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Listen to the Music

When he is at home in Wynnewood, Hilary Koprowski arises daily at 5:45 A.M., dons swimming trunks and a bathrobe, and descends to the cellar of his house where there is a collection of exercise machines and a forty-foot lap pool. His trainer and general fitness/health guru, a man named Edward Fitz, arrives at 6 in a cluttered, aging van with jalousie side windows. He is not the typical, dashing, trainer-to-the-stars hardbody, this Edward Fitz. At sixty-four, he is a shy, quiet-spoken man of medium height with graying hair who weighs around 150 pounds. No bulging musculature distends the workmanlike cut of his khaki clothing. A trained masseur, Fitz is also the inventor of the Lung Gym, an imposing collection of tubes and gauges that resembles a cross between a restaurant espresso machine and an autoclave. People are meant to exhale forcibly and repeatedly into this machine for beneficial lung exercise. Every day, Fitz takes Koprowski through an exercise regimen of stretching and calisthenics, after which the doctor swims for fifteen or twenty minutes in his lap pool while classical music plays over the splashing. Once a week Fitz gives Koprowski a massage.

Fitz has been working with Koprowski for twenty-four years. Koprowski has forgotten how he met him, but he does recall that in the early 1970s, when he suffered from a protruding disk in his spine, Fitz taught him a special set of exercises designed to help alleviate the pain. "He taught me to stand on my head," Koprowski says.

We are sitting in the spacious art gallery Koprowski added to his house in 1994. It is a large, airy room, temperature- and humidity-controlled. The modified tray ceiling is set upon a narrow row of clerestory glass windows that allow light to stream in from three directions. The floor is made of wide, polished cherry boards partially covered with a large oriental rug. A shiny grand piano rests in an alcove. The walls are hung with Koprowski's collection of fifteenth-century Dutch paintings.

For a fleeting moment it appears Koprowski will see if he can still stand on his head. His hands tighten on the arms of his chair. His body tenses as if to rise. From the walls, the figures in the twenty or more paintings seem to refocus their interest. But the moment passes. "Standing on my head took the pressure off my spine," Koprowski says as he relaxes. "Of course it created other pressure."

Back surgery could not be avoided. Koprowski went to the Semes Murphy Clinic in Alabama for the procedure, "The greatest disko-tech in America," he says straight-faced. "You have heard of Admiral Semes, the great Civil War pirate, the Captain of the *Alabama* which was engaged and sunk by the *Ticonderoga*? Manet did a famous painting of the battle. Admiral Semes was the great uncle of Dr. Semes, who founded the clinic. When I arrived the door was opened not by an old man, but an ancient man, Dr. Semes himself. He saw my hesitation and quickly told me that he was eighty-seven and had stopped operating four years prior. Imagine, they let him keep operating until he was eighty-three! I had to stay seven days and he visited me every day in the hospital. Now they keep you overnight for a disk operation. Much better."

Koprowski calls his trainer Fitz "the most important person in anybody's life" and has evidenced such unshakable faith in him that consternation within his family has resulted. After a serious illness in 1993 that required major abdominal surgery, Koprowski ignored most of the advice lavished on him by the medical establishment. Instead, he listened to what Edward Fitz suggested he do to regain his health.

Prior to the abdominal surgery, Koprowski was flying to Sweden to give a speech after skin diving for a week with his family

in the cold waters of the Galapagos Islands, when he began to have abdominal pain. His friend, Dr. Hakan Mellstedt, who had worked with Koprowski on tests of monoclonal antibodies, picked him up at the airport and saw that Koprowski was in distress. "He was pale, sweating," Mellstedt says. "I took him to a hotel. He said he didn't feel well." Always a trooper, as those who have worked with him well know, Koprowski showed up at the appointed time and gave his speech. But instead of staying for cocktails and dinner, usually one of the highlights of any scientific meeting for Koprowski, he returned to his room. By 5 A.M. he was feeling badly enough to take a cab to the hospital.

Mellstedt diagnosed an adhesion of the bowel. He and Koprowski discussed the option of surgery, but decided to try a medicinal cure first. During a ten-day stay in the Swedish hospital, the medicine brought relief. Mellstedt says Koprowski was a demanding patient, but one well entertained by the many devoted Swedish friends from Wistar days who visited him regularly.

Koprowski flew home when he felt well enough, but the pain returned. He was taken to Bryn Mawr hospital for surgery. He was testy afterwards, not a model patient. "My foot dropped because of the way I was placed in bed," he said bitterly a year afterwards. He began agitating to leave the hospital almost as soon as he recovered from the anesthesia.

"Hilary sent me to Paris to get Icarus, our new beauceron," Irena says. "It was either that or a divorce and he would never see me again." Her look solicits understanding. "No sooner was I out the door than he left the hospital."

Koprowski was emaciated, weak. The pain of digestion was causing anorexia. He was returned to the hospital, where like many before him, he was uninspired by the quality of the food. But he was encouraged by the daily visits of Edward Fitz. "He came to the hospital and taught me how to walk," Koprowski says.

Koprowski was released from the hospital by his gastroenterologist under the promise that he would engage a dietician. Irena returned after a few days and secured one. "Hilary told us what appealed to him, and she made meals around that, while counting the nutrients," Irena says. His recovery was slow. With the occasional, terse overstatement he uses to make an important

point, Koprowski says the dietician saved his life. When he was up to it, he began swimming again and exercising in a moderate way under the direction of Edward Fitz.

"He's got access to the best medical science has to offer," his son Claude says with frustration, "and he'll listen only to Fitz!"

Christopher says his father was shaken by the gravity of the illness. He recalls an incident in the hospital that impressed him not only for its shock value, but for the way in which his father carried it off. "He decided to dictate a last will and testament," Christopher says. "He knew my oldest daughter Amanda was taking Latin, so he asked her to come into his room with pad and pencil. He started dictating to her in Latin. I don't know when he last spoke any Latin, or even read it. But there he was, dictating to her. Phenomenal. I consider myself reasonably smart, but he's in another league. I am so envious of his IQ. I can discern his world, and I covet his intellectual abilities. He's about to be eighty, and yet he can pick up new things faster and better than anyone I know."

When Koprowski heard that Christopher had told this story he huffed. "You don't die from bowel adhesion, you die from heart attacks, strokes, aneurysms. I wasn't concerned about dying. Why didn't Christopher tell you about the greatest vacation we ever had?" And he recounted in some detail a trip he took in 1964 with his wife and his two sons (then ages thirteen and twenty-four) into the Canadian wilds.

A float plane dropped them off and was supposed to return to pick them up in a week. They slept in a tent listening to wolves howling and the cries of loons. Their pilot wasn't able to pick them up himself, so he sent rangers. The rangers couldn't spot their camp and flew off. "We had plenty of toilet paper," Koprowski says, "so we strung it on poles and waved at them the next day when they returned. We all agreed after that trip that we never had such rested faces in our lives."

Christopher recalls that trip very well, right down to the color of the toilet paper (pink). He said the trip was inspired by a macho Polish scientist who worked at Wistar, a muscle-bound fellow "imbued with testosterone poisoning" who often went on adventure vacations. "Mom had no idea what she was in for," Christopher

says. "She sang 'Moosey Moosey Moosey berry' as we drove through the wilds of Canada, thinking that would attract the animals. Claude and I sang the Hahnemann Rhumba: 'Carseno carseno carseno rhumba!' " Hahnemann was the hospital where Irena was working in cytology at the time. "After that trip, whenever my father mentioned the word *wilderness*, my mother would hide."

Christopher recalls that the week in the Canadian wilds wasn't the only outdoor experience his father had. Another colleague and sportsman named John Colter, a biochemist from Edmonton, Alberta, recalls taking Koprowski on a fishing trip. Headquarters was a remote cabin. Koprowski was the hit of the group when he appeared in his silk pajamas looking for a place to plug in his electric toothbrush.

For whatever therapeutic reasons, Koprowski's recovery from his bowel surgery is complete. Those who know him best worry that he has lost some of his edge, that he's not as humorous or engagingly erudite as he used to be, that the illness took its toll. Perhaps. But as he passed his eightieth birthday on December 5, 1996, he was positively glowing with health, vibrating with energy, as caught up in life and projects as any human half his age could hope to be. Having spent considerable time with him over the last two years, I marveled at how he seemed to be looking progressively younger. Bob Gallo says he defies the laws of gravity. "The oak must fall, right? But when it doesn't, what does one do?" Marshall Goldberg observes with his pugilist's eye that Koprowski is fighting old age . . . and winning. Michael Katz thinks Koprowski is tinkering with immortality. "Not through his work," Katz says, "but for real."

Surely eighty is an above-average age to be as mentally and physically vigorous as Koprowski appears. The cellist Pablo Casals broke new ground for octogenarians. When he was eighty, Casals married a woman of twenty and lived another productive sixteen years. While there are no twenty-year-olds on Koprowski's horizon, music has become an increasingly important and rewarding part of his life. And there are developments in his laboratory that have him bursting with excitement.

Irena confesses that the sustained flurry of activity is somewhat annoying to her. She is hardly idle herself, having produced

an autobiography in a language she never studied formally (English) over the past several years. The book was published in early 1997 as part of a series on successful female immigrants. But she is obviously treasuring the retired state she has enjoyed since 1987, reading a lot and working at staying fit since the stroke she suffered in 1996. "I don't understand what he is trying to accomplish," Irena says of her husband, "except maybe the further expression of his creativity. But why the new science institutes, the battle for grants, space, money, people? Does he think he will create a substitute for Wistar? He began Wistar thirty-nine years ago. He is now eighty. He doesn't have another forty years to pull it off. Nor does he have the same energy or ability to attract young scientists. I often wonder what does he really want. And he says, what do you want me to do, sit around? His compulsion is strong. He has not arrived at a state where he wants to restrain himself a bit. He says he considers cutting back, but I don't see much of it."

Chuck Rupprecht recalls one meeting with Koprowski several years ago when Rupprecht was discussing the angst in the rabies group and expressing his need to go in his own direction, to find a bit more peace. "Peace," Koprowski said to him with disdain. "I'll show you peace. We'll go to the cemetery. There is where you'll find the only peace."



After his morning workout, still in his robe and trunks, hair wet from the pool, Koprowski walks up to the kitchen where he has solitary breakfast at the counter. Irena, who has been up since 6 A.M., sets food out for him, then goes off to finish waking up on her own. Koprowski's breakfast consists of hot beef broth, a slice or two of cold meat, and toast with jam and tea. He scans the *New York Times* as he eats.

Sometime before 9 A.M., a trio of maids arrive, along with Irena's secretary, most days. Along with Piotr Ziolkiewicz and Ania Modelska, a married couple doing medical research, and Barbara Smyla, who works designing clothes and helps out with house-keeping in exchange for lodging (the current Polish contingent

who are living with the Koprowskis), the daily staff amounts to seven people.

