then a single, muted \*pop\* in a cell block. A small sound, but distinctive. Every guard in every watching post heard it and gripped his rifle more tightly. Every man turned to face the sound. Silence. Another muted \*pop\*. Then the sudden snarling roar of a machine gun, unmistakable even though it came from a cell block.

An instant later., there was the shattering concussion of a hand grenade. Glass in the cell block broke out and went tinkling down the stone sides of the building. A neat row of windows gaped glassless into the night. Then a man screamed, a high, shrill scream that was not less horrible from being distant. Another shattering explosion. Yet another.

Guards raced for the building. Then pandemonium broke loose. The guards on the wall stayed there. It was their job to check a break, if one came, on the outer defences. But they saw running men with rifles make for the cell block. They heard shouts, yells, howlings of terror and of exultation alike. The cell building became a madhouse.

And then a series of detonations began which were thunderous in intensity and deliberate in spacing, suggesting an inhumanly cold-blooded destructiveness at work. After each explosion came screams.

Then the men on the wall saw a phantom come out of the cell building. It was feet above the level of the exercise yard. It was unsubstantial and unreal. It was the wraith of a nightmare.

Shimmering, ghostly, impossible, it careened out of the wall and toppled to the ground. It seemed to bury itself- if a ghost can bury itself - before it came slowly into view again.

Not one shot was fired at it. It was impossible. It was a figment of the imagination. It simply could not be.

The phantom swam across the exercise yard of Sing Sing prison. It moved steadily toward the massive, monstrous outer wall of the prison. It reached that wall. It went into it. It vanished.

The guard who had first sensed movement outside now looked down again, shivering a little. He would not have known what the phantom of the Mole was, even if he could have seen it clearly.

But he saw nothing. He did sense that something was moving down on the ground below him, but that was all. A vague stirring moved soundlessly away from the prison walls and vanished into darkness. He

did not shoot at it because he saw nothing to shoot at.

That was his story after the whole disturbance was ended, and he stuck to it. He wasn't believed, of course. There were four prisoners missing, twenty or thirty injured by explosions, three guards dead and others hurt, and nearly one floor of the northeast cell block so badly wrecked as practically to be destroyed. A guard who said he saw something moving, but nothing to shoot at, was not telling a plausible story. Four men, escaping, should have made a magnificent target in the arc-lighted exercise yard.

It was not until the next day that a reasonable two was put to an incredible two and an inevitable four was arrived at. The missing prisoners were pals of Durran's. The phantom seen by the guards, the explosives, the destruction, told all.

Taken with the raid on the Wedgewood Arsenal, the uproar at Sing Sing made it perfectly clear that Durran, in the Mole, was a criminal with an unparalleled opportunity to gratify his every impulse. And it seemed likely that he intended to use his opportunity.

For the next three days there was no word of Durran or the Mole or any of the four men he had raided Sing Sing to release.

Something had been pieced together of what he did, of course. On the fifth, a radio store in Newburgh, New York, was looted of practically all its material for radio repairs, wire, tubes, sockets, transformers, batteries - everything that goes into the making of a radio receiver was stolen. That same night, too, fancy groceries in considerable quantity were taken from the town's most expensive food shop.

Next day, on the 18th, police surveillance of the women formerly beloved by the released prisoners came to an abrupt end. The women vanished. From sheer habit the police instituted the customary search to find out who had taken them away from their usual haunts. They discovered nothing.

It is reasonable to assume that the first two thefts, of radio parts and food, were preparatory moves by Durran. The removal of the women was a part of the process of making the released prisoners contented.

Meanwhile Durran seems to have used all his intelligence in the examination of the Mole, and on the 19th he was probably busy. Certainly on the 20th he was prepared for action on a larger scale than before.

At nine thirty that night a thunderous, clanging uproar broke out in Newburgh. The outdoor alarm gong of the First National Bank went off with a tremendous noise. Simultaneously, the local police station received due warning of prowlers at work inside the bank. It was not a large bank, but even the little ones have more than one burglar-alarm system installed nowadays.

In less than five minutes from the sounding of the alarm, a patrol load of cops was on hand, prepared to do battle with bank robbers. The bank doors were closed and locked. They were opened from inside by a scared and bewildered watchman. He had heard the gongs, too. His own telltale registered a disturbance. But he could find no sign of anything wrong.

Then bank officials tore up in a motor car. A third alarm system had reported disturbance to the home of the cashier. They crowded into the bank, to be faced by puzzled cops and nearly deafened by the insistent, frantic clanging of the alarm gong outside.

Somebody managed to turn off the gong. It looked as if a freak accident had set off every protective

device at once. The cops were rather sheepish, standing embattled in the bank with absolutely nothing to do. But there could be nothing wrong.

The vault was closed and locked and obviously untouched. There were no thieves to rout, it seemed, so the question became that of discovering and correcting the flaw in all the protective devices. The bank suddenly gleamed light everywhere. A master switch turned on every light in the place.

Then they saw the Mole. It was quite stationary. It was a huge, shimmering phantom, its bow end lost in the metal of the vault. Its tail, also, vanished into the side wall of the bank building. Standing still as it was, it could be examined with some detail, and presently it was observed that the four huge, vertical screws turned lazily, maintaining its position in spite of the gravity pull which tried to drag it down to the centre of the earth.

Men shot at it. The bullets went harmlessly through. They hacked at it with fire axes from a case on the wall. The blows spent themselves on seemingly empty air. The men drew back, regarding the earth-ship helplessly. Then a minor official of the bank, desperately daring, plunged first his hand and then his whole body into the phantom.

He could feel no resistance to his movements. The Mole remained as transparent and as unsubstantial as before. But, from within, he could see wraiths about him - machinery like gossamer, even men, like ghosts.

One of those ghosts saw him and pointed at him. Another ghost rocked back and forth, laughing, and the bank clerk was tormented by the suspicion that he heard a whispering thread of that Homeric laughter. Then one of the ghosts made an elaborate, mocking gesture of lifting a phantom cap in greeting.

A roar of rage brought the clerk out of the phantom. Somebody had thought to put his ear to the vault. And there was movement within. Through the steel walls came thumpings, crashings, bumps. There were men at work within the monstrous sealed safe - methodical hangings, deliberate, purposeful thuds and clanks.

'They're looting it!' panted the president of the bank, purple with rage. 'Looting it! And the time lock's on, and we can't get in!'

Something like a dozen armed policemen and half a dozen bank officials stood helplessly by, hearing the sounds from within the vault. They went on for half an hour. Then the Mole backed comfortably out of the vault wall, a ghost in being, went through the side wall of the bank, and swam off into the utter unreachability of its peculiar state of existence.

When the time locks permitted the vault to be opened, the worst fears of the bank's officers were realized. The contents of the vault had been leisurely sorted over. Currency, negotiable bonds, the contents of the safe-deposit boxes - everything was gone. And the furnishings of the vault were wreckage.

They went to Jack Hill next morning and found him haggard from four days and nights of work to cope with the catastrophe whose ultimate possibilities he foresaw. He was in the machine shop of the American Electronic laboratories again.

Gail Kennedy was with him, trying to persuade him to stop and rest. The visitors were an impressive lot. Police officials, banking potentates, and representatives of liability insurance companies. They regarded Jack with profound hostility.

'Mr. Hill,' said an eminent banker, in a voice that quivered with indignation, 'I suppose you realize what you have done?'

