

The Condottieri



H. Beam Piper

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Based upon this original public domain text¹:

"The Mercenaries," March 1950
(original *Astounding Science Fiction* publication²)

including original illustrations by Brush.

Edited to conform with the Terro-human Future History canon³.

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² "The Mercenaries," H. Beam Piper, *Astounding Science Fiction*, Vol. XLV, No. 1, March 1950, pp. 57-77.

³ As Piper's commentary in "The Future History" (*Zenith*, May 4, 1964, edited by Peter Weston) makes clear, the Terro-human Future History (TFH) canon is comprised of the stories "Edge of the Knife" (*Amazing Stories*, May 1957), "Omnilingual" (*Astounding Science Fiction*, February 1957), "Naudsonce" (*Analog Science Fact—Science Fiction*, January 1962), "Oomphel in the Sky" (*Analog Science Fact—Science Fiction*, November 1960), "Graveyard of Dreams" (*Galaxy Science Fiction*, February 1958), "A Slave is a Slave" (*Analog Science Fact—Science Fiction*, April 1962), "Ministry of Disturbance" (*Astounding Science Fiction*, December 1958), and "The Keeper" (*Venture Science Fiction*, July 1957), and the novels *Four-Day Planet* (Putnam, 1961), *Uller Uprising* (originally published in *The Petrified Planet*, Twayne, 1952), *Little Fuzzy* (Avon, 1962), *Fuzzy Sapiens* (originally published as *The Other Human Race*, Avon, 1964), *Fuzzies and Other People* (Ace, 1984), *The Cosmic Computer* (originally published as *Junkyard Planet*, Putnam, 1963), and *Space Viking* (originally serialized in *Analog Science Fact—Science Fiction*, November 1962, December 1962, January 1963, and February 1963). Additionally, those portions of Piper's story "When in the Course—" (originally published in *Federation*, Ace 1981), published posthumously, which are not duplicated in his non-TFH story "Gunpowder God" (*Analog Science Fiction—Science Fact*, November 1964) are also treated as part of the TFH canon. Finally, background material found in the authorized novels *Fuzzy Bones* by William Tuning (Ace, 1981) and *Golden Dream* by Ardath Mayhar (Ace, 1982) is also treated as canonical when it does not contradict Piper's own work.

Duncan MacLeod hung up the suit he had taken off, and sealed his shirt, socks and underwear in a laundry envelope bearing his name and identity-number, tossing this into one of the wire baskets provided for the purpose. Then, naked except for the plastic identity disk around his neck, he went over to the desk, turned in his locker key, and passed into the big room beyond.

Four or five young men, probably soldiers on their way to town, were coming through from the other side. Like MacLeod, they wore only the plastic disks they had received in exchange for the metal ones they wore inside the reservation, and they were being searched by attendants who combed through their hair, probed into ears and nostrils, peered into mouths with tiny searchlights, and employed a variety of magnetic and electronic detectors.

To this search MacLeod submitted wearily. He had become quite a connoisseur of security measures in fifteen years' research and development work for a dozen different nations, but the Tonto Basin Research Establishment of the Philadelphia Project exceeded anything he had seen before. There were gray-haired veterans of the old Manhattan Project here, men who had worked with Fermi at Chicago, or with Oppenheimer at Los Alamos, twenty years before, and they swore in amused exasperation when they thought of how the relatively mild regulations of those days had irked them. And yet, the very existence of the Manhattan Project had been kept a secret from all but those engaged in it, and its purpose from most of them. Today, in 1965, there might have been a few wandering tribesmen in Somaliland or the Kirghiz Steppes who had never heard of the Philadelphia Project⁴, or of the Red Triumph

Five-Year Plan⁵, but every literate person in the world knew that the great power-blocs⁶ were racing desperately to launch the first spaceship to reach the Moon and build the Lunar fortress that would insure world supremacy.

He turned in the nonmagnetic identity disk at the desk on the other side of the search room, receiving the metal one he wore inside the reservation, and with it the key to his inside locker. He put on the clothes he had left behind when he had passed out, and filled his pockets with the miscellany of small articles he had not been allowed to carry off the reservation. He knotted the garish necktie affected by the civilian workers and in particular by members of the MacLeod Research Team to advertise their nonmilitary status, lit his

international organization comprised of the United States and its allies, but while there is a canonical Philadelphia Project meant to establish a U.S. lunar base there is no Western Union in the canon. The concept is similar to the canonical Terran Federation, mentioned in "The Edge of the Knife" as "a proposed organization to take the place of the U. N. if that organization breaks up," but the Terran Federation, established in 1975 (32 Atomic Era), is created a decade after the time of "The Mercenaries," set in 1965 (22 Atomic Era).

⁵ In the original text the Red Triumph Five Year Plan is being undertaken by the "Fourth Komintern." "Eastern Axis," the term used in "The Edge of the Knife," is used subsequently in place of the "Fourth Komintern" of the original.

⁶ The original text mentions four "great power-blocs" but the "Islamic Kaliphate" and the "Ibero-American Confederation" are omitted here because the canonical geopolitical world of "The Edge of the Knife" appears to be bipolar rather than multipolar. (The Ibero-American Confederation is inserted later to describe an earlier patron of the MacLeod Team.) Furthermore, while there is an "Islamic Caliphate" in "The Edge of the Knife," this confederation of Arab states is eventually allied with the United States under the Terran Federation and is not an adversary as the Islamic Kaliphate is portrayed in the original text of "The Mercenaries."

⁴ In the original text the Philadelphia Project is being undertaken by the "Western Union," an

pipe, and walked out into the open gallery beyond.

Karen Hilquist was waiting for him there, reclining in one of the metal chairs. She looked cool in the belted white coveralls, with the white turban bound around her yellow hair, and very beautiful, and when he saw her, his heart gave a little bump, like a geiger responding to an ionizing particle. It always did that, although they had been together for twelve years, and married for ten. Then she saw him and smiled, and he came over, fanning himself with his sun helmet, and dropped into a chair beside her.

"Did you call our center for a jeep?" he asked. When she nodded, he continued: "I thought you would, so I didn't bother." it."