Around 9 A.M., Koprowski's driver arrives to take him to his office at Jefferson University where he is professor in the department of microbiology and immunology. His office is a three-room suite with a bathroom (shower included) and kitchenette. The rooms are modestly decorated. A few personal photographs and honorary degrees from foreign universities hang on the walls. In his own office, a black and white oil of a nude woman hangs behind his desk and dominates the decor.

Assistants Sue Jones and Andrea Goodstein-Curtis, who moved with Koprowski from Wistar, keep the office both organized and lighthearted. Andrea is an accomplished musician who is principal flutist in the Philharmonic Orchestra of Southern New Jersey. She frequently played Christmas concerts with Koprowski during the Wistar years, and Koprowski's compositions are often scored for flute, with her in mind.

Yelena Dubrovina, who writes poetry in her native language, is director of science support (monitoring grant applications, foundations, fund-raising, computer searches, etc.). Yelena also moved from Wistar. Together, the three women have accumulated fifty-four years with Koprowski. Sachidar Reddi is the office systems manager, in charge of computer operations. The fifth member of the office staff is Katherine Reagan, who works for Koprowski part time from her secretarial post at Wistar. Among other duties, Katherine monitors donations to the multiple sclerosis brain bank, which continues to be Koprowski's project.

Everyone keeps busy with a score of ongoing scientific projects, plus several in the development stage; mass periodical publications, scientific papers, and books by Koprowski and his staff; the dozens of speaking and symposium invitations that come in every year; Koprowski's special interests that include music lessons, art buying, book and music manuscript searches; his copious travels; corresponding with hundreds of friends around the world; and keeping up with a thousand or more colleagues who might call or drop in at any time to discuss a theory or a problem.

Some of the projects have a familiar sound. Work continues on the refinement and expansion of uses for monoclonal anti-

bodies. And rabies, despite being given a low priority by Wistar, continues to be a subject of great interest to Koprowski. The recombinant rabies vaccine (VR-G) that was so long in development was finally conditionally licensed in the United States by the USDA in the spring of 1995—"conditionally" meaning that while there is an obvious need for the vaccine in the wild, the USDA wanted to see more data that would prove the "purity, safety, potency, and efficacy" of the product. Even after full licensing, it would still be within the domain of the various states to approve or deny its use. So that struggle continues, despite the proven efficacy and acceptance of the recombinant vaccine in Europe and the Middle East. As of the spring of 1996, New York, New Jersey, Massachusetts, Florida, and Texas had VR-G programs underway.

Chuck Rupprecht had left Jefferson by the time VR-G received its conditional approval. He had finished the moving job from Wistar to Jefferson and was settled in by 1992. He left in 1993 for the Centers for Disease Control in Atlanta. It was another difficult move. "Koprowski wouldn't hear of me quitting him," Rupprecht says. "He gave me a leave. For two years I was on temporary leave as far as he was concerned. He wouldn't discuss it. But the ties didn't bind. I needed to be my own guy."

No one should appreciate a rebellious, independent spirit better than Koprowski, but it's human nature to try to bend it to one's own devices when the rebel is sitting across the desk. After many years of working in harmony with Koprowski, Rupprecht finally had his quarrel with him. "People had said to be careful," Rupprecht says, "and I knew. No one's perfect." After he moved to Atlanta, Rupprecht maintained his lab at Jefferson for the continuation of funded projects on which he was the principal investigator. "I went off on my first international trip and got a call that my lab was being taken over. It was 2 A.M. in Java, about as far away as I could get. People wanted my grant money and my supplies. I had been targeted. Other investigators were moved in, and unless the boss calls them on it, then he is tacitly supporting the activity. I set it straight by calling the dean, the financial people, my sponsors. But it seemed queer to me. Koprowski said it was a misunderstanding. It didn't get better until I confronted him."

Rupprecht pauses.

“Confront isn’t the right word. He avoids confrontation. And I never had a problem with him one on one. We’ve never raised our voices at each other. I had problems with his henchmen, for sure. But he and I discussed the situation and arrived at a mutual agreement that I really couldn’t run a lab at Jefferson in absentia. It was couched as a misunderstanding, and life went on. But it became increasingly clear to all that the CDC for me was something more than a sojourn.”

Koprowski and Rupprecht are still friends. As Rupprecht said, Koprowski lets his henchmen do the tough stuff. He stays in the background like a Sicilian don, above the fray yet totally aware of the situation, perhaps contributing a suggestion or two as the drama plays out, but ready to invite the insurgent over for a nice dinner once the dust has settled to have a friendly chat about how their mutual interests might be served in the future.

In fact, in 1997 Koprowski traveled to India for a rabies meeting at Rupprecht’s suggestion. “If I had still been at Jefferson,” Rupprecht says, “I wouldn’t have been invited. My government affiliation provided the invitation, which I extended to Koprowski.”

Prior to that, in 1996, Rupprecht invited his old boss to co-chair one of the sessions at a weeklong rabies symposium he convened at the CDC. The invitation itself was something of a breakthrough. For years the CDC rabies section considered itself an arch rival of Koprowski when it came to research. Koprowski accepted, choosing the rabies symposium over an invitation to the Nobel Prize awards ceremony from recipient Peter Dougherty, who had worked for Koprowski at Wistar. “That was a very prestigious decision for us,” Rupprecht said. (Dougherty was awarded the Nobel Prize for discoveries concerning the specificity of the cell-mediated immune defense.)

Rupprecht suggested Koprowski invite the speakers for his session, a gracious gesture that Koprowski accepted. “I should have known,” Rupprecht chuckles ruefully as he relates what happened. “He wrote the invitation in such a way that the recipient could assume the CDC was paying for tickets and lodging, something we weren’t really prepared to do. Koprowski knew that. He just did it his way, with old world politeness—money was never men-

tioned. Naturally all the queries about how this or that doctor's trip was being paid for came to me. We found the money, but it took some juggling."

Joseph Gonnella, the dean of Jefferson Medical College, has known Koprowski since the ill-fated negotiation for space in the new life sciences building. Gonnella was as disappointed as Koprowski about the failure of that deal. "Ten years ago Jefferson's reputation in science was average," Gonnella says. "Now we're in the upper third of our competition. But then . . . Koprowski's group would have had faculty titles at Jefferson. It would have been Wistar's Jefferson campus. We would have provided academic support. Wistar would have paid the rent for our excess space. I'd have gotten money and had bragging rights. We agreed to the deal, then he suffered a major defeat when his board said no. It was humiliating for him when he had to back out. I could have gone to court. Instead, I told him I understood."

Since Koprowski joined Gonnella's staff in 1991, the relationship between the two men has deepened. Gonnella is friendly but tough. He is the dean, after all, Koprowski's boss. Gonnella is comfortable to be with, a relaxed man with a sense of humor, a crucial asset when dealing with Hilary Koprowski.

"He's a rascal," Gonnella says with a smile, "lovable, multidimensional . . . he's also arrogant. One of his flaws is he thinks that what worked in the 1960s and 1970s will work now. But I still admire him. He comes to see me and I am energized to think in a different way. He brings a problem, which is also an opportunity." From his long, close relationship with him, Carlo Croce says the best way to deal with Koprowski is to ignore his seemingly outrageous demands. "If you are secure enough, you tell him to go to hell. He came to me for more lab space. He judges himself by how much space he controls. I said no."

A few weeks later, Gonnella found himself receiving Richard Sprague in his office. "He sent his attorney to negotiate for the space," Gonnella says with a laugh. "We looked at each other and both of us knew we were being used. Koprowski is a bright, charming devil. Devious. Spoiled. It is important that I never make him feel that I'm his boss. He wants authority, but he fights authority."

Sprague got Koprowski the additional space he wanted. Again, the dichotomy of dealing with Koprowski is revealed: he demands, sometimes outrageously, but then he produces. In his labs at Jefferson more than a dozen scientists are hard at work. For bureaucratic purposes the workforce is divided into two separate entities: the Center for Neurovirology, and the Biotechnology Foundation Laboratories, Inc. Koprowski runs the weekly staff meetings for both, which are held in a conference room complete with chalkboard. Koprowski sits in the middle of one side of the table, facing the board as his international staff gathers. Several are late. "I need a big needle to stick these guys in the ass," he says with good humor. The meeting comprises a series of reports on how various experiments are proceeding, with each investigator taking his turn at the board. The idea is to keep one another informed of what's going on and to encourage ideas and suggestions. It quickly ascends to a heady level of scientific jargon unintelligible to those who lack degrees in molecular biology. The scientists may as well be speaking Martian. Koprowski notices the glazed eyes of a less-than-fluent listener. He leans close and says with a reassuring pat on the arm, "Forget the words, listen to the music." His grin is conspiratorial.

Koprowski has come to the meeting without notes, without pen and paper. He participates in every presentation, asking pertinent questions, making incisive suggestions. Among the presentations this day there is news regarding the daily scientific grind. Brains are being prepared. Rabbits are being ordered. Another new brain has just been received. The new freezer will cost \$5,000, plus the fee for moving it.

The real news, the banner headline, comes many months later. The frustrating, decades-long search for a crack in the armor of multiple sclerosis may have finally produced some hope. Fingers crossed, there is suddenly a hint of real progress. This, according to one of his staffers, is what has Koprowski on such a high. It has to do with nitrous oxide (NO).

For years medical researchers have suspected that NO might cause damage to the central nervous system. Working with mice, NO has been detected in the brain tissue of animals that suffer from induced experimental encephalitis (brain inflammation).

That is, when a mouse is injected with antigenic material from a normal brain, it causes an immune reaction: the mouse produces antibodies against its own brain, hence induced encephalitis. The myelin sheaths that surround nerves are damaged, the brain develops lesions, and the mice become paralyzed and die. (This resembles the adverse reaction often caused by the old fourteen-shot rabies vaccine that was produced in brain tissue.)

An important, damaging compound that has been detected in this process is nitrous oxide. There are several chemicals being tested to combat the nitrous oxide by rounding it up and binding it. In their search for a better way to control nitrous oxide, Koprowski and his team have come up with what they think is a much more effective method than what is available.

"When nitrous oxide reacts with super oxygen," Koprowski says, "something called peroxynitrate is formed. It is very toxic to cells. In looking for a scavenger for peroxynitrate, we found that uric acid works best. When it is given to mice that we have infected, it protects them from paralysis. After thirty years of MS research, we find that a simple substance in our own body (a by-product of the body's use of protein that is excreted in urine) may be the best hope for making progress."

