to quote:



KEN CROSSEN

"I am 42, married and the father of four children. Born in Ohio, worked in steel mills, Fisher Body plants, carnivals, and for many years even tried insurance investigating. Switched to writing in 1939, the year I sold my first story. Since then, I've sold about 3 million words of fiction, acquired six pseudonyms in the process, and have two mysteries and two sf anthologies to my credit."

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THE CLOSED DOOR

By KENDALL FOSTER CROSSEN

This is a detective story. Without, we hasten to add, private eyes, blonds, beds, bigamy or bottles of bourbon. The setting is a luxurious interplanetary hotel three hundred years in the future, and the hero — Detective Inspector Calder — is a quiet young man who reads Rex Stout in the original English and goes to bed, alone, each evening at ten.

Mr. G. G. Gru had been slain while alone in his room. There were no windows, and the single door could be opened only with the active aid of the victim. Yet the killer had done his job despite the most rigid safeguards known to science. Certainly it was impossible—except that Mr. Gru was stone cold dead. . . .

ALISTER CHU, manager of the Planetary Rest Hotel, was a much disturbed man. The Galactic Acrylic Convention was in full swing, which meant that he hadn't slept for two days. When he wasn't rushing to answer the demands of a convention committee,

he was busy soothing the complaints of non-convention guests. At the moment, he was trying to estimate the damage resulting from the latest cocktail party, while a group of Acruxians sang their national anthem in the corridor and two delegates from Can-

opus were in the Solar Room hammering out a Nocturne that had been especially arranged for polydactylic pianists. And then his visiphone buzzed.

Without noting the origin of the call, Alister Chu flipped the switch and fairly snarled into his mouthpiece: "Well, what do you want?" Then he recognized the face on the screen. It was one of the hotel's most important guests, and there was no doubt that he was also an angry guest. Alister quickly erased the anger from his own face and added: "Sorry, Mr. Gru, I... the convention is making me rather jumpy."

"It's making me more than that," snapped the guest. He spoke Terran with hardly a trace of an accent. "If there's one thing I can't abide, it's practical jokers. You'd better get up here

at once, Chu."

"Right away, sir. What — seems to be the trouble?"

"I've already told you," the guest said. His gaze shifted away for a minute. "The Warning Red just flashed on in my room, so you'll have to wait until your damned Mercurian stops parading up and down the hall, but I want you here immediately afterward. I will not stand—" He broke off and a startled expression came over his face. Alister Chu saw that he was staring off to one side of the visiphone, then he started to scribble madly with a

pencil on the pad that was beside the phone. "I was wrong," he said thickly. "It's not —"

At this point, as it seemed to Chu, the guest fell apart. Not literally, of course, but there was a minute when his face seemed to be working in all directions at once, then he fell forward in front of the visiphone. From the way he fell, Alister Chu was almost certain that he was dead.

Then a gloved hand came into view on the screen, moved quickly to the phone itself, and the screen went dead.

Alister Chu went quickly from the room, stopping for a moment beside the desk of his assistant. "Something's happened upstairs," he said quietly. "I think you had better put in a call for the police. I'll be on the hundred and seventieth floor. Mr. Gru's room." He hurried on toward the elevators, trying to look as if nothing had happened.

Chief Inspector Maiset, head of the Solar Department, Terran Division, took the call that came into the Interplanetary Criminal Police Commission. Since it was coming in over a closed circuit, he didn't bother to activate the screen. He never did on such calls, his reason being, as he said, that he saw enough policemen without looking at another one when it was not necessary.

"Maiset here," he said into the

audiphone. He listened for a few minutes, doing nothing more than grunt occasionally to show that he was still there. "Let me see now," he said amiably when his caller had run down. "vou sav the case involves suspected murder, although you're not sure anyone is dead: a hotel full of suspects, if it is necessary to suspect anyone of anything, these being delegates from all over the galaxy. That about it? No, no, you did quite right. I expect you'll be needing someone like Detective Inspector Calder. He'll be right along. You'll meet him? Good."