For a while, they sat silent, looking with bored distaste at the swarm of steel-helmeted Army riflemen and tommy-gunners guarding the transfer platforms and the vehicles gate. A string of trucks had been passed under heavy guard into the clearance compound: they were now unloading supplies onto a platform, at the other side of which other trucks were backed waiting to receive the shipment. A hundred

feet of bare concrete and fifty armed soldiers separated these from the men and trucks from the outside, preventing contact.

"And still they can't stop leaks," Karen said softly. "And we get blamed for MacLeod nodded and started to say something, when his attention was drawn by a commotion on the driveway. A big Tucker limousine with an O.D. paint job and the single-starred flag of a brigadier general was approaching, hornning impatiently. In the back seat MacLeod could see a heavy-shouldered figure with the face of a bad-tempered great Dane—General Daniel Nayland, the military commander of Tonto Basin. The inside guards jumped to attention and saluted; the barrier shot up as though rocket-propelled, and the car slid through; the barrier slammed down behind it. On the other side, the guards were hurling themselves into a frenzy of saluting. Karen made a face after the receding car and muttered something in Hindustani. She probably didn't know the literal meaning of what she had called General Nayland, but she understood that it was a term of extreme opprobrium.

Her husband contributed: "His idea of Heaven would be a huge research establishment, where he'd be a five-star general, and Galileo, Newton, Priestley, Dalton, Maxwell, Planck and Einstein would be tech sergeants."

"And Marie Curie and Lise Meitner would be Wac corporals," Karen added. "He really hates all of us, doesn't he?"

"He hates our Team," MacLeod replied. "In the first place, we're a lot of civilians, who aren't subject to his regulations and don't have to salute him. We're working under the United Nations' Free Scientists Convention, not under contract with the United States Government, and as the United States participates in the Convention on a treaty basis, our compact

has the force of a treaty obligation.⁷ It gives us what amounts to extraterritoriality, like Europeans in China during the Nineteenth Century. So we have our own transport, for which he must furnish petrol, and our own armed guard, and we fly our own flag over Team Center, and that gripes him as much as anything else. That and the fact that we're foreigners. So wouldn't he love to make this espionage rap stick on us!"

"And our compact specifically gives the United States the right to take action against us in case we endanger the national security," Karen added. She stuffed her cigarette into the not-too-recently-emptied receiver beside her chair, her blue eyes troubled. "You know, some of us could get shot over this, if we're not careful. Dunc, does it really have to be one of our own people who—?"

"I don't see how it could be anybody else," MacLeod said. "I don't like the idea any more than you do, but there it is."

"Well, what are we going to do? Is there nobody whom we can trust?"

"Among the technicians and guards, yes. I could think of a score who are absolutely loyal. But among the Team itself—the top researchers—there's nobody I'd take a chance on but Kato Sugihara."

"Can you even be sure of him? I'd hate to think of him as a traitor, but—"

"I have a couple of reasons for eliminating Kato," MacLeod said. "In the first place, outside nucleonic and binding-force physics, there are only three things he's interested in. Jitterbugging, hand-painted neckties, and Southern-style cooking. If he went over to the Axis, he wouldn't be able to get any of those. Then,

he only spends about half his share of the Team's profits, and turns the rest back into the Team Fund. He has a credit of about a hundred thousand dollars, which he'd lose by leaving us. And then, there's another thing. Kato's father was killed on Guadalcanal, in 1942, when he was only five. After that he was brought up in the teachings of Bushido by his grandfather, an old-time samurai. Bushido is open to some criticism, but nobody can show where double-crossing your own gang is good Bushido. And today, Japan is allied with the United States, and in any case, he wouldn't help the Axis. The Japanese'll forgive Russia for that Mussolini back-stab in 1945 after the Irish start building monuments to Cromwell."

A light-blue jeep, lettered *MacLeod Research Team* in cherry-red, was approaching across the wide concrete apron. MacLeod grinned.

"Here it comes. Fasten your safety belt when you get in; that's Ahmed driving."

Karen looked at her watch. "And it's almost time for dinner. You know, I dread the thought of sitting at the table with the others, and wondering which of them is betraying us."

"Only nine of us, instead of thirteen, and still one is a Judas," MacLeod said. "I suppose there's always a place for Judas, at any table."

The MacLeod Team dined together, apart from their assistants and technicians and students. This was no snobbish attempt at class-distinction: matters of Team policy were often discussed at the big round table, and the more confidential details of their work. People who have only their knowledge and their ideas to sell are wary about bandying either loosely, and the six men and three women who faced each other across the twelve-foot diameter of the teakwood table had no other stock-in-trade.

⁷ In the original text the MacLeod Team had contracted directly with the Western Union. Thus, the nature of the relationship between the MacLeod Team and the United States—including the concept of a formal "Free Scientists Convention"—are added here.

They were nine people of nine different nationalities, or they were nine people of the common extra-nationality of science. That Duncan MacLeod, their leader, had grown up in the Transvaal and his wife had been born in the Swedish university town of Upsala was typical not only of their own group but of the hundreds of independent research-teams that had sprung up after the Second World War. The scientist-adventurer may have been born of the relentless struggle for scientific armament supremacy among nations and the competition for improved techniques among industrial corporations during the late 1950s and early '60s, but he had been begotten when two masses of uranium came together at the top of a steel tower in New Mexico in 1945. And, because scientific research is pre-eminently a matter of pooling brains and efforts, the independent scientists had banded together into teams whose leaders acquired power greater than that of any *condottiere* captain of Renaissance Italy.

Duncan MacLeod, sitting outwardly relaxed and merry and secretly watchful and bitterly sad, was such a free-captain of science. One by one, the others had rallied around him, not because he was a greater physicist than they, but because he was a bolder, more clever, less scrupulous adventurer, better able to guide them through the maze of international power-politics and the no less ruthless if less nakedly violent world of Big Industry.

There was his wife, Karen Hilquist, the young metallurgist who, before she was twenty-five, had perfected a new hardening process for SKF and an incredibly tough gun-steel for the Bofors works. In the few minutes since they had returned to Team Center, she had managed to change her coveralls for a skirt and blouse, and do something intriguing with her hair.

And there was Kato Sugihara, looking younger than his twenty-eight years,

who had begun to demonstrate the existence of whole orders of structure below the level of nuclear particles.