Koprowski has already filed for a patent for this discovery. His paper on the subject, written with twelve of his coworkers—"Prevention of Experimental Allergic Encephalomyelitis by Targeting Nitrous Oxide and Peroxynitrate: Implications for the Treatment of Multiple Sclerosis"—was published in 1997 by the National Academy of Sciences. It concludes, in part, "In particular, treatment with high doses of uric acid virtually prevented clinical symptoms of the disease."

"It's very exciting." Koprowski is like a musician at a jam session who can hardly wait for his next turn. Caught up in a sea of swirling notes, he's got a head full of ideas, phrases, riffs that could work. Connect the notes. Connect the dots. Make it sing. Make it work. Hurry it up, mankind is waiting. "We must move quickly."

Another program at the Biotechnology Foundation, one that is proceeding at full speed, is based on Koprowski's efforts to facilitate delivery and reduce the cost of vaccines. The idea: produce "green system vaccines" by introducing vaccines into the growth

cycle of edible plants. Or as the Biotechnology Foundation brochure states it, to be able to produce "Growth in plants of microorganisms and molecules to obtain inexpensive products for prophylactic and therapeutic use."

At one weekly staff meeting, a basket of tomatoes was the centerpiece of the table. There was nothing to distinguish it from any other basket of handsome red plum tomatoes. But lab analysis would confirm that these tomatoes contained rabies vaccine. Koprowski jokingly offered them around. But while a bushel of tomatoes would be a lot cheaper to send to a Third World country than a vaccination team with all its sterile gear, the fruit would probably be rotten or crushed by the time it arrived. A tomato is mostly water, not enough protein for scientific use. So denser and more durable fruits and vegetables are being tried, such as potatoes, bananas, and alfalfa sprouts.

And it has been discovered that it is possible to "grow" bio-engineered vaccines in tobacco plants. Tobacco mosaic virus—a prolific, fast-growing virus found in tobacco that yields up to a gram of virus per 100 grams of plant tissue—is the carrier. Koprowski and his team have successfully "linked" rabies, AIDS, and other viruses with tobacco mosaic virus. After infecting the plants, harvesting the leaves, and extracting the vaccine, it has been used successfully to protect mice against rabies. Tobacco is grown inexpensively in a wide range of soil and climatic conditions, and it produces a large volume of vegetable matter in a short time that could be used for purposes other than smoking. Toward that end, Koprowski is in hot pursuit of the tobacco companies to join his green system concept. The only puzzle is why the embattled tobacco purveyors aren't in hot pursuit of Koprowski. "We envision alternative ways of using tobacco plants that will be beneficial rather than injurious to human health," Koprowski says.

Given the broad scope of the molecular biological turf Koprowski has covered, the number of years he has been fearlessly charging into the virological unknown, and the inherent risk assumed by anyone involved with innovation in medical research, it is a tribute to Koprowski's methodology that none of his discoveries have come back to haunt him in a serious way. With the exception of the nasty case of equine encephalitis he contracted

while working in Brazil, he has also escaped physically unscathed. Several times he's put his own body on the line to test new vaccines or advance a critical experiment. But there was one moment a few years ago when the media broached a research-gone-awry story so potentially shocking that even being marginally connected with it would have caused most people to have nightmares. Koprowski found himself at the center.

In 1992 it was suggested out of the blue that Koprowski's early work with live polio vaccine may have inadvertently brought the AIDS epidemic to the world. This report came from a most unlikely, unscientific journal: *Rolling Stone*. In the March 19 issue of that year, a piece appeared called "The Origin of AIDS—A Startling New Theory Attempts to Answer the Question 'Was It an Act of God or Man?'" The "man" that author Tom Curtis had in mind was Hilary Koprowski. Curtis wrote: "Sprinkled through the medical literature of the past 35 years are facts that buttress the unnerving prospect that HIV, the AIDS virus, may have crossed the species barrier as an unintended by-product of a live polio virus vaccine."

Koprowski knew a *Rolling Stone* piece was being prepared. Curtis went to see Koprowski once in person, and had two follow-up telephone interviews with him. Koprowski says Curtis told him only that he was writing about the history of polio. "Once, in the second telephone call," Koprowski says, "Curtis casually asked if it was possible AIDS started during the Congo trial. I laughed, and that was the end of that discussion." Koprowski was in Germany when *Rolling Stone* hit the street. "Yelena called me. She said it was terrible, a terrible article. I was shocked by Curtis's deviousness. He never checked the facts."

Curtis's piece was a protracted argument, one in which he tried, like a dogged prosecuting attorney, to establish possibility. That's not too difficult in science, where possibility is a major driving force. The "startling new theory" at issue was that the live polio vaccine Koprowski and associates had administered orally in the Belgian Congo in 1956 had been possibly contaminated with an AIDS-producing virus because of its preparation in monkey kidney. Curtis included interviews with Jonas Salk, who didn't want to discuss the notion; Albert Sabin, who told Curtis "You can't

hang Koprowski for that"; and Robert Gallo, who after prolonged questioning told Curtis, that yes, if possibilities included the sun not coming up, such unattended consequences could happen, possibly, in medicine.

Curtis stated that the source of the theory he was propounding was a man named Blaine Elswood, an AIDS treatment activist in San Francisco and a cofounder of "guerilla clinics" that conduct research and provide alternate treatments for AIDS patients. In Curtis's article, the structures of HIV and the simian versions of the virus (SIV) were compared and contrasted. Breeds of the monkeys whose kidneys were used in the preparation of the polio vaccine were discussed. Curtis alleged that Koprowski, in his haste to develop the vaccine, had used kidneys from green monkeys, a breed known to carry the AIDS virus. The number of cases of AIDS subsequently reported in the region of the Congo where the polio vaccine was administered were cited. Even Koprowski's license to conduct the Congo trial was questioned. Given the powerful, promising headline of the piece, Curtis's conclusion was feeble: "If the Congo vaccine turns out to be the way AIDS got started in people, it will be because medicine was lucky, not because it was infallible."

Koprowski reacted quickly and forcefully, filing a libel suit against *Rolling Stone*. Koprowski also filed suit against the Associated Press and its byline writer for a connected story containing "false and defamatory statements and innuendos regarding Dr. Koprowski . . . published with actual malice."

Time magazine picked up the story while *Rolling Stone's* ink was still wet. *Time* saw "problems" with Curtis's theory and suggested that the clearest resolution would be to test the original vaccine stocks, still on ice at Wistar, for HIV-like viruses. They noted that Wistar officials were forming a committee to "evaluate *Rolling Stone* speculations." The editors of *Time* reassured the public that there was no reason to worry about the standard polio vaccines on the market.

Koprowski did not personally reply to Curtis's piece until the writer published a letter in *Science*. With the argument transferred to a respected scientific journal, Koprowski let fly in a long retort of his own. He refuted Curtis's hypothesis point by point—specif-

ically the charge that he used kidneys from green monkeys—concluding, “The argument for the safety of polio vaccination lies in the absence of any AIDS-related disease among the hundreds of millions of people vaccinated throughout the world; the fact that AIDS is rampant in subequatorial Africa can only be attributed to the polio vaccine by the wildest of lay speculation.”

The “by speculation” also referred to the letter from Blaine Elswood and his coauthor, Raphael B. Striker, that was published in *Research and Virology* (a publication of the Pasteur Institute in Paris). Koprowski once again responded in the same publication. The Elswood/Striker letter alleged that the oral polio vaccine manufactured at Wistar may have been contaminated with HIV and originated its epidemic spread. Again, Koprowski challenged the facts of the Elswood/Striker case point by point, calling many of their allegations “fantasy.” He wrote, “The hypothesis of Elswood and Striker has scared parents against vaccinating their children against polio and has caused me great personal pain. Elswood and Striker produced a hypothesis without any foundation in fact, and they should have the courage to retract it.”

Meanwhile, the six-member panel of scientists convened by Wistar Institute concluded that there was little likelihood that Koprowski accidentally helped launch the AIDS epidemic. Their report read in part, “It can be stated with almost complete certainty that the large polio vaccine trial begun in 1957 in the Congo was not the origin of AIDS. . . . Almost every step in this hypothetical mode of transmission is problematic.”

Panel chair Dr. Frank Lilly, a professor at Albert Einstein College of Medicine, pointed out that the earliest documented case of AIDS was a merchant seaman who showed symptoms in 1958 and died in 1959. This man, Lilly noted, had been in North Africa in 1955, prior to the Congo test, and had returned to England in 1957, before the trial began. Since scientists believe it took decades, possibly centuries, for AIDS virus to evolve from similar viruses found in monkeys, the panel debunked Curtis’s theory.

The panel recommended that the original stock of the vaccine be tested to see if a virus similar to HIV is present. But this was never done. “The same lot of vaccine doesn’t exist anymore,” Koprowski says. “At the time, Sabin said it would be useless to test

it. And furthermore, the people who propagate such nonsense will always have an excuse why whatever test you do isn't valid."

Rolling Stone's December 12, 1993, issue carried a "clarification/update." It summarized the original piece in one paragraph, and then stated: "The editors of *Rolling Stone* wish to clarify they never intended to suggest in the article that there is any scientific proof, nor do they know of any scientific proof, that Dr. Koprowski, an illustrious scientist, was in fact responsible for introducing AIDS to the human population or that he is the father of AIDS."

The clarification was sufficient for Koprowski to drop his suit against the magazine whose usual franchise is the rock music business. The suit against the Associated Press (asking for a total of \$2.7 million in damages) was still pending in 1997.

Koprowski says that the tempest created by *Rolling Stone* did not cause him nightmares. "I don't suffer easily from nightmares," he says. "The premise was too absurd. Even if I had used kidney from African green monkeys, which I did not, simian immunodeficiency virus (SIV) from green monkeys cannot transmigrate to human immunodeficiency virus (HIV) in a lifetime. But during the day my mind was distracted. It was a terrible experience because of the time lost. It was the biggest theft of time in my life. I had to write dozens of long letters and pay attention to the legal business. It was so silly I couldn't believe it. Hilary Koprowski, the eradicator of polio and the father of AIDS. Imagine."

If there was any residual stigma from the AIDS controversy for Koprowski, it was not within the scientific community, as was apparent at the annual symposium on AIDS hosted by Dr. Robert Gallo in September of 1994. It was attended by researchers from all over the world, and it seemed that everyone knew Koprowski and wanted to shake his hand, say hello. At lunch he could hardly eat his sandwich for the table hoppers. They included scientists from a variety of countries including Japan, Germany, Italy, Sweden, Poland, Finland, and Russia. Many of them had been trained at Wistar. He remembered names and had a warm greeting and a smile for everyone who stopped by. It was the same in the hallways. It took him a half hour to progress fifty feet, as people stopped to talk, exchange pleasantries, and maybe ask a question, seek an opinion, or discuss a problem.

The symposium was impressive for its size and the scope of material presented. Seven hundred of the best AIDS researchers in the world had gathered to share information about how the immune system works. Thousands of puzzle pieces were being offered up. Some fit, some didn't.