'Thoroughly!'

'Now what are you going to do about it? Every bank in the country is at the mercy of this Durran, through the hellish contrivance you made. No man's property is safe.'

'Rather more important,' observed Jack, 'no man's life is safe, either, if Durran wants to kill him.'

'But how can this menace, this pirate, be handled?' Again the eminent banker spoke. As if of old habit, his voice took on an oratorical intonation. 'When the arsenals of our government furnish him with explosives, our prisons with men, and the devil with ideas -'

'Oh, it's bad,' said Jack, 'It's very bad. But I'm working now to stop it. I'd like to know if he's changed the Mole about any, though. What's he done?'

They told him about the Newburgh robbery - more than fifty thousand dollars in currency gone, the contents of the safe deposit boxes -

'That doesn't help me!' insisted Jack. 'The Mole is pretty big. As I built it, that robbery would have been impossible. It couldn't be materialized inside a bank vault. There'd be no room.'

So far they'd told him only the results of the robbery. Now they told him the details of their helplessness while it went on.

Jack nodded in satisfaction. 'I see! He's improved the ship. But for those screws you saw revolve, the Mole would drop straight through the earth to its centre, as a block of brass did here. And, of course, if a man stepped out of the Mole while it was dematerialized, he'd drop too, without some device to hold him up.'

There were protests that men had been heard at work inside the vault.

'I know,' agreed Jack. 'But they weren't phantoms! Durran has fitted up an extra force-field apparatus. He can materialize a part of the Mole without materializing the whole. He drove the ship so its bow stuck out into clear space inside the vault. Then he materialized that part, and that part only.

'There were a couple of men in it. They got out, gathered up their loot, and stored it in that part of the ship, and then Durran dematerialized that part again so that it was like the rest of the ship. And then he swam away.'

'But what can we do to stop this - this ghastly performance?' demanded the banker agitatedly. 'He can rob any bank in the country! He can steal any treasure, any security, any record!'

'You can hide your treasures,' replied Jack meditatively. 'Until he starts kidnapping people and forcing them to tell where valuables are, he'll be stopped. And - well - the screws of the ship are coated with a thin film of thorium alloy. That is partly real in both states of existence. You can make bullets and bombs of radioactive substances. Anything that's radioactive will find the Mole substantial. You can puncture it with radioactive bullets or shatter it with bomb fragments, if they happen to be radioactive, too.'



'You suggest,' said the banker in almost hysterical indignation, 'that we shoot Durran with radium bullets? Think of the cost!'

'It's more important to think of results, just now,' said Jack dryly. 'But thorium will do instead of radium, and that isn't too expensive to use in gas mantles. It'll be cheap enough.'

'I have, though, one really comforting thing to tell you. The Mole was built for underground exploration, to find veins of mineral and for geological study generally. It isn't designed for the use to which Durran is putting it.'

'And the entire resources of American Electric are now put into the building of a new Mole which will be designed for offensive warfare underground. As soon as our new ship is complete - and it should not be long, working as we are -we'll find the original Mole and destroy it.'

Gail Kennedy said something to him in a low tone.

Jack nodded wearily. 'Something to keep Durran from materializing his ship even in part? Why, yes! My head's tired, Gail. I should have thought of that.'

He turned to the others. 'I have one promising suggestion, due to Miss Kennedy. I've proved that two solid bodies can occupy the same space at the same time. But they can't, in the same state. If there is any matter more solid than air where the Mole materializes, the sudden appearance of extra material in the same space will cause an explosion. So you can stack bars of iron, and grilles, and string wires inside your vaults. Make it impossible for any part of the Mole big enough to hold a man and loot to materialize without including some such extra matter. If Durran tries, he'll blow up the Mole! It's worth trying, anyhow.'

He passed his hand wearily over his forehead when the indignation party went out of the laboratory. Gail smiled anxiously up at him.

'I was stupid,' said Jack tiredly. 'I guess you're right, Gail. The new ship is taking form very nicely. The others can carry on without me. And my head's so tired I'll do better work if I rest.'

Jack took a last look at the partly completed ship that was to take the place of the Mole, in the very spot where the Mole had been. There was a great deal yet to be done to this new ship, but to Jack it already looked promising. He saw past the incomplete framing, the only partly assembled machinery. He visualized the streamlined vessel of the new design, more heavily powered than the Mole.

Its sustaining screws worked on swivels and at full speed would not only sustain but help to propel it. And there was armament. A two-pounder gun with a spotter searchlight. When this ship was dematerialized, it would fire shells that would be utterly unsubstantial to anything but the Mole or radioactive minerals.

The spotter searchlight would emit extraordinarily polarized light, capable of penetrating stone and rock in the state of matter Jack had discovered. This ship should have no trouble overtaking and destroying the Mole.

'Funny,' said Jack suddenly. 'I never thought of it before. This ship's going to be fast. And we could build faster ones yet. Planes, in fact. Earth-planes! They'd carry passengers. No storms. No wind currents. Earth-plane ports in the centre of our biggest cities. Climb in an earth-plane and fly through the earth's core, beneath or through mountains and oceans. And they'd be fast!'

Gail smiled at him. 'Good! You think about that instead of Durran for a while. But I'm going to take you home and make you go to sleep.'

She did take him home. She made him promise to rest at once. But, tired as he was, this new vision of a medium in which the commerce of the world would be carried on in the future, kept him awake for a long time.

It seemed that Jack had just dropped off to sleep when the strident ringing of a telephone beside his bed got him heavily awake. He glanced at a clock. It was after midnight - one o'clock. He picked up the phone.

'Hello?'

'Mr. Hill!' panted a voice at the other end of the wire. 'This's the gate watchman at the lab. There's all hell loose inside! Explosions! I sent for the cops, but it sounds like Durran's back! Listen!'

Over the wire came dull concussions. Then, the extraordinarily distinct sound of running feet, a slamming door. A voice panted, and Jack caught the message before the watchman repeated it:

"The Mole's in there an' Durran is flinging bombs outta a tube in front. They turn to real as they come out. He's blown the new Mole to hell an' he's smashin' the lab!"

A terrific detonation seemed almost to smash the telephone instrument at the other end of the wire.

## VI

It was stupidity, of course, that caused the destruction of the American Electric experimental laboratories. Durran made a thorough job of it. It seems that he stopped at a construction job in Schenectady and looted the powder house of explosives to have plenty for his purpose. And it is quite certain how he came to know of the need to blow up the laboratory.

Within an hour after Jack had reassured the committee of bankers and police officials, the newspapers had the whole story. To Jack the need of secrecy was so self evident that he had not thought of mentioning it. But to a banker the self evident necessity was to reassure the public so there would be no runs on banks.

To police officials the self evident necessity was to make a public statement meaning that they had a clue and an arrest would follow shortly. To the newspapers and the broadcasters there was no thought of anything but hot news, to be passed on at once.

In consequence, Jack's assurance and his description of a ship being built to hunt down and destroy the Mole was given to the whole world. And with the world it went to Durran, too.

He acted immediately. He destroyed the laboratory where the Nemesis of the Mole was preparing. And he did more. When Jack got to the scene of the disaster, fire roared among the ruins. The new ship was scrap iron. And plans, apparatus, formulas, everything the laboratories had contained, were gone.

Gail ran up to him as he surveyed the wreckage. 'I'm so sorry, Jack!'