There was Suzanne Maillard, her gray hair upswept from a face that had never been beautiful but which was alive with something rarer than mere beauty: she possessed, at the brink of fifty, a charm and smartness that many women half her age might have envied, and she knew more about cosmic rays than any other person living.

And Adam Lowiewski, his black mustache contrasting so oddly with his silver hair, frantically scribbling equations on his doodling-pad, as though his racing fingers could never keep pace with his brain, and explaining them, with obvious condescension, to the boyish-looking Japanese beside him. He was one of the greatest of living mathematicians by anybody's reckoning—the greatest, by his own.

And Sir Neville Lawton, the electronics expert, with thinning red-gray hair and meticulously-clipped mustache, who always gave the impression of being in evening clothes, even when, as now, he was dressed in faded khaki.

And Heym ben-Hillel, the Israeli quantum and wave-mechanics man, his heaping dinner plate an affront to the Laws of Moses, his white hair a fluffy, tangled chaos, laughing at an impassively-delivered joke the English knight had made.

And Rudolf von Heldenfeld, with a thin-lipped killer's mouth and a frozen face that never betrayed its owner's thoughts—he was the specialist in magnetic currents and electromagnetic fields.

And Farida Khourouglu, the Turkish girl whom MacLeod and Karen had found begging in the streets of Istanbul, ten years ago, and who had grown up following the fortunes of the MacLeod Team on every continent and in a score of nations. It was

doubtful if she had ever had a day's formal schooling in her life, but now she was secretary of the Team, with a grasp of physics that would have shamed many a professor. She had grown up a beauty, too, with the large dark eyes and jet-black hair and paper-white skin of her race. She and Kato Sugihara were very much in love.

A good team; the best physics-research team in a power-mad, knowledge-hungry world. MacLeod thought, toying with the stem of his wineglass, of some of their triumphs: The West Australia Atomic Power Plant. The Ibero-American Confederation's⁸ Segovia Plutonium Works, which had got them all titled as Grandees of the restored Spanish Monarchy. The sea-water chemical extraction plant in Basra.⁹ The hard-won victory over a seemingly insoluble problem in the Belgian Congo uranium mines—He thought, too, of the dangers they had faced together, in a world where soldiers must use the weapons of science and scientists must learn the arts of violence. Of the treachery of the Indian Communists¹⁰, for whom they had once

worked; of the intrigues and plots which had surrounded them in Spain; of the many attempted kidnappings and assassinations; of the time in Calcutta¹¹ when they had fought with pistols and tommy guns and snatched-up clubs and flasks of acid to defend their laboratories.

A good team—before the rot of treason had touched it. He could almost smell the putrid stench of it, and yet, as he glanced from face to face, he could not guess the traitor. And he had so little time—

Kato Sugihara's voice rose to dominate the murmur of conversation around the table.

"I think I am getting somewhere on my photon-neutrino-electron interchange-cycle," he announced. "And I think it can be correlated to the collapsed-matter research."

"So?" von Heldenfeld looked up in interest. "And not with the problem of what goes on in the 'hot layer' surrounding the Earth?"

"No, Suzanne talked me out of that idea," the Japanese replied. "That's just a secondary effect of the effect of cosmic rays and solar radiations on the order of particles existing at that level. But I think that I have the key to the problem of collapsing matter to plate the hull of the spaceship."

"That's interesting," Sir Neville Lawton commented. "How so?"

"Well, you know what happens when a photon comes in contact with the atomic structure of matter," Kato said. "There may be an elastic collision, in which the photon

⁸ In the original text the "Ibero-American Confederation" is one of the "four great power-blocs." This addition preserves the concept of a second-tier Ibero-American bloc even though the canonical geopolitical circumstances of this era are assumed to be bipolar. The additional concept in the original text of the "Cavor—presumably a reference to the protagonist of H.G. Wells' *The First Men in the Moon*—Project," the Confederation's effort to establish a lunar base, was not preserved.

⁹ In the original text this project was located in Puerto Rico under the patronage of Blake Hartley's Associated Enterprises. This reference would tie this canonical version to the non-canonical stories "Time and Time Again" and "Day of the Moron." Instead the project has been relocated to Basra where the MacLeod Team recruited Ahmed Abdel-Rahman, its Arab driver.

¹⁰ The "Islamic Kaliphate" of the original text is replaced here with the canonical "Indian Communists" of "The Edge of the Knife." The additional concept in the original text of the "Al-

Borak—presumably a reference to the mythological creature that bore the Prophet Muhammad to heaven—Undertaking," the Kaliphate's effort to establish a lunar base, was not preserved.

¹¹ "Basra" of the original version—presumably the capital of the Islamic Kaliphate—is replaced here with "Calcutta," a traditional stronghold of the historical Indian Communist Party.

merely bounces off. Macroscopically, that's the effect we call reflection of light. Or there may be an inelastic collision, when the photon hits an atom and knocks out an electron—the old photoelectric effect. Or, the photon may be retained for a while and emitted again relatively unchanged—the effect observed in luminous paint. Or, the photon may penetrate, undergo a change to a neutrino, and either remain in the nucleus of the atom or pass through it, depending upon a number of factors. All this, of course, is old stuff; even the photon-neutrino interchange has been known since the mid-'50s, when the Gamow neutrino-counter was developed. But now we come to what you have been so good as to christen the Sugihara Effect—the neutrino picking up a negative charge and, in effect, turning into an electron, and then losing its charge, turning back into a neutrino, and then, as in the case of metal heated to incandescence, being emitted again as a photon.

"At first, we thought this had no connection with the spaceship insulation problem we are charged to work out, and we agreed to keep this effect a Team secret until we could find out if it had commercial possibilities. But now, I find that it has a direct connection with the collapsed-matter problem. When the electron loses its negative charge and reverts to a neutrino, there is a definite accretion of interatomic binding-force, and the molecule, or the crystalline lattice or whatever tends to contract, and when the neutrino becomes a photon, the nucleus of the atom contracts."

Heym ben-Hillel was sitting oblivious to everything but his young colleague's words, a slice of the flesh of the unclean beast impaled on his fork and halfway to his mouth.

"Yes! Certainly!" he exclaimed. "That would explain so many things I have wondered about: And of course, there are

other forces at work which, in the course of nature, balance that effect—"

"But can the process be controlled?" Suzanne Maillard wanted to know. "Can you convert electrons to neutrinos and then to photons in sufficient numbers, and eliminate other effects that would cause compensating atomic and molecular expansion?"