Chief Inspector Maiset disconnected. He leaned over and pressed one of a number of buttons on his desk, then waited patiently.

After a moment the door to his office opened and a young man stepped inside. Being a detective, he was in plain clothes. That is, he wore an attractive one-piece suit which made him look like any one of a dozen successful young businessmen. But his face lacked the alertness of such young men, his expression usually giving the impression that he was half asleep.

"Another official call, I see," the young man said as he came up to the chief inspector's desk.

"That's true," admitted Maiset, "but how did you know?"

"Simple deduction," the young man answered. "When it's an official call, you never activate the screen. There is, you'll note, a slight film of dust over the screen switch. Since you also never summon me unless there's a case, it means you just received a plea for help from some other station. That, in turn, means a case involving either delicate interplanetary relations or murder."

The chief inspector beamed at the young man. Detective Inspector Jair Calder was always making just such deductions as these. Although it was an age when crime was usually solved by unrelieved science, the chief inspector was a sentimental man who delighted in the old literature of crime, and therefore never ceased to be pleased by Calder's ability.

"You're right," he said. "I just had a call from Sub-Inspector Aly Mordette of the Terran Provincial Police. It's suspected murder and delicate interplanetary relations. At the new Planetary Rest Hotel. You know where it is?"

Inspector Calder nodded.

"All that Mordette has done is throw an energy belt around the hotel so that no one can enter or leave. He'll meet you on the Third Level above the hotel and key you through the belt."

Inspector Calder nodded again and left.

A few minutes later he arrived at the Third Level in his small, inconspicuous air-car. He was broadcasting a short-wave impulse which only the police sets could pick up as a means of identification.

The police cruiser soon came alongside, then led the way down toward the hotel. Inspector Calder set his air-car down on the roofport of the hotel, and by the time he climbed out the uniformed sub-inspector was waiting for him.

The latter was a large, abdominal man, whose light blue uniform managed to look wrinkled in spite of being manufactured from non-wrinkeable plastic. The expression on his red face indicated that the sub-inspector was a man who lived in an aura of constant suspicion.

"Inspector Jair Calder?" he asked formally as Jair stepped from his car.

"Yes," Jair said pleasantly. "I take it you're Sub-Inspector Mordette? A bit of a go here, ch?"

"It would seem so," the subinspector said-glumly. "I haven't done a thing, you understand. The hotel is filled with all sorts of queer fish — and some of them are fish — and there's no telling what'll hurt their feelings. A mere sub-inspector in the Provincial Police doesn't carry much weight, I can tell you."

"Just so," Jair agreed. "I expect we ought to look in on the trouble. don't you think?"

"We'll have to do down to the hundred and seventieth floor," the sub-inspector said. He started





for the elevators and Inspector Calder fell into step beside him. "Things haven't changed much, I tell you, in spite of all the talk about living in a brave new galaxy."

"How do you mean?" Jair asked.

The sub-inspector waved his hand at the hotel. "All this. Convention at a hotel. Place filled with big shots. A guy gets murdered - probably for the same sort of reason people were murdered three hundred vears ago. And it's a time for the little policeman to watch his step or some big shot will have his job. Oh, we have our Twenty-second Century gadgets, but everything works just the same as it did in the Nineteenth or Twentieth Century. You can take my word for it. İnspector."

"I shall," Jair said amiably.

The sub-inspector scowled uncertainly, but was silent for the rest of the trip. When they stepped out of the elevator on the 170th floor, it seemed that the hall was filled with policemen. But finally, halfway down the corridor, Jair caught sight of an immaculately dressed man who could only be the manager of the hotel. He saw them at the same time and hurried to meet them.

"Well, I'm certainly glad that you're here," he said, speaking directly to Jair and ignoring the sub-inspector. "I do trust that this unfortunate matter can be handled discreetly. We have a number of important men here this week and I wouldn't want them disturbed."

"We shall handle them most gently," Jair said. "I'm Inspector Calder, of Planepol. And you're—?"

"Alister Chu," the manager said. "I have the honor of being the manager of —"

"Of course," Jair interrupted. "Now, what seems to be the trouble?"