'It is pretty,' returned Jack sardonically. 'Those damned fools had to tip Durran to everything! And he'll be on the lookout now. My guess is that he'll try to bump me off, because with everything in the lab in flames, I'm the only one with all the stuff in my head to make another Mole possible. We've got to start building another one in secrecy. Better, half a dozen of them. He won't be able to destroy all of them before one's finished.'

Gail's father came up, scowling. 'This costs American Electric better than a million,' he said bitterly.

'I'll give it back to you,' said Jack harshly. 'Listen to me!'

Swiftly, tersely, he talked of a new transportation system which would be faster and safer than any the world had ever known before, and wholly independent of weather or storms. 'And if that doesn't make up for the damage,' he added savagely, 'here's another: We dig shafts for mines, now. We send men down underground. But Durran's found a way to materialise a part of the Mole while leaving the rest a phantom. If he can do that, so can we, and the other way about too. 'Why can't we lower a tank with a field of force in it? Dematerialize it and lower it through rock and stone to an ore bed as deep as we want to go - ten miles if necessary ? Then turn on the field force to dematerialize the ore that's inside that tank.

'The ore, being made phantom to the rest of the world, will be actual to the tank. And we can haul tank and ore up to the surface as easily as they'd drop to the centre of the earth. Once above ground we rematerialize both.'

Kennedy stared. Then his eyes flared triumphantly. 'That does it! You win, Jack! No matter how much damage Durran does, that one trick pays for it and more besides.'

Then Gail Kennedy screamed. A ghostly something - eerie and unbelievable in the red firelight - moved toward them. 'The Mole!'

In one instant Jack had Gail up in his arms. He sprinted toward the Mole. He had seen a curious ring of solidity, upheld in mid-air, silhouetted against the blazing laboratory. And that would be the tube he'd heard about, through which bombs were dropped to become 'real' as they emerged.

Jack plunged past that bomb tube and the ghostly Mole. Once past. Durran would have to turn the earth-ship to bring the tube to bear, and that would take time. In a straightaway pursuit it could run him down on foot. But now it -

A hand grenade went off behind him. Earth spattered him. Something stung his leg, numbing it. Warm stuff flowed down it. Then he was at a car. He flung Gail inside, jammed on the starter, and jerked it into first. The phantom of the Mole was turning. It came toward him again. And he shot away at forty-five miles an hour which became fifty and then sixty as he got on to a dear straight road.

'Your father,' said Jack coolly, as he pushed the car to a higher speed yet, 'may think I'm a coward. But Durran has destroyed nearly or quite every record of how the Mole was built. I'm the only man who can build another force-field generator without those destroyed drawings and figures. I simply have to save

that knowledge until I can get it down on paper.'

Then Gail said in a rather choked voice: 'I'm wondering about my father.'

For answer, Jack swung right, left, right again. He drew to a stop before a drug store. He called the gate watchman at the laboratory from the phone booth. In seconds, Gail was talking to her father.

'He says you did the right thing,' she reported an instant later. 'Durran did intend to get you. But - my father thinks that if he saw that you picked me up, he may think that the best way to handle you is to be able to threaten me. So I'm forbidden to go home. Dad's going to get a fast car and meet us. He's going to send me away. You, too, most likely. You're important.'

Jack grunted. 'Where do we meet your father ?' he demanded.

When she told him, he swung the car and headed that way.

They were three hundred miles away by dawn, and Jack flung himself headlong into the tedious, exacting work of drafting new plans from memory, building a new force-field generator also from memory, and of necessity for its construction determining all over again the constants needed for the calculation of certain of its parts.

He barely took time to eat and sleep, but in seven days he was ready to install new force-field generators as fast as they could be built in the new and faster earth-ships already taking shape in a dozen widely separated machine shops.

Three of those days were taken up by the need to repeat work already done, the results of which had been destroyed with the American Electric laboratory.

During that week, however, Durran progressed from the status of front-page news to a point where he was practically all the news there was. For one day after the American Electric fire, there was no report of his activity anywhere.

No authentic report, that is. A hysterical public reported the presence of the Mole from something like one hundred and fifty different points within a three-hundred-mile radius of its last appearance, and declared Durran busy at crimes ranging from the setting of forest fires and wholesale kidnappings to the robbery of a chicken coop in East Orange, New Jersey.

Actually Durran was still trying to reach and kill Jack Hill, as his solitary dangerous opponent. He had materialized a part of the Mole in the cellar of the house next to Jack's home. He hoped that Jack would return to his home, if only momentarily, to secure personal possessions or records. With the Mole part phantom and part real in the cellar of the house next door, his followers seized and bound and gagged the occupants of that house and watched comfortably for Jack's return.

He did not appear, though Durran waited for him for twelve hours. At the end of that time he took on board the men who had been watching, dematerialized the Mole, and moved away. But he left an incendiary bomb under Jack's house, and the firemen who vainly fought the blaze it started discovered the helplessness and the sufferings of the people next door.

Then the Mole began its career - the part for which it is remembered, at any rate. At dawn it was sighted in Troy, crawling deliberately out of a national bank building. A policeman shot at it and blew his whistle frantically. It swam indifferently for two blocks along the trolley tracks of Troy's main street.

While twenty police made frantic, helpless gestures, it crawled into another bank. It remained there for half an hour, its blunt nose thrust through the solid metal of a vault and its sustaining screws turning lazily. Then it sank abruptly into the ground. Its exit from town was unobserved. Both banks were looted.

At nine o'clock the Merchants' National Bank in Albany was open for business. There were a few more than the normal number of customers inside. The Mole swam through the walls and came into view. A stenographer saw it and screamed. There was a sudden glow of eerie whitish light at its snout.

A round ring of solid matter appeared, incredibly floating in mid-air at the forefront of a monster which seemed made of the most tenuous of fog. Something hard and round and quite solid dribbled out of that ring. It fell to the floor and exploded into a blinding haze of tear gas. More flares of eerie whitish light. More solidity appeared. Men got out and worked swiftly.

Police charged in from the street and were met by machine-gun fire. A hand grenade followed. The list of dead and injured was horrifying. Presently the Mole swam deliberately out into the street. It passed through a trolley-car, in which women fainted. It turned into the town's greatest jewellery store. Another tear-gas bomb. Ten minutes, and it came out again. Crowds swarmed about the scene of excitement. The Mole insolently moved upon and through the helpless police.

And in Albany Durran or one of his men committed a wholly causeless atrocity. A hand grenade dropped from the solidifying ring where the crowd was thickest. There was no reason or excuse for it. The hospitals of Albany were crowded with injured, alike those directly mangled by the grenade and in the panic which followed its explosion.

The Mole went on, insolently and deliberately looting bank after bank before the eyes of the police. There was no defence against it. Treasure locked in the bank vaults was but made more convenient for Durran's men. Left elsewhere, they drove out or blinded would-be defenders with tear-gas and machine-gun fire, with hand grenades always in reserve.

The Mole stayed two hours and a half in Albany. Its loot was something over three-quarters of a million dollars.

It reached Poughkeepsie at dusk. But here it was expected. A radium paint concern supplied the police with radioactive material. Daubed on bullets, the paint did all that Jack Hill had promised. A storm of paint-smeared lead poured upon the misty monster at its first sighting. Direct hits, instead of going harmlessly through a phantom, seemed to encounter resistance. Some punctured the nearly invisible steel plates when fired at sufficiently close range. Glancing hits - glanced. Several police were injured by ricochets.