Kato grinned, like a tomcat contemplating the bones of a fish he has just eaten.

"Yes, I can. I have." He turned to MacLeod. "Remember those bullets I got from you?" he asked.

MacLeod nodded. He handloaded for his .38-special, and like all advanced cases of handloading-fever, he was religiously fanatical about uniformity of bullet weights and dimensions. Unlike most handloaders, he had available the instruments to secure such uniformity.

"Those bullets are as nearly alike as different objects can be," Kato said. "They weigh 158 grains, and that means one-five-eight-point-zero-zero-zero-practically-nothing. The diameter is .35903 inches. All right; I've been subjecting those bullets to different radiation-bombardments, and the best results have given me a bullet with a diameter of .35892 inches, and the weight is unchanged. In other words, there's been no loss of mass, but the mass had contracted. And that's only been the first test."

"Well, write up everything you have on it, and we'll lay out further experimental work," MacLeod said. He glanced around the table. "So far, we can't be entirely sure. The shrinkage may be all in the crystalline lattice: the atomic structure may be unchanged. What we need is matter that is really collapsed."

"I'll do that," Kato said. "Farida, I'll have all my data available for you before noon tomorrow: you can make up copies for all Team members."

"Make mine on microfilm, for projection," von Heldenfeld said.

"Mine, too," Sir Neville Lawton added.

"Better make microfilm copies for everybody," Heym ben-Hillel suggested. "They're handier than type-script."

MacLeod rose silently and tiptoed around behind his wife and Rudolf von Heldenfeld, to touch Kato Sugihara on the shoulder.

"Come on outside, Kato," he whispered. "I want to talk to you."

The Japanese nodded and rose, following him outside onto the roof above the laboratories. They walked over to the edge and stopped at the balustrade.

"Kato, when you write up your stuff, I want you to falsify everything you can. Put it in such form that the data will be absolutely worthless, but also in such form that nobody, not even Team members, will know it has been falsified. Can you do that?"

Kato's almond-shaped eyes widened. "Of course I can, Dunc," he replied. "But why—?"

"I hate to say this, but we have a traitor in the Team. One of those people back in the dining room is selling us out to the Eastern Axis. I know it's not Karen, and I know it's not you, and that's as much as I do know, now."

The Japanese sucked in his breath in a sharp hiss. "You wouldn't say that unless you were sure, Dunc," he said.

"No. At about 1000 this morning, Dr. Weissberg, the civilian director, called me to his office. I found him very much upset. He told me that General Nayland is accusing us—by which he meant this Team—of furnishing secret information on our subproject to Axis agents. He said that British Intelligence agents at Smolensk had learned that the Red Triumph laboratories

there were working along lines of research originated at MacLeod Team Center here. They relayed the information to Central Intelligence, and Central Intelligence passed it on to Army Intelligence, and now Counter Espionage is riding Nayland about it, and he's trying to make us the goat."

"He would love to get some of us shot," Kato said. "And that could happen. They took a long time getting tough about espionage in this country, but when Americans get tough about something, they get tough right. But look here; we handed in our progress-reports to Felix Weissberg, and he passed them on to Nayland. Couldn't the leak be right in Nayland's own HQ?"

"That's what I thought, at first," MacLeod replied. "Just wishful thinking, though. Fact is, I went up to Nayland's HQ and had it out with him; accused him of just that. I think I threw enough of a scare into him to hold him for a couple of days. I wanted to know just what it was the Axis was supposed to have got from us, but he wouldn't tell me. That, of course, was classified-stuff."

"Well?"

"Well then, Karen and I got our digestive tracts emptied and went in to town, where I could use a phone that didn't go through a military switch-board, and I put through a call to the President's son.¹² He owes us a break, after the work we did in Puerto Rico. I told him all I wanted was some information to help clear ourselves, and he told me to wait a half an hour and then call Counter Espionage Office in Washington and talk to General Hammond."

"Ha! If the President's for us, what are we worried about?" Kato asked. "I always knew his son was the power back of

¹² References in the original text to President Hartley, his son Allan Hartley, and their firm Associated Enterprises have been removed so as not to tie this canonical version to the non-canonical stories "Time and Time Again" and "Day of the Moron."

the Puerto Rican job and his father was the front-man: I'll bet it's the same with the Government."

"The President's for us as long as our nose is clean. If we let it get dirty, we get it bloodied, too. We have to clean it ourselves," MacLeod told him. "But here's what Hammond gave me: The Axis knows all about our collapsed-matter experiments with zinc, titanium and nickel. They know about our theoretical work on cosmic rays, including Suzanne's work up to about a month ago. They know about that effect Sir Neville and Heym discovered two months ago." He paused. "And they know about the photon-neutrino-electron interchange."

Kato responded to this with a gruesome double-take that gave his face the fleeting appearance of an ancient samurai war mask.

"That wasn't included in any report we ever made," he said. "You're right: the leak comes from inside the Team. It must be Sir Neville, or Suzanne, or Heym ben-Hillel, or Adam Lowiewski, or Rudolf von Heldenfeld, or—No! No, I can't believe it could be Farida!" He looked at MacLeod pleadingly. "You don't think she could have?"

"No, Kato. The Team's her whole life, even more than it is mine. She came with us when she was only twelve, and grew up with us. She doesn't know any other life than this, and wouldn't want any other. It has to be one of the other five."

"Well, there's Suzanne," Kato began. "She had to clear out of France because of political activities, after the collapse of the Fourth Republic and the establishment of the Rightist Directoire in '57. And she worked with Joliot-Curie, and she was at the University of Louvain in the early '50s, when that place was crawling with Commies."

"And that brings us to Sir Neville," MacLeod added. "He dabbles in

spiritualism; he and Suzanne do planchette-seances. A planchette can be manipulated. Maybe Suzanne produced a communication advising Sir Neville to help the Axis."

"Could be. Then, how about Lowiewski? He's a Pole who can't go back to Poland, and Poland's an Axis country." Kato pointed out. "Maybe he'd sell us out for amnesty, though why he'd want to go back there, the way things are now—?"