Koprowski is in great demand as a conference moderator. He is known for his ability to listen to thirty or forty papers and quickly summarize the three most important points presented. He fidgeted in his seat as speaker after speaker said his piece, showed his slides, and departed. Each was granted ten minutes. At the end of eight minutes, a little green light in front of the speaker changed to yellow. At ten, it turned red. At eleven, it began flashing. Beyond that the moderator used his hook gently but firmly. "It's too much," Koprowski said. "Seven days with a different speaker every ten minutes. And the less they have to say, the longer they want to talk. After a while, your ass gets sore and your concentration fails."

When it was his turn, he used up three of his ten minutes with a joke about the two insomniacs and the psychiatrist. The first has dreams when he does sleep that leave him exhausted: each night he must drive a huge truck from London to Liverpool. The psychiatrist suggests that the man stop at a pub halfway, call him, and the doctor will drive the truck the rest of the way to Liverpool. In two weeks the man returns rested and gratefully reports that the system is working. The second man's recurring dream is that as a sultan he must satisfy all twenty women in his harem every night. Again the psychiatrist suggests that the man call him when he has finished half the women. The doctor will take care of the rest. In two weeks the second man returns, still exhausted. Yes, he is calling every night, but he keeps getting a message that the doctor is not available—he's out driving a truck from London to Liverpool.

It didn't have much to do with AIDS, but it got the audience's attention.

Having endured the adverse media blitz about AIDS, Koprowski says he understands how Robert Gallo felt during the controversy that dragged on for ten years over his role in the discovery of HIV. "Though for years he was hunted like an animal,"

Koprowski says, “he continued to do good work and make discoveries.” In the fall of 1996 when Gallo officially opened his new laboratory in Baltimore, Koprowski was one of the featured speakers. “What impressed me,” Koprowski said, “was Bob’s ability to function as a scientist as he did during that bleak period of McCarthyism in science—the number of discoveries he made, the apparently carefree scientific lectures he delivered, the good humor he displayed.”

There was a time that Koprowski participated in so many lectures, workshops, and symposia all over the world that he’d be on the road for a month at a time. The moment he stepped off the plane in Philadelphia, he’d head for the office. As he approached eighty, he had cut back a bit, and seemed more willing to mix in a bit more of what mere mortals might regard as “pleasure” on his trips. But he was still taking care of business in a way that would make younger people weary. One week in the spring of 1996, he left for Paris on a Thursday, flew to Warsaw on Wednesday, flew to Poznan (Poland) on Friday, flew back to Warsaw on Saturday, flew to Frankfurt on Sunday, to Wurzburg on Tuesday, back to Frankfurt on Wednesday, Paris-New York on Thursday, and stopped at the office before heading for home.

Diana Burgwyn says the two famous bosses in her life—Koprowski and Riccardo Muti—are very much alike. “There is such tension in the air when they are around,” she says, “that when they leave, everyone can take a breath and catch up with what they have to do.” Unless, of course, the staff gets a call to start moving heaven and earth for some convoluted tangent Koprowski wants to undertake in mid-travel—like a detour to a little village in England called Hey on Whey, where there are more second-hand bookstores per capita than anywhere on earth—or for some critical piece of the puzzle (slides, documents) that was left behind that now must be sent by courier so it arrives in time for a lecture or a meeting.

At the beginning of 1996, Koprowski flew to France for a three-day conference in the middle of the Paris transportation strike. When I heard he was not going to cancel the trip, I called him to confirm the rumor. He interrupted my admonition about the folly of flying into the center of a maelstrom. “I have calcu-

lated that it will take me approximately three days to walk from Orly Field to the meeting near Versailles," he said with deadpan delivery. The occasion was one of several symposia held around the world to celebrate the hundredth anniversary of Louis Pasteur's death. As one of the more renowned rabies researchers in the world, it would have taken more than a transportation strike to keep Koprowski from the symposium.

Louis Pasteur is probably as close to a hero as Koprowski would admit having. He's fascinated by Pasteur, he has written extensively about him, and he knows his work as both scientist and painter intimately. But as usual with Koprowski, he is most fascinated by Pasteur the human being. In the introduction to *World's Debt to Pasteur*, a book he edited, Koprowski remarks that one of the early patients Pasteur injected with rabies vaccine—a young boy who had been bitten by a rabid dog—died after the treatment. The boy's family physician wanted to sue Pasteur. But the boy's parents were persuaded to withdraw the case after the French Academy of Science intervened on Pasteur's behalf. Koprowski writes:

In a certain way, it's a pity that the case did not come to judgment, since the name of the family physician was . . . Georges Clemenceau. Can you imagine Pasteur, who by no means was a mild character, facing the future Prime Minister of France, 'Le Tigre,' who with an iron hand drove the French marshals to win the first World War? Clemenceau versus Pasteur—what a perfect subject for a television serial of imaginary trials!!

When he returned, he relished telling stories of the frantic Parisians half-crazed in their cars as they endured endless lines of snarled traffic. Typically, he had actually been looking forward to witnessing the terrible transportation tangle in Paris firsthand.

The previous year he had taken both sons and their families up the Amazon for two weeks.

On a trip in 1995 he included a visit to the Talloires International Composer's Conference in France, where he listened to a performance of his composition, "Five Japanese Songs." It was sung by soprano Joan Heller accompanied by piano and cello. Then

he and Irena joined their son Christopher and his family for a ten-day boat trip up the coast of Turkey. In Turkey, however, the pace became too much for Irena. The heat and the constant walking to see the sights left her exhausted. She suffered a mild stroke. Heaven and earth had to be moved once again to find a small airplane to lift her out of the rural area in which they found themselves. Hilary and Christopher flew home with Irena, leaving Mary to finish the boat trip with the three children. After a few days of rest, Irena recovered, and after following a rigid program of diet and exercise therapy for several months, she seemed to regain excellent health.

In the fall of 1996 Hilary flew to Warsaw to attend the ninetieth anniversary of his high school. Hilary spent several days in Poland, after which he flew directly to New Mexico for a meeting. His trip home a day later was complicated by an early snowstorm that delayed his flight half a day. He napped in the airport and arrived home in high spirits. A little travel inconvenience could not diminish the joy of his school reunion. "The students not only performed a play in Latin," he reported with pride, "but the audience laughed in all the right places." And he was struck by the quality of the student orchestra, which he said tackled the Adagio for Strings by Barber, a piano concertino by Twardowski, and a choral piece exceedingly well. "The students wanted to know what it was like at school in my day. My memory for those days gets better as I age," Koprowski says with a mixture of pleasure and surprise.

The consensus of his longtime associates is that Koprowski becomes generally more likable as he ages. "He's calmer now, easier to work for," Andrea Goodstein-Curtis says. "He treats us more like people, more like friends." Andrea is a tall, stylish woman with an easy laugh and a flair for making people comfortable. She also has a keen eye for pretense. Andrea was given a dictation test by Koprowski when he hired her fifteen years ago. "He was stern-faced, serious," she recalls. "The letter he dictated was full of Polish words. I typed it. Sue checked it. Then he looked at my resume. 'Ahh,' he said. 'Europe. Do you speak French?' I said somewhat. 'Ahh, you're a musician . . . flute . . . great. I'm a pianist.' That's why I was hired, I'm convinced. Dictation certainly isn't my strong point.

"He went through a lot of secretaries," Andrea says. "The idea was to last through the first month. Actually the first month he ignored me. Then he laid it on thick. He was demanding. We were expected to work fast and late. I was supposed to entertain visitors, learn his special recipe for a Bloody Mary. I didn't mind that. I'm more social. Sue is more businesslike. She and I made a good combination.

"Ten years ago he had a louder voice, a scarier presence, a much more wicked temper. He would call me at home and scream at me, spitting bullets over something he thought I had gotten wrong. There was no arguing with him. His was the word of God. He invoked tears on many occasions. For many years Sue was the only person who could talk to him. Sue could always go straight at him, and she's never hesitated. But he could be mean. He had nasty, private nicknames for people. And he would cut you up when you weren't around. But there have been no rages of late. He's gentler, more reasonable."

Some things haven't changed. "He loves to scare you," Andrea says. "Always has. If he's been out of the office, he'll try to sneak in. He tried it a few days ago. I heard his keys jingle and peeked around the corner. I caught him.

"Now he's great fun to talk with. I love dishing with him. At the end of the day we chew the fat. He sees all, knows all. He likes a good gossip. He wants people to be alive, have something going."

Koprowski continues to be a stickler for proprieties, including those he feels he deserves. In 1995 he was to have a small hernia repair. He dismissed it as incidental, urged family and friends not to make a fuss about such a trifle. It was same-day surgery. He'd rest afterwards at home and be at work in the morning. Sue, Andrea, and Yelena took him at his word, and when he returned the next morning he was not happy. I was in his office when he arrived, waiting to see him.

He told his staff that he was hurt. Not so much as a card from them, let alone flowers. And he didn't just mention it and go about his business. He belabored it in the tone of a parent whose children have disappointed him. There was no raging, no tantrum. Just a sustained whimper: No flowers? How could you. Not even a card . . . would that have been too much effort?

The three women did not take this with bowed heads. They protested. They were soon gathered in his office, and the discussion was lively. They reminded him that he had requested no fuss. They said of course they were thinking of him. But he was not assuaged. No flowers . . .

Andrea told him she saw his attitude as a breakthrough. That before, if something they did bothered him he wouldn't say anything outright, he would just be bitchy and nasty all day. She told him it was great he was verbalizing his feelings. This is a landmark, she told him, total honesty—a first!

"There was no humor in this," Andrea said later. "He views you only as good as your last gesture. He started on us: 'Do you know who my true friends are? My lawyer and the maid.' He said we didn't know how important we are to him. He values loyalty so much. It's beyond employees, it's friend to another friend. It's a tight unit we have, the three of us are this clique against the world for him.

"He had me upset that day. I almost cried. He can get to you, especially in his soft way. And he was right. We acted like jerks. Of course we should have sent flowers. But Irena is a factor. She protects him. She also said he didn't want a fuss. We should have known better."

Sue, Andrea, and Yelena would surely agree with what Bob Gallo once said about sustaining a relationship with Koprowski. "You must constantly prove you love him . . . and that's not usually too hard."