The Mole dived at the first sign of injury. In seconds its shimmering, unreal rounded back was sinking into the pavement, which stopped what bullets seemed to penetrate rather than pass harmlessly through its impalpable armour. Rather quaintly, too, the painted bullets seemed likely to be effective in an unexpected way.

Once having punctured the Mole's hull, it was of course as difficult for them to get out as to get in. And they were 'real' in both the actual world and the strange universe of the Mole. They caught at once in the pavement and the hull and prevented the Mole from sinking out of sight. For minutes, the Mole seemed to be held fast. Then a terrific explosion underground flung up the street. A second, a third.

Otherwise unable to escape, Durran had materialized high explosives in the solid earth and set them off.

He blasted away the roadway in which the bullets were caught. They undoubtedly remained inside the hull, but when no longer held fast by real matter, they could be gathered up and thrown outside one of the Mole's phantom ports. The Mole went on, still underground.

For a time, despite the terrific losses from those blasts, the police of Poughkeepsie were almost jubilant. Remembering Jack Hill's statement that violent explosions would come of the materialization of one solid body inside of another, it was thought that the explosions came from some such occurrence.

But they were undeceived. A quarter of a mile away, the earth heaved up. Further, it heaved up again. Durran took a terrible revenge for the attempt at resistance. When he left Poughkeepsie the shattered rains behind him were a guarantee that no other city would ever attempt the use of radioactive bullets against the Mole. The casualty list in Poughkeepsie was six times as large as that in Albany. It shocked the world.

Next day, the Mole made no foray. And it was a strange fact that since the complete ruthlessness of the earth-ship's crew had been demonstrated, fewer hysterical reports of its presence were made. At first, perhaps, those who fancied they saw it made haste to tell the police in hopes of its capture. Now, they simply fled. But there is no verified report of any activity on Durran's part the day after the Poughkeepsie tragedy.

The day after, it struck Peekskill and Yonkers. It was plainly heading for New York and such an orgy of looting as no five men in the world had ever before engaged in. Another day of peace.

Then it invaded Brooklyn by way of Harlem, evidently passing under the East River in its progress. A night and day of wholesale looting, with the police standing helplessly by and as their only effort at defence preventing crowds from gathering where they could be slaughtered.

That was an ironic touch; that the police were so far from being able to counter Durran's criminal actions that the utmost they could do was prevent him from being annoyed while engaged in robbery.

New York was still untouched. And then, after a day and a night of looting in Brooklyn, the motorman of a rush-hour Brooklyn subway express, slowing to a block signal in a tube under the river, saw the phantom, impossible apparition of the Mole lying across the tunnel. The only solid thing about it was the materializing tube Durran had invented and installed.

The motorman jammed on the air brakes and the cars behind him rilled with noise as the standing passengers piled up in heaps. Then something came out of the round ring of solidity held upright by the phantom Mole. Something which looked white and flat, with a long ribbon attached to it. A light glowed in the materializing ring and shone down upon the dropped object. It was an envelope, a letter.

A guard, his teeth chattering, climbed out of the front door and picked it up. It was addressed to the mayor of Greater New York. Shivering, he climbed back into the subway train.

The Mole stirred. The motorman and those crowded to the front windows of the train could see through it, beyond it. A round thing dribbled out of the materializing tube and fell between the rails. Then there was a little flare of eerie light and the materializing tube vanished. The Mole swam serenely away through the solid walls of the tunnel. It was lost in the unexplored solidity beneath the bed of the river.

Then the round thing on the track flashed up. Tear gas filled all the tunnel. But the subway train had to go forward. It could not go back. Filled with blinded, hysterical passengers, it pulled into the first station on the Brooklyn side and its motorman made a ragged stop, judging only by the glare that a station was at

hand.

The newspapers published extras, after that. The letter was a bland communication from Durran. He was holding New York to ransom. He would smash the subways and bridges, blast down the tall buildings by planting explosives at their bases, and wreck the water and power supply of the city if his terms were not met. And his terms were staggering. He gave the city forty-eight hours in which to agree to them. And as if to give point to his threat, within an hour an alarm came from the Brooklyn Navy Yard. The Mole was there. When it left, it had seized enough high explosives to blast down half of New York.

It was not especially comforting to receive a reassuring broadcast from the American Electric Co. saying that a full dozen earth-ships, each faster, more powerful, and more heavily armed than the original Mole, would be completed in ten days more. In that ten days, Durran would have ruined the city.

## VII

Of course they sent for Jack Hill. In the governor's mansion at Albany he met with the mayor of New York City, the governor of the State, and an array of financial and industrial magnates who would have been impressive if they had not been so thoroughly panic-stricken.

Gail Kennedy was there, too. She'd insisted on coming back with Jack, and she and her father - now backing Jack strongly - provided moral support for him in the atmosphere of embittered hatred that filled the meeting.

'This is your fault!' said the mayor of New York furiously. The American Electric Co. financed the highly unwise experiments which have led to this grave menace to our commonwealth, but you built the piratical craft which now holds -'

Jack interrupted gently: 'You're talking nonsense. It may be good politics, but it's poor policy. Do you want to know what you ought to do?'

'That is what we have come here for. How far are we going to avoid meeting these impossible terms Durran imposes on our city?'

'Don't,' said Jack dryly. 'Pay him. You'll get it back.'

'How?'

'He can store only so much in the Mole,' replied Jack more dryly still. 'Even bank notes and bullion. As a matter of fact, bullion costs him money to carry around. My guess is that he's cached most of his loot, already. And my further guess is that the sweethearts of his four men have a pretty good idea where that cache is. When Durran and his men are killed - as they will be - those four women will spend some of it before they're caught, but not particularly much. Meanwhile, we gain time until the new earth-ships are

finished.'

'But - millions and millions -' gasped a prominent banker.

'I have a suggestion to make,' said Jack gently, 'about the payment of that money. I will not make it in this mob' - even in such an emergency a rustle of indignation, a bristling, passed about the assembly - 'because I told an equally eminent group, some days ago, about a ship under construction to destroy the Mole. With really superlative fatheadedness, they told the world and consequently Durran. That ship was promptly blown up. So since you gentlemen can't be trusted to hold your tongues, I'll keep my own counsel until you've decided to meet Durran's terms. Then I'll communicate a suggestion to the person in charge of that payment. Not before!'

His idea was, of course, that bullion and even paper money could be so impregnated with radioactive material that when once taken on board the Mole it could not be moved through solidity and would expose the Mole to attack. A duplication, on a larger scale, of the incident of the radioactive bullets in Poughkeepsie.

'I might even,' Jack added sardonically, 'say that it's very possible that Durran knows where this meeting is taking place. If he does, and can make it here in time, we may be in a bad fix, anyhow, you and I and all of us.'

He swept his eyes about the gathering. Some of the faces looked frightened some looked indignant, but none looked guilty. Jack felt reassured, which was a mistake. He did not realize that the sort of man who blabs a secret never feels guilty for having blabbed it. He feels only frightened, sometimes, for fear that it may be found out he has blabbed.

And Jack did not quite realize how many men have their price. Bribery is of no service in scientific research, and Jack's mind simply did not work in a fashion to understand it either as a method or a temptation.