"His vanity. You know, missionary-school native going back to the village wearing real pants, to show off to the savages. Used to be a standing joke, down where I came from." MacLeod thought for a moment. "And Rudolf: he's always had a poor view of the democratic system of government. He might feel more at home with the Axis. Of course, the Ruskis killed his parents in 1945—"

"So what?" Kato retorted. "The Americans killed my father in 1942, but I'm not making an issue out of it. That was another war; Japan's an Allied country, now. So's Germany—How about Heym, by the way? Remember when the Axis wanted us to come to Russia and do the same work we're doing here?"

"I remember that after we turned them down, somebody tried to kidnap Karen," MacLeod said grimly. "I remember a couple of Russians got rather suddenly dead trying it, too."

"I wasn't thinking of that. I was thinking of our round-table argument when the proposition was considered. Heym was in favor of accepting. Now that, I would say, indicates either Communist sympathies or an overtrusting nature," Kato submitted. "And a lot of grade-A traitors have been made out of people with trusting natures."

MacLeod got out his pipe and lit it. For a long time, he stared out across the mountain-ringed vista of sagebrush, dotted at wide intervals with the bulks of research-centers and the red roofs of the villages.

"Kato, I think I know how we're going to find out which one it is," he said. "First of all, you write up your data, and falsify it so that it won't do any damage if it gets into Axis hands. And then—"

The next day started in an atmosphere of suppressed excitement and anxiety, which, beginning with MacLeod and Karen and Kato Sugihara, seemed to communicate itself by contagion to everybody in the MacLeod Team's laboratories. The top researchers and their immediate assistants and students were the first to catch it; they ascribed the tension under which their leader and his wife and the Japanese labored to the recent developments in the collapsed-matter problem. Then, there were about a dozen implicitly-trusted technicians and guards, who had been secretly gathered in MacLeod's office the night before and informed of the crisis that had arisen. Their associates could not miss the fact that they were preoccupied with something unusual.

They were a variegated crew; men who had been added to the Team in every corner of the world. There was Ahmed Abd-el-Rahman, the Arab jeep-driver who had joined them in Basra. There was the wiry little Greek whom everybody called Alex Unpronounceable. There was an Italian, and two Chinese, and a cashiered French Air Force officer, and a Malay, and the son of an English earl who insisted that his name was Bertie Wooster. They had sworn themselves to secrecy, had heard MacLeod's story with a polylingual burst of pious or blasphemous exclamations, and then they had scattered, each to the work assigned him.

MacLeod had risen early and submitted to the ordeal of the search to leave the reservation and go to town again, this time for a conference at the shabby back-street cigar store that concealed a Counter

Espionage center. He had returned just as Farida Khourouglu was finishing the microfilm copies of Kato's ingeniously-concocted pseudo-data. These copies were distributed at noon, while the Team was lunching, along with carbons of the original type-script.

He was the first to leave the table, going directly to the basement, where Alex Unpronounceable and the man who had got his alias from the works of P.G. Wodehouse were listening in on the telephone calls going in and out through the Team-center switch-board, and making recordings. For two hours, MacLeod remained with them. He heard Suzanne Maillard and some woman who was talking from a number in the Army married-officers' settlement making arrangements about a party. He heard Rudolf von Heldenfeld make a date with some girl. He listened to a violent altercation between the Team chef and somebody at Army Quartermaster's HQ about the quality of a lot of dressed chicken. He listened to a call that came in for Adam Lowiewski, the mathematician.

"This is Joe," the caller said. "I've got to go to town late this afternoon, but I was wondering if you'd have time to meet me at the Recreation House at Oppenheimer Village for a game of chess. I'm calling from there, now."

"Fine; I can make it," Lowiewski's voice replied. "I'm in the middle of a devil's own mathematical problem; maybe a game of chess would clear my head. I have a new queen's-knight gambit I want to try on you, anyhow."

Bertie Wooster looked up sharply. "Now there; that may be what we're—"

The telephone beside MacLeod rang. He scooped it up; named himself into it.

It was Ahmed Abd-el-Rahman. "Look, chief; I tail this guy to Oppenheimer Village," the Arab, who had learned English from American movies, answered. "He goes

into the rec-joint. I slide in after him, an' he ain't in sight. I'm lookin' around for him, see, when he comes bargin' outa the Don Ameche box. Then he grabs a table an' a beer. What next?"

"Stay there; keep an eye on him," MacLeod told him. "If I want you, I'll call."

MacLeod hung up and straightened, feeling under his packet for his .38-special.

"That's it, boys," he said. "Lowiewski. Come on."

"Hah!" Alex Unpronounceable had his gun out and was checking the cylinder. He spoke briefly in description of the Polish mathematician's ancestry, physical characteristics, and probable post-mortem destination. Then he put the gun away, and the three men left the basement.

For minutes that seemed like hours, MacLeod and the Greek waited on the main floor, where they could watch both the elevators and the stairway. Bertie Wooster had gone up to alert Kato Sugihara and Karen. Then the door of one of the elevators opened and Adam Lowiewski emerged, with Kato behind him, apparently lost in a bulky scientific journal he was reading. The Greek moved in from one side, and MacLeod stepped in front of the Pole.

"Hi, Adam," he greeted. "Have you looked into that batch of data yet?"

"Oh, yes. Yes." Lowiewski seemed barely able to keep his impatience within the bounds of politeness. "Of course, it's out of my line, but the mathematics seems sound." He started to move away.

"You're not going anywhere," MacLeod told him. "The chess game is over. The red pawns are taken—the one at Oppenheimer Village, and the one here."

There was a split second in which Lowiewski struggled—almost successfully—to erase the consternation from his face.

"I don't know what you're talking about," he began. His right hand started to slide under his left coat lapel.

MacLeod's Colt was covering him before he could complete the movement. At the same time, Kato Sugihara dropped the paper-bound periodical, revealing the thin-bladed knife he had concealed under it. He stepped forward, pressing the point of the weapon against the Pole's side. With the other hand, he reached across Lowiewski's chest and jerked the pistol from his shoulder-holster. It was one of the elegant little .32 Beretta 1954 Model automatics.

"Into the elevator," MacLeod ordered. An increasing pressure of Kato's knife emphasized the order. "And watch him; don't let him get rid of anything," he added to the Greek.