The manager quickly told of the call he'd received from the guest on this floor. He explained the whole thing in great detail, including his impression of the guest's falling apart: "Not literally, of course." By the time he'd finished, they were standing in front of the room in question.

"Of course," Jair said, agreeing with the impression. He glanced around the luxurious, brightly-colored corridor. "You know, this is the first time I've seen the Planetary Rest Hotel, although I've read about it. Everything is constructed of plastic, eh?"

"Oh, yes." For a minute, pride replaced the worried look on Alister Chu's face. "As you may know, the hotel is owned by Plasticorp and they built everything with their own products. There are two hundred and seventythree different plastics used. Notice how springy the floor is; it cuts down fatigue by sixty per cent. The doors, for example, are of Plexilite with a tensile strength several times that of steel. Then, due to a few new formulas, we are the only hotel capable of catering to every life form in the galaxy—"

"I was wondering about that," interrupted Jair Calder, "Do you have separate sections for the inhabitants of other planets?"

"Oh, no. We have special rooms, of course, but they're on the same floors. Why, there are a number of rooms for Mercurians right here on this floor."

"Mercurians? I should think it would be dangerous for your human guests having them on the same floor."

"No danger of that at all," the manager said. "When the Mercurians want to leave their rooms they naturally have to come through a sort of air-lock. There are warning lights which go on in all the other rooms, in the hallway and in the elevators. This gives everyone a good thirty seconds to get out of the way."

"What about damage to the hallway?"

"None at all," the manager said with pride. "A Mercurian passing through the hall will raise the temperature to about two hundred degrees Centigrade, but none of the plastic used will grow

soft at temperatures below two hundred and fifty degrees Centigrade. So there's plenty of margin. And the hallway reverts to its normal temperature within thirty seconds after the Mercurian has passed. At the end of the hall there are special Mercurian elevators, taking them down to where they can enter their fire coaches."

"All of this is very interesting," Jair Calder said; "but I suspect we'd better get down to cases. This the room of the guest?"

"Yes."

"His name?"

"G. G. Gru. He's been coming here regularly since we opened, and he always reserves the same room."

"He was not, I take it, a delegate to the convention?"

"Oh, no. In fact, he loathed the convention."

"I see. Well, since he doesn't answer the door, I expect you'd better open it."

For the first time, the manager looked embarrassed. "I can't," he said.

Something akin to interest crept into Inspector Calder's eyes. "Why not?"

"Well, we have two sorts of doors here. The regular doors are locked or unlocked by a combination of pressures. The combination is given the guest and then changed for the next guest. Naturally, the management has no difficulty opening those doors if circumstances demand it. But with certain regular guests — and Mr. Gru was one of these — we replace the door with a special one with a palm-lock keyed to the atomic structure of the guest. No one but the guest can either lock or unlock these doors."

"Ah," said Jair Calder. He was really interested now. "I presume there is interior ventilation and so no windows?"

"That is correct, Inspector."

"And this door is the only entrance or exit?"

"Yes."

Inspector Calder looked again at the door. It was a plain plastic door, dark green in color, perfectly smooth and unbroken except for the slight impression, in the shape of a hand, which was the palm-lock.

Now the inspector, like his chief, was of a romantic turn of mind and was fond of the old literature on crime. So, perhaps, it was only natural that, staring at the door, he muttered to himself: "If Gideon Fell could have lived to see this . . ."

"I beg your pardon, Inspector?" the manager said.

"Nothing," Jair Calder said hurriedly. "An unimportant historical allusion. Now, Mr. Chu, I believe you said that Mr. Gru was on the visiphone to you at the time he was apparently killed? And that you yourself saw another hand reach in and turn off the visiphone?"

"That's right."

"And you also tell me that this door — which is the only egress to this room — could not be locked or unlocked by anyone except Mr. Gru?"

"That is also correct, Inspector."

"But then," suddenly exclaimed Sub-Inspector Mordette, "that means the murderer is still in the room. We'd better prepare to rush him."