Music has been a serious, lifelong interest for Koprowski, but in the last few years he has been devoting more and more time to applying himself in that direction. Fifty years ago, music was a cherished love sadly set aside. At seventy-five, Koprowski returned to music with all his former passion. Outside the scientific community he will talk about his work when pressed. But he would much rather talk music. In mid-1996 I found several people close to him engaging me in conversation about this book in order to deliver a message that he was concerned there was going to be

too much written about science, and not enough about music. I had to laugh. The next time I saw him I told him that I'd been accosted by his messengers, waylaid, threatened at gunpoint. What did this mean? His whole career had been involved with science. Music was an avocation. And it was his choice. He chuckled, perhaps with just a flicker of embarrassment that he had been caught dispatching messengers, indulging in an old method of operation. "Oh, I am just a failed scientist," he claimed with disarming false modesty. "I really am a composer." And he smiled with the undeniable pleasure of a man who was at last embarked on a deferred dream.

He continues to study composition with Richard Wernick at the University of Pennsylvania. "I owe everything to him," Koprowski says. But like any committed student, he grabs other opportunities when he can. He relishes his monthly visit to Boston, where he has a lesson with composer Pozzi Escot. He met this woman, regarded as one of the most interesting and original female composers currently at work, at a Rockefeller Institute program at Lake Como, Italy, where both of them were spending a month as fellows in 1995. It was one of those intellectual cross-fertilizations, where poets, philosophers, musicians, and film festival directors exchange ideas with molecular biologists, physicists, and chemists. Much of the time was spent closeted with independent work. But every evening a different Fellow spoke to the group. Fascinated by Escot's remarks, Koprowski moved in, cranked up the charm, and was soon sharing a piano bench with her.

A faculty member at Wheaton College and the Graduate School of the New England conservatory, Escot is described as a composer and theorist with a passion for philosophy, mathematics, and physics. One review described her work as capturing the Renaissance spirit, with sounds rooted in the tradition of Mozart, disciplined by Da Vinci, and vitalized by the moderns. Another speaks of her "mathematical constructions." The book Escot has coauthored with her husband, composer Robert Cogan, *Sonic Design: The Nature and Sound of Music*, is a presentation of music theory and teaching rooted in the scientific analysis of sound and

communications. When Koprowski decided to approach Pozzi Escot, he grabbed a tiger by the tail.

"I'd been at Lake Como for two weeks when he arrived," Escot says, speaking on the telephone from her home in Cambridge, Massachusetts. "I was working on a book. At the conference we ate meals together. He befriended me, told me he wasn't just a medical researcher, he was a musician. A pianist. He was studying at Penn. He began to read about me. One day he came and said he would like to have a lesson. It became a daily affair. I couldn't very well say no because of my commitment as a teacher. I did it because for me it was a recess. I work constantly. His lesson broke up my day.

"When I returned to Boston, he phoned and said he wanted to fly up for lessons. He began coming in August 1995. It's not business. He's never paid me."

One wonders why a composer of Escot's stature and exhausting work schedule would agree to take an outside student for free. Did she find Koprowski fascinating, a promising composer, a worthy student?

"I don't judge on worthiness. Teaching is a missionary job, and there is no one who can teach him as well as I, other than Robert Cogan" (her husband heads the Graduate Department of Music at the New England Conservatory). "Teachers of composition are a mediocre group for the most part. No one is trained to teach anymore. As a pianist, Koprowski knows the repertoire, but he is ignorant in other things. In composition and analysis he has lots to learn. And whatever he learns now, it is so late. There isn't anyone else to give it to him.

"He is inventive, dedicated, a hard worker. No doubt it means a lot to him. He does his homework. We have a teacher/student, master/apprentice relationship. He must get satisfaction and joy out of it or he wouldn't fly up here once a month. I love teaching, so it is a joy for me as well."

In fact, Koprowski loves his meetings with Escot. When I mentioned that she sounded fierce on the telephone, he laughed at the truth of it. "Ho ho, she is!" he said, as if one could be satisfied with anything less in a teacher.

For a budding composer of only three years, as Koprowski likes to describe himself, he has turned out a lot of work. As a player for many years whose creativity was limited to interpretation, Koprowski revels in the freedom composition brings. "I have often gotten bored reproducing music as a pianist," he says. "I was never talented enough to play a Mazurka seventeen ways and continue being creative with it." Even the exercises assigned by Wernick, which require short pieces written in the style of various classical composers—with the added restriction that no sounds or ideas developed after that composer's working life may be utilized—are attacked vigorously by Koprowski. He gets the most out of these assignments, pushing the limits, reacting like a rebellious young student to some of Wernick's sterner criticisms that he finds penciled on his work.

His many years of studying, playing, and hearing music, combined with his analytical nature, make his recent foray into composition especially exciting. For Koprowski, composition has opened up new pathways for hearing and understanding music. For some reason he began "deconstructing" Puccini's *La Bohème* one evening. He was quite amazed by what he discovered. "When you do that with Puccini, peel back the layers, you find the chords of Chopin!" he said.

Koprowski says his ideas for compositions are inspired by natural sounds. He treasures a collection of bird whistles he was given and has begun to collect primitive musical instruments. He also is drawn to dance formats, with signature rhythm patterns and other rules that must be followed—gavottes, sarabandes, gigue, and his favorite, the Argentinean gato. "I love that," he says. "When I get bored and need a break to something fun and uplifting, I go to the gato."

He enjoys setting poems to music, like a piece he wrote for Percy Bysshe Shelley's "Dirge." And a variety of musical challenges appeal to him. He has done incidental music for a play written by a cousin of his called *Dante on the Steps of Immortality* (written in Polish, it has been translated into Italian).

One afternoon sitting on the porch of his house in Oxford, Maryland, Koprowski spoke at length about poets and poetry he liked, arriving finally at a poem called "Autumn Song" by Paul

Verlaine, the French lyric poet of the late 1800s known for the musicality of his work. Koprowski was fascinated by what he perceived as the feminine sound of the rhyme scheme in French, and he recited the poem to illustrate his point. He said the poem had been translated into German, where the rhyme scheme took on a distinctly masculine sound. Again he recited the poem, in German this time. He is working on music for "Autumn Song."

Most recently he has been attracted by one of the poems in British Poet Laureate Ted Hughes's latest book, *Birthday Letters*, written for his late wife, Sylvia Plath. Plath committed suicide in 1963. The poem is called "Ventriloquist," and begins, "We caught each other by the body / And fell in a heap. / Your doll in the dark bedroom woke / With her scream a whip." The music for that should be interesting.

Koprowski has written quite a lot for voice, which surprises him. And nothing yet for piano. But he points out that Beethoven, who was a violist, never composed for the viola. He says he works quickly, often establishing the rough draft of a piece in one evening. The next day he begins the process of scoring it. Even with his electronic keyboard interfaced with a computerized music writing program, the process is tedious. Once a week he brings in an expert to help him program the electronic scoring.

Koprowski works at getting his compositions performed, something Pozzi Escot encourages him to do (Escot helped him get his work on the program at Talloires). So it was only natural that his most fervent request for the celebration of his eightieth birthday on December 5, 1996, was a recital that would include his compositions. A science seminar was planned in his honor, with old friends coming in from far and wide. Several days of dinners and parties were on the schedule, but all else paled before his anticipation of the recital.

Andrea Goodstein-Curtis, who handled the production of the recital, was concerned that a program that interspersed works by the masters with Koprowski's compositions might diminish the latter, and she felt obliged to caution him about that. But he was resolute, courageous, and quite shameless. And wise. First of all, Koprowski wanted a good recital with some beloved, familiar pieces included. He wanted to hear his own pieces as well. And who

would even consider comparing a budding student composer with three years' experience to one of the all-time greats? Of course there would be some contrast. So what?

Thus, the program was printed: "Birthday Recital—Music of Hilary Koprowski and other composers." The "others" included were Johann Strauss, Nicolo Paganini, and Frédéric Chopin. It was classic Koprowski. The tongue in cheek so beguilingly defused what could have been thought of as arrogance that the only response possible was an appreciative chuckle.

The recital was held at the Ethical Society of Philadelphia on December 7, 1996, where this message is printed over the front door: "The place where we meet to seek the highest is holy ground." It was a dark gray afternoon with rain descending in buckets.

Two Koprowski pieces led off, the first being an elegy, "For Andrea 2," played by Andrea herself, accompanied by piano. The second, "When I was Young," was sung by soprano Monica Polowy Winter, who once worked for Koprowski at Wistar. Both pieces are atonally modern, dissonant, and written in minor keys—keening set to music. A Strauss piece from *Die Fledermaus*, and a virtuoso violin solo composed by Paganini (played by a Curtis Institute wunderkind, Misha Ovrutsky, age sixteen) bracketed a third Koprowski piece, "Dialogue: Valse Macabre." The interplay between flute, piano, and violin was intriguing, lively, and subtly humorous. Sections were reminiscent of that section in Prokofiev's *Peter and the Wolf* when we hear the bird singing from within the wolf's stomach. And then, sure enough, "Autumn Song," sung by mezzo-soprano Jody Kidwell in German. It was Koprowski's most harmonic, well-developed, and melodic musical offering of the day, and it truly reflected his love of the Verlaine poem. Hilary and Irena sat front row center in rapt attention. Each artist played for them as if the rest of the room were empty.

At intermission, the hundred or so invited guests mingled easily, as at a large family gathering. And indeed it was just that. The room was replete with old friends and colleagues. People seemed both surprised and pleased at the quality of Koprowski's work. Ellen Haber-Katz remarked to him that so much of the work was sad. "The world is sad," Koprowski said to her with a little smile.

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The second half of the program was devoted to five more Koprowski compositions, until pianist Marian Filar took the stage to play Chopin's "Three Mazurkas, op. 59." Filar and Koprowski first met in Warsaw as grammar school students. They have known each another for more than seventy of their eighty years. Filar was a prodigy who studied with Warsaw's leading teachers until his career was cut short by the Nazi invasion. He spent years in German prison camps, surviving in part because of his musical prowess. After his liberation, he studied with the great Walter Gieseking. Here he was, a bridge to Koprowski's early youth, in retirement from his professorship at Temple University College of Music, doing a credible job on Chopin. No doubt Filar played Chopin better ten or twenty years ago when his fingers were more nimble. But this rainy day in Philadelphia, the occasion of his old friend's eightieth birthday, gave special impact to Filar's performance.

When it was over, all the players took the stage and invited Koprowski up to take a bow with them. Large bouquets of flowers were presented to everyone. Before everyone adjourned upstairs for drinks and a sumptuous buffet of the choicest cheeses, breads and salamis, the largest and sweetest shrimp, and the most mouth-watering pastries, Koprowski ascended to the stage, stood among the performing artists, and bestowed thanks upon them. Flowers in hand, Koprowski unblinkingly claimed authorship of the day. "The gift of one's own creation is the greatest gift," he told the players.

Perhaps it was a Biblical proverb he sought to echo: "Give [him] of the fruit of [his] hands; and let [his] own works praise [him] in the gates."