"If you would explain this outrage—" Lowiewski began. "I assume it is your idea of a joke—"

Without even replying, MacLeod slammed the doors and started the elevator upward, letting it rise six floors to the living quarters. Karen Hilquist and the aristocratic black-sheep who called himself Bertie Wooster were waiting when he opened the door. The Englishman took one of Lowiewski's arms; MacLeod took the other. The rest fell in behind as they hustled the captive down the hall and into the big sound-proofed dining room. They kept Lowiewski standing, well away from any movable object in the room; Alex Unpronounceable took his left arm as MacLeod released it and went to the communicator and punched the all-outlets button.

"Dr. Maillard; Dr. Sir Neville Lawton; Dr. ben-Hillel; Dr. von Heldenfeld; Mlle. Khouroglu," he called. "Dr. MacLeod speaking. Come at once, repeat at once, to the round table—Dr. Maillard; Dr. Sir Neville Lawton—"

Karen said something to the Japanese and went outside. For a while, nobody spoke. Kato came over and lit a cigarette in the bowl of MacLeod's pipe. Then the other Team members entered in a body. Evidently Karen had intercepted them in the hallway and warned them that they would find some unusual situation inside; even so, there was a burst of surprised exclamations when they found Adam Lowiewski under detention.

"Ladies and gentlemen," MacLeod said, "I regret to tell you that I have placed our colleague, Dr. Lowiewski, under arrest. He is suspected of betraying confidential data to agents of the Eastern Axis. Yesterday, I learned that data on all our work here, including Team-secret data on the Sugihara Effect, had got into the hands of the Axis and was being used in research at the Smolensk laboratories. I also learned that General Nayland blames this Team as a whole with double-dealing and selling this data to the Axis. I don't need to go into any lengthy exposition of General Nayland's attitude toward this Team, or toward Free Scientists as a class, or toward the research-compact system. Nor do I need to point out that if he pressed these charges against us, some of us could easily suffer death or imprisonment."

"So he had to have a victim in a hurry, and pulled my name out of the hat," Lowiewski sneered.

"I appreciate the gravity of the situation," Sir Neville Lawton said. "And if the Sugihara Effect was among the data betrayed, I can understand that nobody but one of us could have betrayed it. But why, necessarily, should it be Adam? We all have unlimited access to all records and theoretical data."

"Exactly. But collecting information is the smallest and easiest part of espionage. Almost anybody can collect information. Where the spy really earns his pay is in

transmitting of information. Now, think of the almost fantastic security measures in force here, and consider how you would get such information, including masses of mathematical data beyond any human power of memorization, out of this reservation."

"Ha, nobody can take anything out," Suzanne Maillard said. "Not even one's breakfast. Is Adam accused of sorcery, too?"

"The only material things that are allowed to leave this reservation are sealed cases of models and data shipped to the different development plants. And the Sugihara Effect never was reported, and wouldn't go out that way," Heym ben-Hillel objected.

"But the data on the Sugihara Effect reached Smolensk," MacLeod replied. "And don't talk about Darwin and Wallace: it wasn't a coincidence. This stuff was taken out of the Tonto Basin Reservation by the only person who could have done so, in the only way that anything could leave the reservation without search. So I had that person shadowed, and at the same time I had our telephone lines tapped, and eavesdropped on all calls entering or leaving this center. And the person who had to be the spy-courier called Adam Lowiewski, and Lowiewski made an appointment to meet him at the Oppenheimer Village Recreation House to play chess."

"Very suspicious, very suspicious," Lowiewski derided. "I receive a call from a friend at the same time that some anonymous suspect is using the phone. There are only five hundred telephone conversations a minute on this reservation."

"Immediately, Dr. Lowiewski attempted to leave this building," MacLeod went on. "When I intercepted him, he tried to draw a pistol. This one." He exhibited the Beretta. "I am now going to have Dr. Lowiewski searched, in the presence of all

of you." He nodded to Alex and the Englishman.

They did their work thoroughly. A pile of Lowiewski's pocket effects was made on the table; as each item was added to it, the Pole made some sarcastic comment.

"And that pack of cigarettes: unopened," he jeered. "I suppose I communicated the data to the manufacturers by telepathy, and they printed it on the cigarette papers in invisible ink."

"Maybe not. Maybe you opened the pack, and then resealed it," Kato suggested. "A heated spatula under the cellophane; like this."

He used the point of his knife to illustrate. The cellophane came unsealed with surprising ease: so did the revenue stamp. He dumped out the contents of the pack: sixteen cigarettes, four cigarette tip-ends, four bits snapped from the other ends—and a small aluminum microfilm capsule.

Lowiewski's face twitched. For an instant, he tried vainly to break loose from the men who held him. Then he slumped into a chair. Heym ben-Hillel gasped in shocked surprise. Suzanne Maillard gave a short, felinelike cry. Sir Neville Lawton looked at the capsule curiously and said: "Well, my sainted Aunt Agatha!"

"That's the capsule I gave him, at noon," Farida Khourouglu exclaimed, picking it up. She opened it and pulled out a roll of colloidex projection film. There was also a bit of cigarette paper in the capsule, upon which a notation had been made in Cyrillic characters.

Rudolf von Heldenfeld could read Russian. "'Data on new development of photon-neutrino-electron interchange. 22 July, '65. Vladmir.' Vladmir, I suppose, is this *schweinhund's* code name," he added.

The film and the paper passed from hand to hand. The other members of the

Team sat down; there was a tendency to move away from the chair occupied by Adam Lowiewski. He noticed this and sneered.

"Afraid of contamination from the moral leper?" he asked. "You were glad enough to have me correct your stupid mathematical errors."

Kato Sugihara picked up the capsule, took a final glance at the cigarette pack, and said to MacLeod: "I'll be back as soon as this is done." With that, he left the room, followed by Bertie Wooster and the Greek.