'But do you realize that we're at the mercy of a pirate?' wailed a prominent Wall Street banker. 'Every cent -'

'With the warning you've had,' Jack broke in, 'I rather suspect you've shipped most of your valuables out of the city. At a guess, Durran's been in a couple of bank vaults and found them practically empty. Hence this holdup.'

'Of course!' snapped the mayor of New York. 'Most of the cash in New York has been shipped out. Most of the particularly valuable jewels, too. Even nine-tenths of the art treasures have gone!'

'Then there's nothing to be done -'

There was an indescribable noise outside - a strangled squawk, as if somebody saw something utterly terrifying. A lesser politician turned a ghastly white. Then something came through the door. The door was closed, but the Thing came through it. And suddenly whitish light flared, and a round ring appeared in mid-air.

The gathering of eminent figures in finance and politics became a howling, panic-stricken mob. A rush of fear-crazed men bowled Jack over. He struck out savagely and was on his feet again as something flashed from the floor. Jack fought ruthlessly, lifting Gail above a crazy tangle of struggling bodies. He thrust her feet first through a window to the terrace outside.



'Go on!' he snapped. 'Get in a car and speed!'

'Come with me! Quick!' she cried.

But he looked about him anxiously. He saw Gail's father plunge through the phantom body of the Mole; in its misty interior open the door of the conference room, and rush through to safety. Then swirling gas from the exploded bomb obliterated all sight.

Howls of pure panic arose about him. And Jack forced his way blindly through the window that had meant safety for Gail and tried to fumble his own way to some car with an unblinded driver. A horde of sightless, squealing men babbled and pushed. Crowded together, they had been bad enough. Opened out, now, they ran with flailing arms, hysterical with pure panic.

A fat man bumped against Jack, flinging him to one side. Somebody else struck crazily at him, and someone careened heavily into him, and he gave ground. Then, abruptly, there was something hard and unyielding against his knees, and he toppled over.

He fell perhaps eight feet, down from the terrace outside the windows of the governor's mansion. Branches lashed at him, and then he hit something incredibly hard and solid. He felt a terrific blow on his head.

A long time later, it seemed, Jack heard the purring of machinery. He heard Gail's voice, urgent and resolute. Somebody picked him up. The noise of machinery grew louder. It roared close beside him. He felt a swimming motion.

Then, as he stirred vaguely, something hit him again, and he passed into blank unconsciousness.

When Jack opened his eyes again the noise of machinery still went on. There was again the sensation of swimming, of a gentle rocking from side to side. His head ached intolerably. Then his eyes cleared.

He was inside the Mole. His hands and feet were tied fast. Durran grinned at him. A rat-faced man with a convict's shaven poll was at the controls. Two others were in sight about the engine. But worst of all was the sight of Gail, very white, sitting in a crowded corner of the Mole and staring at vacancy.

## VIII

Through the windows of the Mole the outside world could be seen. One glance, and Jack knew. A strange, harsh, reddish light outlined tall and unsubstantial columns reaching up to a roof of shadows. The columns rose from a cloudy, soft-seeming vapour underfoot. Over all and through all the reddish light showed.

The Mole swam on, and the columns swept slowly past, immobile despite their near transparency. There

was no sound from without. The thudding rumble of the gasoline engine; the whine of the dynamo and the separate driving motors -that was all. There was not even a noise as of a water wash against the hull of the earth-ship. It swam on through an eerie, a phantom world - and it was almost impossible to believe.

Shadows even passed through the interior, through all its moving parts, through the human beings within it. They paid no heed. Those shadows were tree trunks, impalpable to the dematerialized state of the Mole as it was impalpable to the normal world.

Durran grinned and said: 'You're a very lucky young man.'

Jack opened his lips and closed them.

'I said,' repeated Durran amusedly, 'you're a very lucky young man. You're alive.'

'I hardly imagine,' returned Jack evenly, 'that I'll be alive very long.'

'It wasn't my intention to allow it,' conceded Durran. A mocking light danced in his eyes. 'Miss Kennedy persuaded me otherwise. You are very fortunate to have so charming a girl so - shall I say, loyal to you?' He chuckled.

Jack was working on his bonds. Hopeless! They had been tied by someone who knew how.

'You want to know,' he said slowly, 'where the other earth-ships are being built to destroy you. That's why you brought me in the Mole instead of simply shooting me.'

'You guess,' said Durran, 'with remarkable accuracy.'

'Set her free,' said Jack grimly, 'and I'll tell you where they are. Otherwise you can go to hell! There's no power on earth that could make me tell while she's a prisoner.'

'I disagree,' said Durran. Again his eyes mocked. 'I think we could make you tell us anything. There are - er - methods. But I shan't try. I promised Miss Kennedy.'

Jack's eyes turned to (Jail. She stood up and came over to him, bracing herself against the swaying movements of the Mole. She was silent for a moment. Then:

'I told him, Jack,' she said quietly. 'I - I wasn't blinded by the gas. You told me to run, but I - I waited to be sure you were safe. You - didn't come outside. I didn't see you, anyway. So I started to go back to find you. And the Mole swam out and materialized on the lawn. I hid. Then I saw two men get out and pick you up. I recognized you. And I ran -'

'She tried to fight us,' put in Durran blandly. 'And I recognized her, in turn. I had her showed inside the Mole, and of course we brought you in. We were very busy just about then, because there were police running to shoot at us. You were unconscious. I dematerialized the Mole and started to navigate away. And Miss Kennedy had picked up a hand grenade and swore she'd pull the pin and blow the lot of us to smithereens unless we released you at once.'

Again Jack's eyes turned upon Grail. 'Good girl!' he said grimly. 'I'm almost sorry that you didn't go through with it.'

'It was a stalemate,' said Durran as blandly as before. 'Because, as I pointed out, she'd do you no good

by blowing us all up. Finally we compromised. I promised to release you, unharmed, but not her, if she'd put down the grenade, and if she told me where the other earth-ships are being built.'

'Jack, I - I had to! Don't you see? He promised to - only hold me for ransom.'

Durran nodded. 'That's all,' he said comfortably. 'You, Hill, will be allowed to leave the ship in ten minutes more. In fact, I'll insist on it.'

Jack searched his face. The mockery, the unholy amusement in his eyes, denied the promise of safety. There was no doubting that.

'Do you mean,' he asked harshly, 'you're going to re-materialize the ship and put me out on solid ground, or do you mean you're going to toss me out of the door into that?'

He nodded to the vapourous, unreal cloudiness which was the earth to those within the Mole.

'No!' said Gail quickly. 'He was laughing when he promised to let you out. I made him swear he didn't mean to put you out of the ship so you'd - drop down to the centre of the earth. He said you'd stay on top, all right.'

Durran laughed again.

'Well?' snapped Jack. 'What's the catch? And I tell you, Durran, no ransom you can get for her is as big as the one I can give you, of information you need! You turn her loose instead of me-'

'I'll let you decide,' said Durran blandly. 'You see, Hill, you gave advice on how to keep me from looting bank vaults by putting bars of iron about so I couldn't materialize any part of the Mole in a vault without including a bar and so blowing up the ship. The fools haven't taken your advice, but I thought they would.'

'So I prepared for it.'

'How?'

'I made a field-of-force generator a man could carry into a vault, dodging those bars. He could dematerialize anything I wanted and bring it back without materializing the Mole inside at all and even without the Mole's entering it. It's a good trick. I can take things out of a drawer or the smallest safe, now. A neat answer to your suggestion. My men can walk about and pick up anything they want.'