"It'll be a pity if you're right," Inspector Calder said. "And how do you suggest rushing into the room, Sub-Inspector?"

"Why — why —" stammered the official, "I guess we'll just break the door down."

"You couldn't break that door down if you had a thousand men," the manager said with a patronizing air.

"He's right, you know," said Jair. He drew a small weapon from his pocket. "But I expect this will get us in. Plexilite, I believe you said?"

"What's that?" the manager asked.

"Aromatic hydrocarbon gun," the inspector answered. "Very useful in getting through Plexilite doors. In fact, it's the only thing that'll do the trick." He aimed the gun and moved it in a half circle while holding the trigger down. The door swung open, leav-

ing a half-moon section hanging from the lock.

Mr. G. G. Gru was slumped across his desk in front of the visiphone screen, in much the fashion that the hotel manager had described. There was no doubt that he was quite dead.

Inspector Jair Calder walked across and stood looking down at the body, ignoring the fact that Sub-Inspector Mordette and his men were sniffing around the room with drawn weapons. Then, as he saw Mordette approaching, he leaned over and ripped off the top sheet of a scratch pad on the desk. He folded back the top inch or so and held it in his hand. There was a jagged tear across the lower half.

"No villain, eh, Mordette?" he asked casually.

"No," growled the sub-inspector. "An Algenibian worm couldn't be hidden in here without my men finding him." He stopped and gazed down at the body. "No wound. Must have been a magnetic weapon."

Inspector Calder grunted what might have been either an affirmative or negative.

"Demagnetized," Mordette said with scorn. "Just a fancy method of electrocution. I told you that even methods hadn't changed in the last two hundred years."

"So you did," murmured Jair. "Mr. Chu, I take it that Mr. Gru

here was from Sirius Two?"

"Yes, Inspector."

"Hmmm. I thought so. Humanoid, but a Si-type of life." He glanced again at the paper in his hand. "As you probably suspected, Mr. Chu, the victim did try to leave us a clue to his death, but I'm afraid most of it has been made off with." He held the paper up so that the others could see it. One jagged piece of paper, torn on both sides, still retained a crude drawing of a six-sided figure and the letters COO.

"Coo?" asked a bewildered subinspector. "What sort of a clue is that?"

"Not a very good one, I'm afraid," admitted Jair. "By itself, the word might indicate a soft murmuring sound — hardly to be associated with an act of violence. I believe at one time it was also an expression of surprise among a small lower-class group of Terrans. Then again — and perhaps more to our purpose — it might be part of a name. Mr. Chu..."

"Yes, Inspector?"

"I'd like a little assistance, please. First, a place where I may conduct the investigation. Preferable a comfortable place where I might also have some coffee. Then, someone sufficiently familiar with the convention here to inform me about the various delegates. Thirdly, I'd like a quick search

made of your register and a list of all names which have the letters C-O-O appearing together."

"Of course, sir," the manager said. "We have a rather comfortable executive's lounge."

"Fine." Inspector Calder walked out of the room with the others trooping behind him. As he stepped into the hallway, he lurched and almost fell. He stooped quickly and came up holding a small, transparent six-sided figure. As he held it up to the light, faint markings could be seen inside as if someone had managed to etch the letter U within the solid.

"A rather interesting piece of Plexilite," he observed. "Any idea what it was doing in the corridor, Mr. Chu?"

"No," the manager said. He stepped closer and looked at it. "Looks like interior etching. Could it be some sort of costume jewelry, perhaps?"

"Perhaps," Jair said. He tossed it in the air a couple of times and then put it in his pocket. He took one more look at the door. "Mr. Chu, what about someone's removing the door from its hinges?"

"It can only be done when the current is off or when the door is unlocked, and even then it's a good twenty-minute job. There would have been no time for the . . . ah . . . murderer to replace the door. You will remember the warning light went on while Mr.

Gru was speaking to me. So a Mercurian went down the hallway within thirty seconds and I myself was here as soon as the Mercurian returned to his room."

"Of course. Shall we go lounge like executives?"