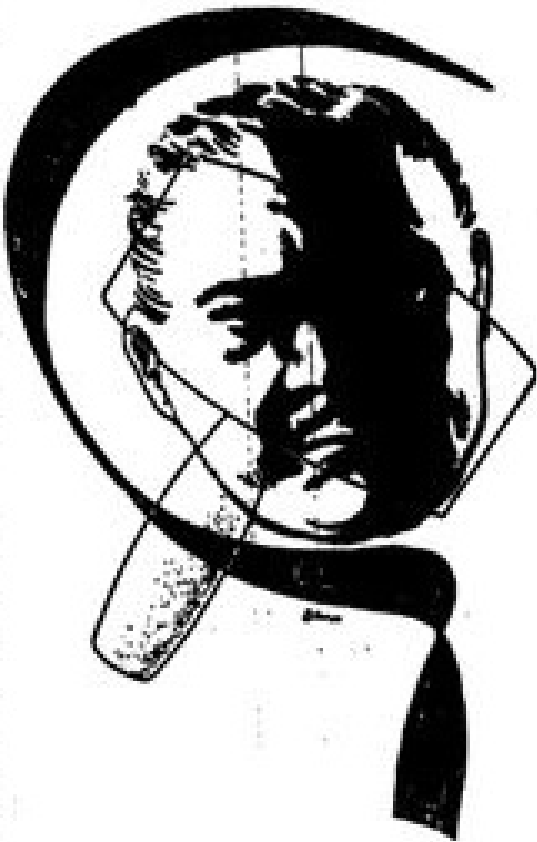
Heym ben-Hillel turned to the others: his eyes had the hurt and puzzled look of a dog that has been kicked for no reason. "But why did he do this?" he asked.

"He just told you," MacLeod replied. "He's the great Adam Lowiewski. Checking math for a physics-research team is beneath his dignity. I suppose the Axis offered him a professorship at Stalin University." He was watching Lowiewski's face keenly. "No," he continued. "It was probably the mathematics chair of the Soviet Academy of Sciences."

"But who was this person who could smuggle microfilm out of the reservation?" Suzanne Maillard wanted to know. "Somebody has invented teleportation, then?"

MacLeod shook his head. "It was General Nayland's chauffeur. It had to be. General Nayland's car is the only thing that gets out of here without being searched. The car itself is serviced at Army vehicles pool; nobody could hide anything in it for a confederate to pick up outside. Nayland is a stuffed shirt of the first stuffing, and a tinpot Hitler to boot, but he is fanatically and incorruptibly patriotic. That leaves the chauffeur. When Nayland's in the car, nobody even sees him; he might as well be a robot steering-device. Old case of Father Brown's Invisible Man. So, since he had to

be the courier, all I did was have Ahmed Abd-el-Rahman shadow him, and at the same time tap our phones. When he contacted Lowiewski, I knew Lowiewski was our traitor."



Sir Neville Lawton gave a strangling laugh. "Oh, my dear Aunt Fanny! And Nayland goes positively crackers on security. He gets goose pimples every time he hears somebody saying 'E = mc²', for fear an Axis spy might hear him. It's a wonder he hasn't put the value of Planck's Constant on the classified list. He sets up all these fantastic search rooms and barriers, and then he drives through the gate, honking his bloody horn, with his chauffeur's pockets full of top secrets. Now I've seen everything!"

"Not quite everything," MacLeod said. "Kato's going to put that capsule in another cigarette pack, and he'll send one of

his lab girls to Oppenheimer Village with it, with a message from Lowiewski to the effect that he couldn't get away. And when this chauffeur takes it out, he'll run into a Counter Espionage road-block on the way to town. They'll shoot him, of course, and they'll probably transfer Nayland to the Mississippi Valley Flood Control Project, where he can't do any more damage. At least, we'll have him out of our hair."

"If we have any hair left," Heym ben-Hillel gloomed. "You've got Nayland into trouble, but you haven't got us out of it."

"What do you mean?" Suzanne Maillard demanded. "He's found the traitor and stopped the leak."

"Yes, but we're still responsible, as a team, for this betrayal," the Israeli pointed out. "This Nayland is only a symptom of the enmity which politicians and militarists feel toward the Free Scientists, and of their opposition to the research-compact system. Now they have a scandal to use. Our part in stopping the leak will be ignored; the publicity will be about the treason of a Free Scientist."

"That's right," Sir Neville Lawton agreed. "And that brings up another point. We simply can't hand this fellow over to the authorities. If we do, we establish a precedent that may wreck the whole system under which we operate."

"Yes: it would be a fine thing if governments start putting Free Scientists on trial and shooting them," Farida Khourouglu supported him. "In a few years, none of us would be safe."

"But," Suzanne cried, "you are not arguing that this species of an animal be allowed to betray us unpunished?"

"Look," Rudolf von Heldenfeld said. "Let us give him his pistol, and one cartridge, and let him remove himself like a gentleman. He will spare himself the humiliation of trial and execution, and us all

the embarrassment of having a fellow scientist pilloried as a traitor."

"Now there's a typical Prussian suggestion," Lowiewski said.

Kato Sugihara, returning alone, looked around the table. "Did I miss something interesting?" he asked.

"Oh, very," Lowiewski told him. "Your Junker friend thinks I should perform *seppuku*."

Kato nodded quickly. "Excellent idea!" he congratulated von Heldenfeld. "If he does, he'll save everybody a lot of trouble. Himself included." He nodded again. "If he does that, we can protect his reputation, after he's dead."

"I don't really see how," Sir Neville objected. "When the Counter Espionage people were brought into this, the thing went out of our control."

"Why, this chauffeur was the spy, as well as the spy-courier," MacLeod said. "The information he transmitted was picked up piecemeal from different indiscreet lab-workers and students attached to our team. Of course, we are investigating, mumble-mumble. Naturally, no one will admit, mumble-mumble. No stone will be left unturned, mumble-mumble. Disciplinary action, mumble-mumble."

"And I suppose he got that microfilm piecemeal, too?" Lowiewski asked.

"Oh, that?" MacLeod shrugged. "That was planted on him. One of our girls arranged an opportunity for him to steal it from her, after we began to suspect him. Of course, Kato falsified everything he put into that report. As information, it's worthless."

"Worthless? It's better than that," Kato grinned. "I'm really sorry the Axis won't get it. They'd try some of that stuff out with the big betatron at Smolensk, and a microsecond after they'd throw the switch, Smolensk would look worse than Hiroshima did."

"Well, why would our esteemed colleague commit suicide, just at this time?" Karen Hilquist asked.