Again Jack nodded grimly at the cloudlike earth. 'No man can walk about on that.'

'Oh, yes, a man can! You'll see! The same trick as the sustaining screws that hold this ship up, a thin coating of thorium. I made snowshoes, my dear fellow, on the same principle. Frames covered with cloth, which is painted with radioactive paint. We are going to get a pair of those snow-shoes for you. Earth-shoes would be a better name. With them upon your feet you can walk wherever you like. You can assuredly stay on top of the ground, even in your present state of dematerialization. Take my word for it - you can!'

Jack's eyes burned.

Gail stared, and then cried desperately: 'But - but you're cheating! He'd starve! And - and only as long as he kept moving. You're cheating! You'd be killing him as surely and - more horribly than if you just

flung him out to drop.'

'But,' said Durran, and chuckled, 'I am holding to the strict letter of my bargain. I confess it seems to me an excellent joke. You have five minutes more, Hill, before you begin your interesting walk, unless you wish Miss Kennedy to have that freedom instead. How about it?'

Jack said grimly: 'Supposing you observe the proprieties and let a condemned man have a little indulgence. I want to talk to Gail. Clear out!'

Again Durran chuckled. 'And I'll do even that, instead of spending my time making just complaints about the manner in which you constructed the ship for me. My dear Hill, do you know that it is necessary to run the sustaining screws ten revolutions a minute faster than at the beginning? Why is that?'

'Repeated dematerializations,' snapped Jack. 'Clear out!'

He waited, his jaw set. Durran moved away, amused. It could not matter what Jack and Gail might say to each other. In five minutes more, Jack would be more utterly alone and more irrevocably doomed than any other man since time began. And Gail would remain in the Mole.

The cloudy shapes in the harsh red light without came to an end. The shadow of a house appeared, and beyond it a low and level mist more tenuous than that of earth. It would be the water of a lake.

The Mole swam smoothly up to the house. Then it seemed to glow in every particle with a strange white light, which gradually diminished and died. And as it diminished, the world without became more solid. When it ended, the shadow house became a bungalow. The cloudy earth was covered with green grass. The light was vastly brighter. And this normal, natural world looked infinitely desirable.

The rat-faced man got out of the ship and went casually into the house. Squeals of delight came out. Women appeared, five of them. And they were pretty women, in their fashion. But Jack looked from them to Gail and ground his teeth. The sight was too bitter.

The rat-faced man came back, carrying two cloth-covered frames which were nothing more or less than snowshoes of entirely familiar pattern, with painted canvas stoutly sewed to the rawhide webbing. He had told the women something. They laughed shrilly. He came into the Mole again. Again the flash of eerie, whitish light. The Mole swam on smoothly.

And then Durran threw a switch and reversed the tail screw. The moving procession of shadows in a world of harsh red light slowed down and stopped.

Durran opened the door of the Mole. 'And now I keep my promise,' he said blandly. 'You are free to go. In fact, if you don't go you'll be thrown out.'

Two men kept guns trained upon Jack as a third cut loose his hands. He put on the strange devices for walking in a world which was all vapour, all shadows, without substance or reality. To fight was not only hopeless, it would please Durran. And Jack had no hope, but he would not admit it. He pretended a confidence he did not feel, simply to make things easier for Gail.

'I'll see you later, Durran,' he said without intonation. 'I'm inclined to think you won't harm Gail, because I know what ransom you'll want. But I'll see you later!'

He stepped grimly out of the door. The stuff underfoot was soft and yielding and springy, but it seemed

to give slowly from his weight. Actually, that was the thinly coated cloth sinking through the substance of the ground. If Jack stood still, he knew, he would sink down and down as into a quicksand. The earth was semisolid only to the devices upon his feet. To his body it was thin as air. If he stumbled, he would hang head down, swinging, and ultimately he would sink.

And then -

But he stood, balancing himself in a world all harsh red light and unreal shadows, with his weight resting upon the appearance of vapour. In all this universe only the Mole seemed real, because only the Mole was unreal where this world was actual.

Durran stood at a window and laughed at him. The door closed. The Mole swam away. Presently it was lost to sight amid the shadows of innumerable phantom trees. Jack was alone as no man had ever been alone before. He walked upon vapour, and about him were only ghosts.

## IX

The silence was ear-cracking. Silence, in the normal world, is a compound of minute noises, each one of which contributes to a blended impression of quiet. Here there was an absolute absence of sound. It was startling. It was bewildering. There was constantly a shocked impression of one's own deafness.

Stranger still, of course, was the landscape. It was like a madman's dream. The sun was visible, to be sure, but as a ball of red so dark that it was almost purple. The unearthly light which filled this place was far down the scale, nearly in the infra-red. It was the darkest tint the human eye could see. In it, the trees were more than merely translucent.

Jack was seeing by rays which normally are blanketed out by the visible spectrum. The trees seemed so tenuous, so infinitely fragile that their immobility was not credible even when Jack saw it. And their branches went away to threads and their foliage stopped so little of the strange faint light that it seemed that overhead there was only the faintest of mist. Jack saw stars shining dully in an almost-black sky.

He had stopped, rather grimly, to orient himself. Now he essayed to move. And the ungainly things strapped to his feet were fast in the earth below him. That earth seemed vapour, to be sure. But there was radioactive paint upon these weird earth-shoes. That worked the miracle.

The flying alpha particles from that paint bombarded the dematerialized substance which alone in the world was real to Jack. The effect was 'that of temporary, partial materialization, so that the substance of the earth-shoes was partly 'real' in both states of matter.

Yet it was only partly 'real' so that it could still penetrate reality. But it did so slowly. Jack's earth-shoes had sunk a little, a very little, into the ground. But they would rise no more easily than they sank.

He felt a flash of panic, as a man might be expected to feel with a quicksand tugging at his legs. Then he

forced himself to coolness. His feet had sunk perhaps six inches into the earth. He could not lift them. But he could slide them forward. He did. And the turned-up toes of the snowshoes helped, and a little later he strode forward through the impossible, a man walking upon a cloud, through shadows, beneath a sky and sun which did not seem of earth. He walked and moved, in fact, upon a world which had become itself a ghost in a universe that was phantom.

It was nightmarish, of course. It was worse than any nightmare. It was like insanity come true. And always, if he stood still, he would sink into the nightmare and strangle in the impalpable cloud which was the earth itself, and at last fall dizzily, twisting a little, down into the eternal fires which burned sullenly perhaps fifty, perhaps a hundred miles below him. But to think of that caused vertigo.

Jack headed east, holding a tight leash upon himself lest the panic which always clawed at him should seize his brain. There would be human beings to eastward. True, he would be a ghost to them, and they to him, but still - He forced himself to note all things with a careful attention. That way would come accustomedness.

He suddenly realized that there were no smells in this strange universe. Again, like sounds, a man is normally unaware of tiny odours in the air he breathes. But their absence was strange. The air seemed strangely flat. It had the insipid flavour of boiled and hence tasteless water.

Then he saw something moving. His heart leaped for an instant. But this moving thing was itself a shadow. He watched it intently. It was a rabbit. He could look through its flesh and see the distinctly articulated, phantom bones within its mistlike body. Strangely, it seemed to see him, too. It leaped madly away. And Jack realized that, just as the rabbit seemed ghostlike to him, he would seem a ghost to it. Even more of a wraith and less visible, actually, because of the brighter light in the world of reality, whereby objects behind his no longer 'material' body would be so much more distinct.