The manager disapproved of the levity, but he led the way to the elevator without speaking.

"Now," said Inspector Calder, when they were in the luxurious executive's lounge, "before you dash off to fetch my coffee, the list of names, and a convention expert, would you know the time you received the call from Mr. Gru?"

"Yes," said the manager. "It was just one minute past two o'clock."

"Then," said Jair, writing the time down, "Mr. Gru was murdered at approximately one minute and ten seconds past two. The Mercurian entered the hallway at approximately one minute and thirty-five seconds past two. How long would you say before he returned to his room?"

"Four or five minutes. I waited in the elevator until the light went off."

"Let's say five minutes. So at six minutes and thirty-five seconds, the Mercurian went back to his room of fire. Then, at seven minutes and five seconds past two, you entered the corridor—and found it empty?"

The manager nodded.

"Good. While you're about it, you might also find out which one of your Mercurians was promenading down the corridor."

Inspector Calder studied the timetable he'd written down, ignoring the glum-looking sub-inspector, until the hotel manager returned. With him was another Terran, a rather brusque-looking young man dressed in the latest sports-plastic.

"This," he said, "is James Bruce. He's an employee of Plasticorp and has been in charge of the present Acrylic convention. Mr. Bruce, Inspector Calder of the

I.C.P.C."

"Hi, Inspector," the newcomer said in a breezy fashion. "Chu, here, told me about the business upstairs. I'll be glad to help in any way I can. I do hope, however, that your investigation won't disturb our convention too much. We have some pretty important men here." He bore down on the word important just enough. Jair Calder got the implication, but gave no recognition of it.

"We'll try to keep the murder from inconveniencing you too much," he said dryly. "What is your position with Plasticorp, Mr.

Bruce?"

"Vice president in charge of testing. But I'm also the convention chairman. And if I do say it myself, this is one of our best conventions. We've been having a high old time, if you know what I mean." He managed a leer that was about as crude as anything Calder had seen in a long time.

"Quite," the Inspector said.

"Mr. Chu, the names?"

"Only four guests fit the requirements," the manager said. "Cooerl II, from Mercury. Rruda Akcoo of Mars. Somer Alcoon of Rigel. And Amos Coombs, a Terran. All of them are delegates to the convention."

Jair Calder nodded and turned to the convention chairman. "You know them, Mr. Bruce?"

"Sure. All of them are good guys."

"They are delegates from dif-

ferent companies?"

"Not exactly," Bruce said. "To get the picture, you have to realize that Plasticorp controls about ninety per cent of the plastics business in the galaxy. There are a few minor companies, but almost everyone at this convention is a part of Plasticorp. These four are all executives in the corporation. I'll vouch for them, Inspector."

"That's nice of you," Jair Calder said dryly. He turned back to the manager. "Did you learn which Mercurian was out?"

The manager nodded. "By a strange coincidence, it was this same Cooerl II."

"Let's hope it was no more than a coincidence. You have a flame-suit I can borrow?" The manager nodded.

"I'll go up and see Cooerl II then," the inspector said. "Mr. Bruce, I wonder if you'd mind learning the whereabouts of Coombs, Akcoo, and Alcoon at about two o'clock?"

"Sure thing," Bruce said.

Inspector Calder donned a standard flame-suit and returned to the hundred and seventieth floor. He'd arranged for the desk to announce he was coming, so he was admitted without delay. Once the inner door had closed, the Mercurian turned from the controls and greeted his visitor politely.

The Mercurians were, of course, originally descended from a form of salamander, but Cooerl II stood upright and resembled a salamander about as much as Jair Calder resembled the Pekin Man. The Mercurian and the Terran exchanged polite views on the weather, the Mercurian's relatives, and other such unimportant matters for several minutes.

"I understand," Jair Calder finally said, "that you were out in the hall briefly this afternoon. I wonder if you'd mind telling me why?"

"Certainly not." The Mercurian's voice sounded querulous in the head-phones. "I was notified by the operator that there was a visiphone call for me. There is no set in my room — I understand

the heat is not good for the screen—and so I went to the public visiphone booth at the end of the corridor. But there was no one there when I answered. Apparently the party had hung up, or it was a practical joke."