"Maybe plutonium poisoning." Farida suggested. "He was doing something in the radiation-lab and got some Pu in him, and of course, shooting's not as painful as that. So—"

"Oh, my dear!" Suzanne protested. "That but stinks! The great Adam Lowiewski, descending from his pinnacle of pure mathematics, to perform a vulgar experiment? With actual *things*?" The Frenchwoman gave an exaggerated shudder. "Horrors!"

"Besides, if our people began getting radioactive, somebody would be sure to claim we were endangering the safety of the whole establishment, and the national-security clause would be invoked, and some nosy person would put a geiger on the dear departed," Sir Neville added.

"Nervous collapse." Karen said. "According to the laity, all scientists are crazy. Crazy people kill themselves. Adam Lowiewski was a scientist. Ergo Adam Lowiewski killed himself. Besides, a nervous collapse isn't instrumentally detectable."

Heym ben-Hillel looked at MacLeod, his eyes troubled.

"But, Dunc; have we the right to put him to death, either by his own hand or by an Army firing squad?" he asked. "Remember he is not only a traitor; he is one of the world's greatest mathematical minds. Have we a right to destroy that mind?"

Von Heldenfeld shouted, banging his fist on the table: "I don't care if he's Gauss and Riemann and Lorenz and Poincare and Minkowski and Whitehead and Einstein, all collapsed into one! The man is a stinking traitor, not only to us, but to all scientists and all sciences! If he doesn't shoot himself, hand him over to the United States, and let

them shoot him! Why do we go on arguing?"

Lowiewski was smiling, now. The panic that had seized him in the hallway below, and the desperation when the cigarette pack had been opened, had left him.

"Now I have a modest proposal, which will solve your difficulties," he said. "I have money, papers, clothing, everything I will need, outside the reservation. Suppose you just let me leave here. Then, if there is any trouble, you can use this fiction about the indiscreet underlings, without the unnecessary embellishment of my suicide—"

Rudolf von Heldenfeld let out an inarticulate roar of fury. For an instant he was beyond words. Then he sprang to his feet.

"Look at him!" he cried. "Look at him, laughing in our faces, for the dupes and fools he thinks we are!" He thrust out his hand toward MacLeod. "Give me the pistol! He won't shoot himself; I'll do it for him!"

"It would work, Dunc. Really, it would," Heym ben-Hillel urged.

"No," Karen Hilquist contradicted. "If he left here, everybody would know what had happened, and we'd be accused of protecting him. If he kills himself, we can get things hushed up: dead traitors are good traitors. But if he remains alive, we must disassociate ourselves from him by handing him over."

"And wreck the prestige of the Team?" Lowiewski asked.

"At least you will not live to see that!" Suzanne retorted.

Heym ben-Hillel put his elbows on the table and his head in his hands. "Is there no solution to this?" he almost wailed.

"Certainly: an obvious solution," MacLeod said, rising. "Rudolf has just stated it. Only I'm leader of this Team, and

there are, of course, jobs a team-leader simply doesn't delegate." The safety catch of the Beretta clicked a period to his words.

"No!" The word was wrenched almost physically out of Lowiewski. He, too, was on his feet, a sudden desperate fear in his face. "No! You wouldn't murder me!"

"The term is 'execute'," MacLeod corrected. Then his arm swung up, and he shot Adam Lowiewski through the forehead.

For an instant, the Pole remained on his feet. Then his knees buckled, and he fell forward against the table, sliding to the floor.

MacLeod went around the table, behind Kato Sugihara and Farida Khourouglu and Heym ben-Hillel, and stood looking down at the man he had killed. He dropped the automatic within a few inches of the dead renegade's outstretched hand, then turned to face the others.

"I regret," he addressed them, his voice and face blank of expression, "to announce that our distinguished colleague, Dr. Adam Lowiewski, has committed suicide by shooting, after a nervous collapse resulting from overwork."

Sir Neville Lawton looked critically at the motionless figure on the floor.

"I'm afraid we'll have trouble making that stick, Dunc," he said. "You shot him at about five yards; there isn't a powder mark on him."

"Oh, sorry; I forgot." MacLeod's voice was mockingly contrite. "It was Dr. Lowiewski's expressed wish that his remains be cremated as soon after death as possible, and that funeral services be held over his ashes. The big electric furnace in the metallurgical lab will do, I think."

"But . . . but there'll be all sorts of formalities—" the Englishman protested.

"Now you forget. Our compact," MacLeod reminded him. "We stand upon our extraterritorial immunity: we certainly

won't allow any stupid bureaucratic interference with our deceased colleague's wishes. We have a regular M.D. on our payroll, in case anybody has to have a death certificate to keep him happy, but beyond that—" He shrugged.

"It burns me up, though!" Suzanne Maillard cried. "After the spaceship is built, and the Lunar Base is established¹³, there will be publicity, and people will eulogize this species of an Iscariot!"

Heym ben-Hillel, who had been staring at MacLeod in shocked disbelief, roused himself.

"Well, why not? Isn't the creator of the Lowiewski function transformations and the rules of inverse probabilities worthy of eulogy?" He turned to MacLeod. "I couldn't have done what you did, but maybe it was for the best. The traitor is dead; the mathematician will live forever."

"You miss the whole point," MacLeod said. "Both of you. It wasn't a question of revenge, like gangsters bumping off a double-crosser. And it wasn't a question of whitewashing Lowiewski for posterity. We are the MacLeod Research

Team. We owe no permanent allegiance to, nor acknowledge the authority of, any national sovereignty or any combination of nations. We deal with national governments as with equals. In consequence, we must make and enforce our own laws.

"You must understand that we enjoy this status only on sufferance. The nations of the world tolerate the Free Scientists only because they need us, and because they know they can trust us. Now, no responsible government official is going to be deceived for a moment by this suicide story we've concocted. It will be fully understood that Lowiewski was a traitor, and that we found him out and put him to death. And, as a corollary, it will be understood that this Team, as a Team, is fully trustworthy, and that when any individual Team member is found to be untrustworthy, he will be dealt with promptly and without public scandal. In other words, it will be understood, from this time on, that the MacLeod Team is worthy of the status it enjoys and the responsibilities concomitant with it.

¹³ The original text has the Moon being "annexed" by the Western Union. The framing in this version better fits the purpose of the Philadelphia Project as described in "The Edge of the Knife."