At home in Wynnewood, much of the Koprowskis' life revolves around their second beauceron, Icarus. A handsome, sleek animal in the ninety-pound range, Icarus's very appearance would dissuade the most courageous and foolhardy burglar. Like that of his predecessor, his bark could break windows. But as good luck would have it, Icarus has not a whit of Porthos's erratic aggres-

siveness. Icarus is, as Hilary says, "a sweet boy." The dog does voice lengthy concern over the arrival of even well-known visitors, however. Sharing a couch with an animal of his size takes some getting used to. And it is an experience to have a dog of Icarus's imposing presence and quickness place a tennis ball in a visitor's lap and then stand back three feet in rapt concentration while the visitor decides what move is appropriate. But Icarus is like a big, gangly kid who is unaware of his heft. He is most engaging.

One evening when I arrived at Wynnewood, Irena said that Hilary and Piotr were in the cellar working with the dog. I went down to find the two of them trying to coax Icarus onto a strange, obviously handmade contraption built of wood and painted red. Icarus wanted no part of it. He would traverse the narrow platform covered with rug to get the treats Piotr offered, then he would back off. I realized it was a treadmill. Hilary had conceived it and had it built in hopes that Icarus could be persuaded to use it on his own during the day. He was concerned that the dog wasn't getting enough exercise.

Before dinner we went into the yard with Icarus and threw the tennis ball for him. His speed and reactions were something to behold. Once when Piotr held the ball longer than Icarus liked, the dog sat in front of Piotr and began barking. "How humiliating," Hilary said, "this big proud boy begging for the ball. Such a noble beast fallen. He should be out herding sheep. The dog should not have to do everything we want. It is a terrible situation that dogs have become the servants of man."

The Koprowskis may have succeeded in reversing that condition, at least within their home. One summer evening the house vibrated with the news that the presence of fleas had been detected on the dog. An all-points bulletin had been put out. The maids were on red alert for extra and more powerful vacuuming procedures. Veterinarians had been consulted. The big house smelled of flea repellent. Over cocktails in the gallery before dinner, Koprowski regarded his dog reclining comfortably on one of the soft leather couches and said in a voice lowered for comic effect, "Irena is on alert. Every five or ten minutes she should put Icarus on his back and do a flea check." Irena, ever a bulwark of tolerance for Hilary's humor, rolled her eyes with good nature at her husband's teasing.

A cocktail before dinner is an evening ritual at Wynnewood. Hors d'oeuvres are served individually on little trays—a slice or two of meat or tongue, cheese and crackers, always a Greek olive with a pit that one gives to Icarus, then marvels with a slight shudder to hear him crack it between his molars. Keeping Icarus away from one's hors d'oeuvres tray takes full attention and a bit of tact. While martinis are a favorite, the drinks vary according to whim. Piotr is good at rum drinks, and Koprowski has a few specialties he likes to make. Bloody Marys are one. He also handles the martinis, and he loves a sweet concoction of fruit juice and vodka called a Daisy, named for the maid who taught it to him.

Koprowski will arrive in the gallery carrying the tray of drinks and, like any good player, he wouldn't think of entering the room—any room—or even picking up the telephone without a smile and a provocative or entertaining opening remark. Sometimes it is only a bark for attention. It can be whatever is on his mind. "I have been contemplating my navel," he said one evening as he brought the martinis. "Now I know why the Greeks do it." Or, "I know why conductors live so long and remain healthy. Because they get to work out their anger every day on eighty people at a time." Or, "I have made a decision. A human treadmill is better for the dog.

"Accidie!" he almost shouted one evening as he entered the gallery. "Accidie! Do you know what that means? Paralysis of will. A wonderful word, is it not? Latin, or more probably, kitchen Latin. It comes from an essay by Aldous Huxley. Accidie." *Accidie* became the word of the evening. Hilary repeated it often, rolling it off his tongue, relishing the sound, using it in sentences, applying it to situations, locking it in all of our memories forever.

Another evening he had posed a question about United States presidents. Which president since the war had the most dignity? He broke our silence with his offering of Harry Truman. "He was a witty man," he said of Truman, "one who did not tolerate fools. He was an elder of the Baptist Church. Edith Wharton wrote a good book about him called *Truman Speaks*. America is a different nation now than when we arrived," he said. "The Constitution promoted strong state governments and a weak federal govern-

ment. That has turned around. Now the president of the United States is more powerful than a king."

Talk of politics reminded him of an old Polish scheme to bring German bear hunters' dollars across the border. "There were no bears in Poland, so they brought in a bunch of them and let them loose in the mountains. One, it turned out, was an old circus bear. He wandered into town and surprised a mail carrier, who ran away. The bear, who had been taught to ride a bicycle, got on the mailman's bicycle and rode off. A German hunter became so excited when he saw the bear riding a bicycle that he fell out of a tree and broke his leg."

One evening we sat in the gallery and spoke about the paintings. The subjects of this dark-hued collection of fifteenth-century Dutch artists deal mainly with religious motifs, an odd interest for a man who considers the only worthwhile parts of religion to be music and ritual, a man whose parents' avowed assessment of religion was that it was an evil force. But Koprowski likes the painting style of this Dutch school, the layers of darkness, the mood created by the artists who used light brilliantly to illuminate their messages. More than that, he likes the hunt for paintings, the detective work involved. He is endlessly curious about the painters, who they were, where they lived, with whom they studied, from where their influences came. "The fun," he says, "is finding an unusual buy." He and Irena casually peruse catalogs from foreign auction houses and occasionally find something they go after. They added to their painting collection most intensely during the late 1980s. Since then, Koprowski says, prices have gotten out of hand. These days their interests are drawn more to small sculptures.

"This is the 'Mocking of Christ,' " Koprowski says, pausing before a large painting of a blindfolded Jesus in a red robe being harassed by soldiers. In the background, another soldier blows on a hunting horn with a loop in its shaft. "It is from the Walter Chrysler collection, by an unknown Dutch artist who was a follower of Manfredi. The man blowing the horn has a French nose. I would say this has the influence of Caravaggio."

Koprowski goes on, talking about each painting, stating names and dates, telling stories about how he came to own it, where the

artist studied and details about his life until the paintings take on meaningful new life. They are like faces in a crowd coming into focus once introductions have been made. This artist lived in France, then moved to Italy to study. But he was thrown out for painting pornographic images. That artist was a student of Rembrandt. Facts and life stories and details swirl about the gallery. If Paolini's bald, resting "Bagpiper" would put the mouthpiece to his lips, one imagines that these figures might all join hands in a fifteenth-century fantasy reel: the mercenary of Cornelius Van Harmon and the whore with whom he negotiates; Baburen's "Narcissist" who bends to see his reflection in a sink of water; "Naomi and Ruth" caught in conversation beneath a tree by J. Victors, a pupil of Rembrandt; and Nicholas van Poelenburg's "Bathers," naked as jays under an overhanging cliff.

Maybe King Charles I would join them, or at least tap his foot. This portrait, by the Flemish painter Sir Anthony Van Dyck, is a favorite because Koprowski's keen eye picked it out as a Van Dyck even though it was unsigned. He was so certain of it that he bought the painting and then sought proof. Van Dyck's other portraits of King Charles hang in the Louvre and Buckingham Palace.

"I went to the Witt Library at the Courtold Institute in London," Koprowski says, "and found the documents. Van Dyck painted Charles thirty-five times." Of all the experts who have looked at Koprowski's Van Dyck, only Professor John Rupert Martin, at Princeton University, has confirmed the painting's authenticity.

It was the tale of this acquisition that formed the basis for the novel Koprowski wrote with Yelena Dubrovina, *In Search of Van Dyck*. In it, a painting by Van Dyck is the only clue found on an abandoned yacht. In the course of his investigation, a Scotland Yard detective travels to Germany to follow the trail of the painting's ownership by Russian nobles who were related to the Tsars. He falls in love with a mysterious woman who vanishes. Still in pursuit of the painting's provenance, the detective travels in Russia, where he has many adventures, learning all the while about Western art in Russia. When a friend and art historian at Oxford accidentally solves the mystery of the abandoned yacht, the detective is reunited with his lover. The bibliography of this little

novel lists seventy books and twenty-one journal articles, many of them in Russian.

A visit to the house of Koprowski is never dull. For a large dinner party held at Wynnewood in 1995 to celebrate the completion of the new library wing where a thousand volumes are carefully cataloged, the house was fragrant with cut flowers. The seventy-five guests ranged from old Wistar and Jefferson colleagues to visitors from Poland who happened to be in town, to the architect and long-haired young contractor who created the addition. The Koprowski version of hospitality is high-end, old-style Eastern European, a study in elegant manners so polished that one is simply and delightfully caught up in the flow of the occasion. The ambience is stimulating yet comfortable. Hilary and Irena seem to be everywhere, creating a warm, lighthearted mood. The two of them have a propensity for recognizing people of depth, looking beyond appearances and social standing for the real goods. Their range of friends and acquaintances therefore covers a broad spectrum—from Nobel prize winners and heads of state to carpenters and musicians.

The energy level at the party is high. The guests are interesting, the conversation easy. The food and drink are delicious. Strolling among the elegantly set round caterer's tables that have been placed in four of the rooms, one could easily extrapolate what the masquerade balls of the 1960s must have been like.

Oxford, Maryland, where the Koprowskis retreat on occasional weekends, is reserved for family and close friends. The house is composed of two large wings divided by an indoor pool and a breezeway. Son Claude and his wife Liz live in one wing, Hilary and Irena in the other. Claude and Liz's children are both at school. Their daughter Alexandra is a freshman at Princeton. Son Hilary Jr. is a graduate student in chemistry.

The elder Koprowskis' arrival in Oxford is often cause for a gathering of the clan. It's a large group, and it can get pleasantly raucous. In addition to Claude and family, there are Christopher and Mary and their children (Amanda, Agatha, and Paul); Ania and Piotr, who accompany the elder Koprowskis from Wynnewood (Piotr drives); and Barbara Smyla, the most recent "au pair" addition to the family scene from Poland. Claude laughs at

this. "He has the three of them to help in the house, then he wants to bring everyone to Oxford, so he has to hire someone else to babysit the dog."

Icarus often comes to Oxford, but his visits complicate matters. Until recently, Claude and Liz had three beaucerons of their own. Spanker, a very old boy, was wrapped in diapers toward the end of his life. Usher was a senior citizen who cut a sizable number of notches in his own food bowl during his more belligerent days. For the last year the pains of old age distracted him. Other than several nostalgic forays to bite tradesmen hired to work on the house, he kept to himself. He was finally put down in the spring of 1997. The other dog, a highly strung female named India, is the sister of Icarus. The sibling rivalry can get ugly. They are like two children who suffer unfortunate personality changes when in each other's presence.