"Strange," said Jair, more to himself, "this is the second mention of a practical joke without any more evidence than that. You met no one in the hallway?"

"Of course not. It would be dangerous to anyone other than another Mercurian or someone dressed as you are now."

Inspector Calder wasted another few minutes telling the Mercurian how much he admired his home planet and wishing him warmth and good health, and then left the room. Out in the hall heremoved the flame-suit, emerging drenched in sweat, and went back downstairs. The manager, Mr. Bruce and the Provincial Police still waited for him.

"I checked up on the boys for you," Bruce announced. "All three of them have perfect alibis. They were in a committee meeting from one until three."

"Thank you," said Inspector Calder. "What about yourself?"

"Me?" asked the startled vice president. "You're kidding, Inspector. But if you really want to know, I got an alibi too."

Jair Calder nodded agreeably and sat down. He tasted the coffee

which was sitting at his place and was glad to find it fresh and hot. Then he turned to the manager.

"Mr. Chu, I must trouble you for two more things. I'd like all the elevator operators who were on duty from about twelve o'clock to after two brought here one at a time so that I can question them. I'd also like to question any other guests on the hundred and seventieth floor who were in their rooms at about two o'clock. That is, excepting the Mercureans. Then — I believe the hotel has its own shops, does it not?"

"Yes, indeed. You can purchase anything without leaving the hotel"

tei.

"Good. Check each shop and get me a list of any unusual purchases made during the past two days." He waited until the manager left the room and then smiled at Sub-Inspector Mordette. "Best do this in an orderly fashion, ch, Mordette? Looks better on the report."

"You see," Mordette said triumphantly, "even you must follow the exact form that was used

centuries ago."

"I'll make a note of it," Jair said solemnly.

For the next several minutes, he was busy with the stream of hotel employees who came in to be questioned, all of them nattily attired in the hotel service uniform. But the result of the questioning only proved that no one

had been on the one hundred and seventieth floor between twelve and two o'clock except G. G. Gru, himself, and the Mercurian.

The manager returned to report that the other guests of the one hundred and seventieth floor had all been downstairs with the exception of a rather ill-tempered crustacean from Aldebaran who refused even to be questioned.

Inspector Calder nodded and seemed to lose interest in that trend of thought.

"You will be finished soon, won't you?" the manager inquired anxiously. He stifled his conviction that the inspector was incompetent and would never be finished.

"I expect so," Jair said. "You checked with your shops?"

"Yes. There were a few unusual purchases. The Pleasure Shop sold a silver-handled whip to a visiting Terran and had one request for Martian Jhung cigarettes. These are illegal, of course, so there was no sale. The Dispensary sold a small order of carbolic acid and one of formaldehyde, and then an Antarean came in this morning to purchase a — a —"

"Never mind," Inspector Calder said. "I'm well aware of the moral habits of Antareans. I think I'd like to make an outside call. Where is the nearest public visiphone booth?"

"Through there," the manager

said, indicating a door.

While the inspector was gone, the manager tried to hold a conversation with the sub-inspector in the hope of learning that Inspector Calder had some idea of leaving the hotel before too long.

"Maybe it was suicide," he suggested, glancing idly at a hotel service man who had entered and was fixing one of the wall lights. "I've heard that the inhabitants of Sirius II are often melancholy. And after all, the room was locked."

"Personally," the sub-inspector finally said, "I'd think that some-body pumped poison through your ventilating system, if it weren't for the fact that you saw the murderer's hand on the screen. And maybe that's what it was anyway. Witnesses are never very reliable."

"Nonsense," the manager said sharply. "It couldn't be done." He looked sharply at the subinspector, but the latter had already decided he'd been hasty in venturing an opinion at all.

"I'd vote for suicide," James Bruce added. "Moody, all of those humanoid types. They're almost human, but not quite, and they can't stand it."