He went on, without hope, but refusing to give way until he must. In this world of impalpable things there was no solid space on which he might rest. There was no food he could eat. There was no water he could lift to his lips or swallow. And he knew all this and trudged doggedly eastward, for no conceivable reason, for hour after hour. If he had any reason for his travail, it was that he could die without yielding to the panic Durran undoubtedly expected of him.

It was a ghastly journey. The earth-shoes upon his feet, clumsy and unaccustomed; the unearthly reddish light about him; the vaporous-seeming surface on which he walked; the knowledge of and the insistent nagging feeling of an abyss below him. He had no faintest idea of attaining to safety by this exertion. He knew the conditions under which hope might exist, and they were practically impossible. Without food or water or rest, with no means of communicating with any human being, with his loudest shout in the ear of a man but the faintest thread of a whisper - because he was a ghost - A ghost!

Once he passed through a tiny country village. He saw ghosts about him, living in phantom houses, engaged in unreal tasks. He was unseen by humans, but dogs barked at him, frightened, terrified, the hackles at the top of their necks raised and bristling. Their barks were the faintest of whispers. He went on because their uproar made a phantom baby wake and wail soundlessly.

On - on.

He strode on for hours, desperately, watching without hope for something which might give hope. The dark-eyed, nearly purple, sun sank low. He had emerged from the phantom woods long since and now plodded across a vaporous open space which was featureless and unmeaning. The cloudiness rose above his earth-shoes, now. It was probably a growing crop of wheat or rye, unseeable save as mist.

Ever and again he turned to look his last upon the sun. And very suddenly it vanished and all this unreal world was dark.

There were infinitely faint reddish lights in the sky overhead - stars. He stood upon a vapour that he could not see and that was not tangible to his hands. In all the world there was/riot one solid thing besides his body and the ungainly objects upon his feet. He was exhausted. He was weak with hunger and thirst and half mad with the knowledge of doom upon him and that impending drop down into the smouldering fires that burn eternally at the centre of the earth.

Two small red glows, like fireflies, swept through the blackness from a spot to the right of him. They moved almost before him and vanished abruptly. He plodded on. Two others. They were nearer. Again they vanished when before him. A curious tail of nickering flame seemed to follow them. He was almost too weary even to be curious. But somewhere in his brain a voice said: 'Motor cars. That tail of flame is the exhaust. It's hot enough to give off infra-red, and that's what you see by.'

He plodded on. Sooner or later he would stagger from the exhaustion that crept upon him. His muscles would refuse to obey him. He would stumble. He would fall -

Then he saw a row of dim red specks. They did not move. He regarded them dully. They would be the electric bulbs of a filling-station sign. He turned and moved drearily toward them. He would die, at least, near human beings he could not even signal to. He was very tired indeed. Presently the dim red specks stretched in the three sides of a rectangle above his head. That was the roof of the service cover. And the lights were probably very bright ones, because he made out very faintly indeed the phantom of the filling station itself. He walked through the walls of that phantom. A brighter reddish glow shone there - a round ring of light. No; two round rings of light. He regarded them apathetically. He was too tired to think clearly. He found himself reaching out his hand. He touched one of the rings of light. It burned him. It was, actually, the gasoline burner of a hot-dog boiler.

'Curious,' he said dully to himself. 'In theory, if it burned me, I must have affected the flame. And if there is a man near by - but there must be - I could signal to him if we both knew dots and dashes.'

Then he shrugged hopelessly. His finger hurt. It was severely scorched, but there was not enough light to see. He made a helpless gesture with his scorched hand - and the burned finger touched something solid.

For a moment he was dazed. Sheer shock made him dizzy. He touched the thing again. It was hot and scorched his burned finger. It was impalpable to the unburned ones.

Jack gasped. 'I feel - I feel a stove!'

Then he panted to himself, all alone in the unthinkable universe of his own discovery.

'Radioactivity knocks some of the atoms loose from their co-ordination. Fire, heat, ought to do the same thing. Especially if it caused chemical change - as it does when it scorches my skin. Heat demagnetizes steel, too. It ought to -it ought to materialize -

He held his hand savagely to the flame. It was agony. It was torment. He scorched it all over, going sick from pain. And then he groped. He felt a wall. He fumbled, and fumbled -

The forty-eight hours given to the City of New York would expire at four p.m. At a little after three, Jack got rather stiffly out of a motorcycle side car at the isolated spot in New Jersey where the city's ransom was to be paid. The State trooper who'd brought him roared his machine away. Gail's father

nodded to Jack, his face grey and drawn.

'I heard you were released,' he said jerkily, 'and that Gail was all right when you were turned loose.'

'She was all right,' said Jack composedly. 'But I wasn't turned loose in the way you mean. You're here to deliver the city's ransom?'

Kennedy nodded and licked his lips. 'I asked for the job,' he said desperately. 'I hope to see Gail and make terms with Durran for her release, too, you see.'

'He'll ask,' said Jack, 'for one of the new earth-ships. That's the price. I'm fairly sure.'

'He blew up four of them yesterday,' said Kennedy bitterly. 'They couldn't be moved as you wired they had to be. One was got away. He'll get the rest to-morrow, probably.'

Jack nodded. He got out a cigarette and lighted it. His fingers quivered like tuning forks.

'Listen!' he said suddenly.

He told Gail's father just how Gail had desperately bought his life by telling where the new earth-ships were being built. He told how Durran had cheated on the contract, amusedly, while holding to the strict letter of his agreement. He told of his horrible journey in that world which was not reality, and of the accidental discovery that the scorching of his own flesh would destroy the effect of the force field upon it, just as heat will destroy the magnetism of a bar of steel.

'I scorched my hand pretty thoroughly,' he finished, 'and felt around. I found the desk where the hot-dog man balanced up accounts. I found his pencil and wrote a message to him, telling who I was and how I came to be there. Then I attracted his attention by pounding his inkwell on the top of his desk.'

'Luckily, he wasn't just superstitious. He tried to find out what was happening. The radio broadcast had told about my being carried away in the Mole. The hot-dog man took a chance. He put his stove down on the floor, and I balanced myself on one of those earth-shoes and scorched the soles of my own leather shoes. I tried them. And the heat had re-materialized the bottom layer of the leather.

'I could stand on the floor of the hot-dog stand! At last I had some hope to cling to!

'Then I scorched the earth-shoes, too. The hot-dog man could see them, then. And they wouldn't sink through the floor at all. He believed me. I tore off bits of canvas that had been scorched. He could see them, too, and so could I. He put one over his ear as I'd told him to, in writing. One side was rematerialized by the heat. The other wasn't quite scorched and was real to me.

'I shouted at it. My voice vibrated my side of the cloth, and that made his side vibrate. In a little while he made me hear him, too, in the same way. We had to scream at each other, though with the hand I'd scorched I could touch him. It nearly scared him to death the first time I did it. Then he telephoned for me. And I lay down on the earth-shoes on the floor, and waited. The brought a force-field outfit and re-materialized me.

'I nearly keeled over when I saw the world actual about me again.'

Kennedy listened. He had to. But his thoughts were with Gail.



'But Gail-'

'Look at my hands,' said Jack jerkily. He held them out. They quivered. 'I found out something Durran doesn't know. It's a show-down. Either we get Gail back when Durran turns up, or - there's no hope for her at all.'

'What's the matter?'