One afternoon in 1996, not long after Irena had suffered her stroke while in Turkey, I arrived at the Oxford house. As usual, the two dogs rushed to the glass door to challenge me, barking like maniacs. Irena appeared after a moment, moving gracefully as always, but slowly, walking with a stout cane. For at least two minutes we didn't attempt conversation over the dog-din. The protocol for the situation is to stand relatively still and be amused, talking quietly to the dogs and giving them pats as they cruise around your legs like sharks. India has the disquieting habit of taking a visitor's hand in her teeth and giving it gentle test squeezes. When the noise finally subsided and the dogs were ricocheting off the couches, I asked Irena if she wasn't concerned about getting knocked down. "Yes," she said, emphatically. "That's why I have this cane. But I really feel quite well. I told Hilary I wanted to dance. He was worried I would fall over." Her smile was that of a schoolgirl.

Unable to sit still for long, Hilary occasionally cruises the Oxford neighborhood where I live looking for conversation. One Saturday afternoon in the early spring of 1996, with a chill wind whipping off the Choptank River that was thwarting the sun's best efforts to tease the daffodils out of their tight, green cloaks, Korprowski rolled up our driveway in his big Mercedes.

He had called to say he was coming. "A formal visit," he had said, jesting in his best, leading-man voice, which had the direct

effect of sending my wife Kippy to her closet in search of suitable attire.

When Kippy opened the door to greet him, presenting a vision of flocked purple taffeta beneath a plunging neckline of black velvet, complete with Medusa hairdo, plenty of makeup, cruel shoes, and gobs of jewelry, Koprowski was properly stunned. His telephone pleasantries had been long forgotten.

As luck would have it, *Carmen* was playing at decent volume on the stereo, courtesy of the Metropolitan Opera's Saturday afternoon broadcast. Kippy, who is tall and slender, an artist and editor who lives in faded jeans with her long hair most often in braids, struck a pose. One hand remained on the doorknob. With the other she made a sweeping gesture of invitation. Her eyes sparkled.

"You said your visit would be formal," she said levelly. Koprowski regained his composure sufficiently to assert that he never wore his Scottish, Black Watch tam-o'-shanter on anything but formal occasions.

It was one of those moments, a wonderful turnabout for a whimsical, cunning man whose life game is to keep people startled, seduced, amused, amazed, disarmed, charmed, and sometimes outraged.

Kippy invited him in out of the cold with a hug. Still understandably bemused as he unbuttoned his gray shearling coat, Koprowski began talking about a piano composition he had just finished and had brought with him to play. He clutched a folder of papers in one hand. "It is a lullaby, but my son Claude says it is too sad. You must tell me what you think."

Kippy drifted off for après-ball apparel as Koprowski busied himself with his music at the ancient Steinway upright. He played with full concentration, bent to the keyboard. His early training is evident in the curl of his fingers, and in the sound he coaxed from the old piano. His fingers aren't as agile as they once were. One thumb is failing, causing him sporadic pain. Claude is right. The piece is terribly sad—a slow, minor moan of a piece. A muddled, dissonant bridge is followed by a somewhat airy transition back to the main theme, whose repeated lament thoroughly dashes whatever faint hope has been suggested. It is a short piece, perhaps three minutes in all.

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Kippy listened intently. She had pulled a charcoal gray Shetland sweater over a yellow turtleneck and was in jeans once again. She hadn't taken time to remove her makeup. Lipstick traces. Perched cross-legged on the wide arm of the sofa like a cat, with the enticing red-lacquered nails of her narrow, aristocratic feet peeking from beneath her trim thighs, she was a chilly Saturday afternoon boy's dream.

Very sad, she agreed. A dirge. Indeed. Koprowski's eyes sparkled as he produced a xeroxed copy of a poem by Percy Bysshe Shelley called, "A Dirge." He said he thought the words might become lyrics for this piece. He played it again. Neither singer nor musician, Kippy read the lyrics. Possibilities existed. "Rough wind, that moanest loud, grief too sad for song. . . ." On cue, our big dog stretched out on his side near the piano and heaved a mighty sigh. Koprowski chuckled in appreciation of the animal's response, leaned over and patted the dog's flank.

The Shelley reminded Koprowski of a new book he'd heard about, *The Journals and Diaries of Claire Clairmont*. He spun around on the piano bench. "This is the woman who harassed Lord Byron," Koprowski said gleefully, his face brightening as he recalled this juicy bit of historical gossip. "She sexually harassed him. Imagine. In the early 1800s. She pestered Byron. Followed him about. Finally he got weary and gave in, took her to bed. And of course she got pregnant, had his child, a daughter, thinking that would weld him to her. Instead, Byron was horrified, never wanted to see her again.

"She had befriended the Shelleys. There was a ménage-à-trois among Shelley, his wife Mary, and Claire Clairmont. The Shelley estate took care of Claire who was well into her eighties when she died. The dairies were discovered, and there was a long struggle over them. Now, finally, we can read them." Koprowski obviously couldn't wait to get his hands on this chronicle of inside information. Hiram and Kippy agreed there was nothing better than the British brand of scandal.

Kippy served tea and a plate of cookies redolent with chocolate. Conversation was as lively as the river beyond the bulkhead at lawn's end, rolling past in large, whitecapped waves driven by the wind. The windows of our old house rattled in the gusts.

We spoke of the recent triple murder in the nearby town of Easton. A seemingly decent, well-liked boy of sixteen had killed his mother, stepfather, and fourteen-year-old brother at 5 A.M., then called 911 to report it. A few days later the boy had casually called (from jail) a classmate to inquire about a study assignment. Koprowski's interest was piqued because of his work with the biological roots of aggression. He wondered if blood had been taken from the murderous boy at the time of his arrest.

We discussed the plight of young people; rampant overpopulation; and the apparent hopelessness generated by corporate greed, environmental damage, bottom-line mentality, exorbitant salaries of sports stars, multimillion-dollar presidential campaigns, and the easy availability of guns. We discussed how teenagers seem to kill without emotion or remorse. Current events all, in 1996.

We discussed various approaches for controlling overpopulation. Kippy complained bitterly about the expanding herd of deer that had grazed right up to the house over the winter, eating every plant in sight. With the new housing development nearby, the animals had no place to go but our lawn. And they were breeding like rabbits. Kippy was angry enough to shoot them. If she planted her beloved garden this year, the deer would eat the plants as they sprouted. The Department of Natural Resources had been really helpful. Put up an electric fence, they had suggested. Kippy huffed. Around everything? That would be attractive.

Koprowski said he was in touch with the DNR about "gossypol," the contraceptive he has developed for animals. He wants to test it on the local deer population. He said it is derived from cottonseed oil and told a story about a village in China that was so poor the people could only afford cottonseed oil for cooking. Then someone noticed that no babies had been born in two years. When scientists analyzed the oil, they discovered that gossypol was the active ingredient preventing conception.

We spoke of the recent massacre of sixteen schoolchildren in Scotland by a known local pederast for whom the purchase and licensing of handguns was no problem.

Kippy told Koprowski of the private school headmaster she knows who was recently informed by Sea World security in Florida that thirteen of his twenty-three students on a school trip had been

arrested for wholesale shoplifting. When questioned, the students blamed "society" for their actions. Several of the students' parents blamed the chaperons on the trip for not doing their jobs.

We spoke about *The Microbe Hunters*, by Paul De Kruif, about the early investigators who discovered microorganisms. Men like Leeuwenhoek, Pasteur, Koch, and Spallanzani. Kippy told Koprowski he reminded her of Lazzaro Spallanzani, who discovered cell division in the mid 1700s. Spallanzani was a man of broad intellect, a formidable scientist, an imperious fellow who spoke many languages, a man who loved a good fight, and who went as far as to enter the priesthood to improve his social standing.

Koprowski did not acknowledge the comparison, possibly because he has no patience for the religious aspect, but more likely because he had made another instant leap. He was quite sure that in Offenbach's opera, *Tales of Hoffmann*, there is a character named Spallanzani. Koprowski had not heard *Hoffmann* for a dozen years, maybe more, but he was quite certain. . . . Kippy got her copy of *Stories of the Great Operas* from the bookcase, and sure enough, Spallanzani is the name of the inventor in *Tales of Hoffmann*. That clue was enough to set Koprowski off. He quickly summarized the plot of the opera, naming practically the whole cast of characters and how they interacted, including the fact that four baritone and three soprano roles are meant to be sung by the same performer.

He asked Kippy if she had read *In Praise of the Stepmother*, by Mario Vargas Llosa, entering a subject dear to both their hearts, the Latin American writers. She had not. Koprowski said it was a fantastic story and proceeded to recount it. He moved to the edge of his seat on the couch, leaned toward Kippy, who was now seated on the floor to one side of the coffee table, her favorite tea-serving position. He quickly warmed to one of his best drawing room talents, vividly and succinctly outlining the story plot, telling of the cherubic-faced adolescent boy who lived with his father, his beautiful stepmother, and their maid.

Koprowski smiled at the cunning of Llosa's insidious tale. Kippy shook her head, said that the boy might as well have killed the stepmother. Koprowski agreed. But in those days, he reminded her, children did *not* have easy access to guns. And this was worse than mere killing. More artistic. They agreed.

It was time to leave. As he buttoned his heavy coat, Koprowski asked if he might have four eggs (he knew we kept hens). And then with a triple kiss to Kippy's cheeks, a bow of gratitude for the visit, and with a carton of twelve eggs tucked under one arm, he was gone.

Through the side window of the front door, Kippy watched the silver Mercedes rocking through the potholes as it moved slowly out of our driveway. Her arms were crossed, and there was a faint smile of amusement on her lips. She said she was slightly overwhelmed, a little suffocated, and quite exhilarated, like she'd often felt after a big final exam in college. But this was more like coming out of a comprehensive two-hour review and oral final exam all rolled into one, of many courses intermingled, and with the professor completely involved. She had been at once enlightened, charmed, entertained, stimulated, mentally caressed (one eyebrow lifted), and (she laughed), hustled out of a dozen eggs.



During the week at Wynnewood, even the workaday family dinners are a treat. There are at least five at table every evening, and it is not unusual for Dr. Anita Medziak (now an eye surgeon in training), or Hanka Weiner (now a nurse), or a visiting scientist from overseas to be included; or perhaps Christopher, or Irena's retired brother, Gene, both of whom live nearby. Assisted by Ania and Barbara, Piotr cooks after a hard day at the hospital where he interns in gynecology. Often the meal begins with a Polish soup that Irena has made. Some of Piotr's efforts are worthy, as was the Squid Neapolitan from *The New York Times* he produced one night. But he's a doctor, not a cook, and in general his main courses would not make anyone's gourmet list. Claude is endlessly amused by what his father accepts at his table. "If any restaurant served such food to him he would throw a fit," Claude says.