Sub-Inspector Mordette still refused to rise to the bait, so the three men fell silent. They watched the repairman stroll from the room, then turned to staring at the ceiling while they waited.

"Well," said Inspector Calder,

coming back into the room in what seemed to be good humor, "I expect we'll be through with this shortly." He sat in his chair and pulled out a cigarette case. "Cigarette, anyone?"

James Bruce took one, but the others refused.

"I say," Calder exclaimed. He reached over and grabbed Bruce's lighter just as he was about to activate it. Then he jumped up and went over to the wall. He reached up and pulled a small brown ball from the wall. "A thallium bomb," he said to the others. "A good thing I saw it before you struck that lighter. The slightest change in temperature and v would've all been poisoned."

"Good heavens," said the manager. His face was pale, a color that was matched by the faces of the other two men. "How did it get there? There hasn't been anyone in the room but the three of us."

"No one?" Jair Calder asked softly.

"Not a soul. It —" A startled expression came over the manager's face. "There was a repairman," he said. His face darkened with anger. "I'll —"

"Never mind," said the inspector. He opened a small case and popped the thallium bomb into it. "I was the repairman who came in. It was easy to borrow a coat. I also put the bomb there."

"But why?"

"I just wanted to demonstrate that the testimony we received stating no one appeared on the one hundred and seventieth floor meant nothing. Repairmen, like servants, are invisible people. I think we can be pretty sure that our murderer, dressed in a hotel uniform, was up on the floor twice today."

"Twice?" said Mordette. "Why twice?"

"First, he had to arrange matters—it was this arrangement which Mr. Gru thought was a practical joke. Then, after arranging for a call to be put through to Cooerl II, he returned to the floor, killed Mr. Gru, grabbed up the clue or part of it, ran out and off the floor. Thirty seconds doesn't sound like much time, but he needed no more."

"But — but what about the door?" asked the manager.

"Oh, yes, he unlocked the unlockable door and locked it again."

"But it's impossible."

"Only improbable," Jair Calder said. "Mr. Chu, where did you keep the special door to that room when the guest from Sirius II was not here?"

"In the workshop in the basement."

"And the regular door is kept there when Mr. Gru is in the hotel?"

The manager nodded.

"I wonder if you'd mind phon-

ing down and checking the door situation now?" the inspector asked.

The manager crossed the room in nervous strides to an audiphone. He talked for a minute, then returned, a frown on his face.

"I don't understand it," he said. "They report that the regular door and the special door are both there. That means—"

"A third door," finished Jair Calder. "Also special, in that it was made for this one occasion. I might add that it was just like your special door except for a slight chemical difference. The murderer's first trip was to install his door, of course. By the way," he added, turning to Bruce with a smile, "as vice president in charge of testing I imagine you carry a Sonicolt, don't you?"

The vice president nodded. "Could I see it a moment?"

James Bruce handed over what appeared to be a good-sized automatic pistol. Inspector Calder peered at it.

"You use this for testing plastic?"

"Yeah," Bruce said. "That's the best Sonicolt made. Our plastic will stand the full force of it, even through a supersonic periodic disturbance of 47,000 cycles per second, it is even strong enough to ki—" He broke off.

"Exactly," the inspector said softly. "While relatively harmless

to human beings, a Sonicolt will kill anyone from Sirius II. And it was such a weapon as this that killed Mr. Gru."

"But I don't understand," said

the manager.

"Si-type life form," said Jair. "The inhabitants of Sirius II, while humanoid in appearance, have a silicon constitution instead of carbon. A supersonic weapon of this strength would literally shatter their insides. So you weren't so far wrong, Mr. Chu, when you said you had the impression he was falling apart."

"Why was he murdered?" Mor-

dette asked.

"I think it was over plastics," said the inspector.

"Nonsense," James Bruce declared roughly. "Sirius II has never been in the race on plastics."

"But I think they were about to get into it through Mr. Gru," Jair Calder said pleasantly. "Mr. Bruce, you're more familiar with plastic formulae than I am. I wonder if you'd check the formula I've written down." He handed a sheet of paper to the vice presi-

The latter looked at the paper and his face twisted with rage. He leaped to his feet, one hand darting for his pocket.