'Durran's doomed,' said Jack unsteadily. 'He doesn't know it. I do. He told me he was having to run the sustaining screws ten revolutions a minute faster than at the beginning. And Gail's in the Mole. You see what that means?'

'No. What's happened?'

'The sustaining screws hold the Mole up,' replied Jack, puffing nervously, 'because they're coated with thorium. If it wasn't for that and their movement, the ship would drop like a stone. And the thorium plating is wearing off. Durran doesn't realize it, but the Mole's travelled a long way. When he's run it a certain time longer, so much of the plating will have worn off that no speed will enable the sustaining screws to hold the ship up. So we've got to get Gail out of the Mole to-day.' His eyes met the other's evenly.

Kennedy's face was grey and drawn. It went greyer yet. 'What are you going to do?'

'Ransom her,' replied Jack. 'If Durran sees me here, he won't go away leaving me alive. I hope he'll be curious enough to ask me how I escaped. Then I can talk to him. Did you see a plane sweep low across this place early this morning?'

Kennedy shook his head.

'It was supposed to dust the ground all about here,' said Jack jerkily. 'Like they dust crops by plane. That's part of the trick. I have the rest in my pocket. Where's the ransom for New York?'

Kennedy gestured toward half a dozen suitcases. 'Full of currency,' he said indifferently. 'State troopers all around us in a ring a couple of miles across. Durran's been looking over the place, we may be sure. He's probably watching us now.'

Jack nodded. He flung his cigarette away and lighted another.

'I've only about as long as it takes Durran to get here,' he said unsteadily, 'before I get bumped off. I'm hoping - I'm praying I get Gail dear. Only one chance, and that a thin one. But Durran goes, and I think I go with him.'

'But what are you going to do?' demanded Kennedy desperately. 'What -' Then he stopped.

The Mole, a phantom, was rising out of the ground not a dozen yards away. It came fully into view, and the whitish, eerie light of the force field played upon it, diminishing. As it diminished, the Mole solidified. And as it solidified the screws found the earth in which they worked becoming more and more solid and they slowed and then finally stopped for the increased resistance.

The door opened. The ugly muzzle of a machine gun peered out.

'I've scouted pretty thoroughly,' said the voice of Durran harshly, 'and there's no trap here. I hope you didn't plan to have me bombed from the air, Kennedy. I've got your daughter with me.'

'N-no,' said Kennedy. He swallowed. 'I - I arranged to meet you so I could make terms for her ransom. Can I speak to her?'

A pause.

Durran laughed. 'Why not? Go out, my dear, and talk to him. I can take you back any time I please -'

His voice broke off short. He'd recognized Jack.

'Hello, Durran,' said Jack coolly. 'You didn't like the last bargain I made with you. But it still stands as an offered ransom for Gail.'

Gail stepped out of the Mole, deathly white, and suddenly ran into her father's arms. She sobbed in sheer relief as she dung to him. 'Jack isn't dead!'

'Talk to you later, Gail,' said Jack evenly. 'I'm going to make a bargain for you to stay with your father.'

Durran found his voice again. 'The devil!' he said, shaken. 'I thought you were roasted long ago, Hill! I'll make sure you're dead before I leave this time!'

'Perhaps,' said Jack. 'I offered you information, while I was in the Mole, in exchange for Gail's safety. Kill me and you don't get it. It's about - this.'

He took a flat package, about the size of a tobacco tin, out of his pocket. The ugly muzzle of the machine gun swung and covered him accurately.

'You're covered,' said Durran. 'What's the trick?'

'You can't dematerialize within a certain distance of one of these contrivances,' said Jack. 'They're being turned out in quantity. The result is that if you materialize anywhere these things have been planted, you can't get away and are subject to attack. I'll trade full information, and come with you to give it, for Gail's release. Maybe you can beat them. I doubt it. But you can work out a detector for them, if you know how they work.'

'That's impossible!' snapped Durran.

'So is the Mole,' submitted Jack. 'You can't dematerialize your ship right now. Isn't the secret of that trick worth Gail's release?'

A pause.

Durran's voice sounded suspicious. 'If it's true. That might be a bomb, though. You stay where you are. I'm going to test it out. This machine gun stays trained on you. I turn on the force field. If you lie, I can materialize again fast enough to kill you.'

'But you can't dematerialize,' said Jack. He smiled faintly. 'You're inside the range of this thing.'

Only a grunt came from inside the Mole. Something rumbled within. The sustaining screws stirred.

Instantly the ship flashed into the state of co-ordinated atoms, they would whirl swiftly, looking like the most tenuous of froth but sustaining the whole weight of the earth-ship.

'If you dare move,5 said Durran harshly, 'I'll kill all three of you!'

Then the Mole flared with eerie, whitish light. It became a phantom.

And it dropped with a headlong swiftness at one and the same instant. One instant there was the Mole, all solid, riveted, bullet-scarred plates of steel. Next instant there was a glowing outline which fell as it glowed. Then there was nothing. No phantom. No outline. Nothing.

Jack smiled very, very faintly. 'I think,' he said softly, 'that's that!'

Gail stared at him. 'Jack! Where's the Mole?'

Jack said rather grimly: 'The thorium plating on the sustaining screws has been wearing thin. So this morning I had a plane fly low over this place Durran had appointed. It dusted all the top of the ground with crystals of phosphoric acid. There's been rain lately, and the ground is moist. The acid made a strong solution in all the top soil. And the Mole came swimming through that soil. As long as it was de-materialized, of course, the acid did nothing. But when the Mole materialized, the phosphoric acid dissolved off the remaining thin plating of thorium from the screws. And I persuaded Durran to dematerialize - and there was nothing to hold the ship up. It fell through earth and stone. It's still falling. We'll never see Durran again.'

Gail said, absurdly: 'Jack! The Mole you built! It's gone!'

'Yes,' said Jack. 'And I expected to be in it. I was sure Durran would make me come in, but he was afraid that "contrivance" was a bomb. It was, and I've another in my pocket. With you outside of the Mole and me inside with two bombs - I told your father Durran would go. He - had to be finished.'

But he looked rather sick. The Mole would still be falling - toward those smouldering internal fires to which Durran had doomed him once.

Then, quite suddenly, the ground trembled. A distant, muted, racking sound came from far, far underground. It ceased.

'That - that ends it,' said Jack. 'Durran knew what he was falling to. He was clever. He probably even figured out what I did. So he blew up the ship rather than wait. I'm rather glad of that.'

Silence! Little rustling noises of leaves and grass in the wind.

Then Kennedy said fiercely: 'That's done with, then! Durran's finished! And we'll get back to work! You, Jack, you'll be needed to explain that earth-plane idea. We'll have under-ocean passenger service to Europe within a year. We'll have fleets of earth-planes moving through solidity, safer than aeroplanes or ships could be. And we'll be mining ten and twenty miles deep with those mine cages you talked about \_'

But Gail let go of her father's hands. She walked over to Jack and into his arms.

'My father thinks you've made good, Jack,' she told him. 'Now, you tell him there's something very important to be attended to before you do any more work on those nasty earth-ships!'

Jack pressed her close.

'Yes; there is. Do you mind attending a wedding this afternoon, sir?' he asked Kennedy.

'Not at all,' replied Kennedy with a grimace. 'You two stay here a moment while I get those State police. Watch these bags, if you can. The ransom for New York is in them. It's got to be taken back.'