But for all of his faults, Sub-Inspector Mordette needed only one hint to alert him. He'd gotten that hint from the tone of Calder's voice. He grabbed James Bruce and snatched the small magnetic gun out of his hand before he had a chance to use it. Then, still holding the vice president with one ham-like hand, he looked to the Interplanetary detective.

"He's the murderer all right," Inspector Calder said. "Take him

away."

Sub-Inspector Mordette motioned toward the door and two of his men came in and took James Bruce out.

"Now, what about it?" Mordette asked heavily. "What made him break like that?"

"This," said Calder. He held up the paper so that they could both see what had been carefully written on it.

$$CH_{3}COCH \xrightarrow{HCN} CH_{3}C - CN = (C_{6}H_{5}CH_{2})CHCOORH$$

$$CH_{2}CHCOORH$$

$$CH_{2}=CHCOOR$$

"What does it mean?" Mordette asked.

"That's the formula for the door he made," Jair said. "It's the same as the regular formula except for a slight difference which lowers its softening point. You see, Plexilite is a polymethyl methacrylate plastic, sometimes known as the plastic with a memory. In other words, it can be molded into one form and then, if you heat it, it will immediately revert to its original form."

"What does that have to do with it?"

"Everything. You see, Mr. Bruce made the door exactly like the regular door, except that in molding it he put into the door an old-fashioned keyhole — something which hasn't been used in a hundred years. He also molded a key to fit it and so was able to unlock and lock the door."

"But what happened to the keyhole and the key?"

"Cooerl II," Jair Calder said.
"The call to the Mercurian was a plan to get him to pass along the hallway just after the murder. In doing so, he raised the temperature to about two hundred degrees centigrade — not warm enough to bother the other doors, but enough to make this one door 'remember' its original form, which was a door without a keyhole. And the key, which he'd dropped on the floor, became this." Jair reached into his pocket and

held up the small figure he'd picked up earlier. "What looks like etching is where he filed the key. In reverting, the filed edges were inside."

"The clue on the paper."

"Part of it," said Jair. "Gru must have guessed when he saw his murderer and tried to write down the formula, or part of it. The six-sided figure he drew was probably part of the chemical symbol for the reaction between phenol and formaldehyde — that being what Bruce added and which he purchased here in the hotel. The COO was undoubtedly part of the formula I've written here."

"But why?"

"Plastics," the inspector said. "Mr. Gru had made an appointment with a patent attorney concerning something he was going to call Ancolite. On the scratch pad upstairs was part of a formula which the murderer overlooked. Not the complete formula, but enough to be interesting." He pulled the slip of paper from his pocket and unfolded the section which earlier he'd folded back. He read from it. "'CO-Two A-N-O plus Si-O-Two plus C-six-H-five-O-H.' It's enough to indicate that Mr. Gru had apparently found a way to make a plastic primarily from air. This might easily put Plasticorp out of business."

"But —" began the manager.

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THE CLOSED DOOR

(Continued from page 67)

"Exactly," said Inspector Calder. "James Bruce committed murder in order to save his corporation. But it was a wasted effort. I must turn this paper over to the government of Sirius II and they probably have a chemist who can reconstruct the formula. You see," he added turned to the sub-inspector, "you were quite wrong about nothing having changed in the past two hundred years. This was a crime which could not have happened then.

"Which," he continued, "brings us up to the point that James Bruce will, according to law,

have to be tried on Sum. II. I'll write a supplementary report, but you'll have to file the main report. And I have no doubt that Mr. Bruce will be found guilty. After which, perhaps, there'll be some action against Plasticorp."

"One thing puzzles me," said Mordette, still finding something to worry him. "I've had no experience with this sort of thing. How shall I make the charge? The victim wasn't a man, so homicide seems somehow wrong."

"Of course it is," Inspector Jair Calder said briskly. "The proper charge is silicide." He waved to the two men and walked out, once more looking sleepy.

They waved back.