But the main course is followed by a series of treats that make every dinner at Wynnewood memorable. First a gourmet selection of cheeses arrives accompanied by a platter of sliced breads and crackers. Then the fruit: three types of pears, two types of apples, some tangerines, cherries in season—all of them prime qual-

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ity and in the perfect state of ripeness. Then the imported cookie assortment. Chocolate-covered biscuits, light-as-a-feather waffle crisps, and shortbreads. And finally, as hot tea is served in tall glass cups, a dish of swiss chocolate is passed around.

Icarus eats with the family. Piotr places the dog's bowl on the floor next to Hilary's place at the far end of the table. Icarus gets to it eventually, but his routine includes begging appetizers from Irena, setting his chin on the table near her place and fixing his big brown eyes on her until she gives up a few treats. Then he steals napkins off the laps of the unwary—an unnerving reminder that there is a large dog under the table—and eventually brings a tennis ball to Piotr, who tosses it for him throughout the meal. Piotr's seat is opposite a doorway to a thirty-foot corridor with a polished cherry floor leading to the gallery. Piotr flips the ball over his shoulder, and Icarus takes off after it, his long nails beating a tattoo on the cherry, then inflicting scars as he skids to a stop over the ball. With everyone politely eating and talking, dutifully ignoring the intermittent flurries of activity with the dog, it could be a scene from a Mel Brooks movie.

During one dinner, when Irena slipped Icarus a piece of chocolate, Hilary caught her in the act. "Dead dog! The dog is dead!" he erupted from his end of the table. "Call the dog undertaker."

Gourmet treats and dog show aside, conversation is the highlight of any Wynnewood family dinner. One evening there was a spirited discussion about the general characteristics of Polish people. The consensus among the six Poles present was that they are sentimental, individualistic, hospitable, stubborn or opinionated, often irrational, and generally ambitious. Then the gathering directed its attention toward Americans, of which I was the only one present. Americans are, it was decided, optimistic, unpredictable, naive or gullible, and noisy. It was difficult to quarrel with that evaluation. I also got teased for waiting until everyone was served before beginning to eat. The Eastern European way is to begin when your plate arrives, while the food is still hot. And Piotr wonders why Americans often say "You're welcome" after being thanked.

Poles, it was also agreed, are not dangerous to polite society until they get on their feet to say goodbye. All the Poles present agreed that nothing takes longer than Polish leave-taking.

Language, in this house where English, German, Italian, Portuguese, Spanish, and some Latin is spoken—in addition to Polish—is often discussed with considerable hilarity. Everyone at the table agrees that aside from Japanese and Chinese, Polish may be the most difficult language in the world. The twenty-eight-letter alphabet, and the predominance and repetition of consonants—especially the *c*, *y*, and *z*—and the scarcity of vowels, make pronunciation very difficult for non-Poles. One evening at a Wynnewood dinner not long after I had spent two days in Warsaw with the Koprowskis, everyone was stumped at the translation of a certain Polish word into English. Because of the way they were talking about it, I correctly intuited that the word was *bum*. Someone suggested jokingly that I had been learning Polish. I said in fact I had learned to speak the language quite well in the two days I spent in Poland. That it didn't seem difficult to me at all. There were gales of laughter.

Poles love to talk about the intricacies of their language, the forms of names that are used in a person's presence and absence, and the rule that makes Irena's official married name Koprowska, not Koprowski. Hilary pointed out one evening that the phrase in Polish meaning "to go to the bathroom," means "to jump on a young girl" in Czechoslovakian.

Another evening Koprowski got rolling on Michael Servetus for some reason. Perhaps it came out of his diatribe on America's growing intolerance of the price required by scientific advancement. "We always have to pay a price," Koprowski said. "You can't ever figure out how many people will succumb to a new process, treatment, or drug in the experimental stages. There will always be a few casualties. There will always be a price. Today America wants the goods without paying."

Or perhaps someone asked Koprowski what trial in history he would like to attend if he could. In any case, he got talking about the heresy trial of Michael Servetus, a brilliant young physician and physiologist who was burned, slowly, at the stake by John Calvin in 1553 for refusing to believe that Jesus was the "Eternal" son of God. The great discovery of Michael Servetus was pulmonary circulation of the blood—the passage of blood from the right side of the heart to the left, through the lungs. But to Serve-

tus, this was a trifle compared with his work toward restoring the truth of Christianity.

"You should see the monument to the Reformation in Geneva," Koprowski said, finally. "There are Calvin, John Knox, who founded Scottish Presbyterianism, Guillaume Farel, the French evangelist, and Theodore Beza—four bearded, cruel men all who look like death itself. Beza was a French Calvinist theologian, friend and chief aid to Calvin. He wrote a paper defending Calvin's conduct during the trial and burning of Servetus. Looking at the four of them makes you want to die." Koprowski paused, chewing on his distaste for religion like it was a copper penny. "You know Dracula was the first Unitarian. He impaled his fellow citizens in the name of religion."

When famous literary characters were being discussed, no one could come up with where a fellow named Prothero belonged. Koprowski called three days later, dedicated student that he is, to say that he was embarrassed to have taken so long to remember that Prothero was from Dylan Thomas's poem, "Under Milkwood."

Another evening at dinner Koprowski was upset with the news he had received that day that an old science friend, Nils Jerne, had passed away. Koprowski called him an intellectual giant, explaining that he had discovered the Network Theory, an important immunological breakthrough which stated that all antibodies are a reflection of other antibodies.

"Jerne loved to drink," Koprowski said, warming to the story. "Once we were at a three-star restaurant in the south of France. It was a very hot day. From all the wine we had drunk we fell asleep with our heads on the table for half an hour. No one woke us up, that's how good this restaurant was. If we met at a conference, Jerne would insist that we visit every bar in the city. We would pub crawl until dawn. If he had to make the opening statement at a seminar that day, he would do it without a problem."

"One night here at Wynnewood he arrived drunk and then drank more. But when two German scientists got into a terrible political argument, shouting at each other until they were ready to fight, it was Jerne who stopped them. Three weeks ago I spoke with him. He was eighty-two."

"I learned he will be buried next to his wife with his head turned to his right," Koprowski said. "Her head was turned to her left when she was buried. So now they can see each other." Koprowski paused while we savored the romantic impact of the Jerne's internment plan. "On the other hand," Koprowski continued, "the father of a friend was buried one lot removed from his wife so she wouldn't kick him after his death."

After dinner on all but the most inclement nights, Hilary Koprowski bundles up if necessary and leads the way to the gazebo in the backyard. He brings the cigars, and Piotr and Ania and Barbara, after they finish kitchen chores, follow with a tray of brandy and glasses. Irena usually joins this group to savor the night air and the soul-warming fire of exceptional brandy. She and Barbara abstain from cigars. Ania often shares a smoke with Piotr. Koprowski is evangelistic about cigars and smoking in general. Even known nonsmokers are repeatedly asked if they would like to try a cigar. "No pregnant women should smoke," Hilary says, "and no one under seventeen. Otherwise, smoke away."

Irena reminds Hilary that he is still in trouble with his daughter-in-law Mary about the incident with her son Paul. When Paul was age ten, going off to summer camp, Hilary slipped him a couple of cigars. He shrugs, grins. "They were good cigars." Counselors found the cigars, and camp administrators called Mary, who knew right away that "Farfar," the childrens' name for their grandfather, was the perpetrator.

Mary laughs about it. "He has maintained this adolescent attitude, infantile regression," she says. "He still loves to tweak authority. He's got a fourteen-year-old mentality, quite beyond the second standard deviation. It's quite amazing." The second standard deviation is a medical term, a measure of a patient's behavior, a quick way of relating a patient to the norm. One level away from normal gets you a mark. Two levels warrants a blue mark, and so on. Psychiatrists say that infantile regression is an ego asset, one that nurtures the creative spirit, that people love to be seduced by such a person. Many women would agree.

If the Koprowski dinner table is something of a forum, albeit a relaxed one, the gazebo is more like sitting around a campfire. It's more intimate. There is no scarcity of laughs at the dinner

table, but talk there can get serious. Little snippets of family business can slip in between the bread and the chocolate. But the gazebo is strictly for heartiness, good cheer, truth or dare. With stocking caps pulled down over one's ears, or swatting at mosquitos—depending on the season—while sipping brandy, it's difficult to get overly serious. With the two attractive young women (Ania and Barbara) creating a reflection of time past, with Piotr sending Icarus on long runs across the yard after the ball, and Irena by his side, Koprowski often reminisces in the gazebo.

He might speak about travels with his mother, of his first memories of collecting acorns in a little sack when he was three years old on a trip to a spa that he says was like the movie, *Last Year at Marianbad*. Or his governesses who taught him German and took care of him while his father traveled and his mother performed dentistry, and whose names—Amelia, Elsa—he remembers after so long. And there was a maid, Rozelia. Or he might talk about his early love for music, his preteen years at the conservatory of music, his teachers, and how they were annoyed when he entered medical school. "Children should have good pianos," he proclaims.

Or the talk might shift to books and writers, opera plots, movies, left-handed pianists . . . left-handed pianists? "Oh yes," he says, and goes on to say that both Prokofiev and Ravel wrote compositions for left-handed pianists. In fact, some of those compositions were dedicated to a *one-armed* pianist named Paul Wittgenstein. That reminds Koprowski of Wittgenstein's famous brother, Ludwig, scion of a wealthy Viennese family who was once a prisoner of the Italians and who taught grade school in a small Austrian village. Ludwig went on to become a famous professor of moral science at Cambridge, but Koprowski assumes one knows that. He is more fascinated by the details: Ludwig was also infamous for not allowing women to attend his lectures.

It is time to say goodnight. Any day with Koprowski is long and full to brimming. The brandy has put a cap on it. The lights are dimming, the seductive call to rest can be heard even in the land where rest could be considered the curse of precious time. Returned from the gazebo, we adjourn to the library in search of

a book that has been mentioned, another to add to the dozens stacking up on my reading list. Koprowski stalks the shelves, sneaking up on his quarry, muttering unhappily as he spots a volume incorrectly filed. He doesn't find what he seeks, but wait—"Aha! Here is something you must see," and he hands me a thin book called *The Metamict State* by a man named Roald Hoffmann. He recites a quick sketch of Hoffmann, a Pole who survived the Nazi occupation and arrived in the United States in 1949. A theoretical chemist at Cornell University, where he is the John Newman Professor of Physical Science, Hoffmann shared the Nobel Prize in chemistry in 1991 for his work in the geometry and reactivity of molecules. And now, after this brief but comprehensive thumbnail biography, the surprise: *The Metamict State* is a book of poetry.

Koprowski reaches in to flip the pages of the book until he arrives at a poem called "New Traffic Patterns Ahead." His face glows with anticipation as he steps back. I read:

Let me eat the crumbs off your muffin
darling,
 let me try
 to simplify
my life. I'm tired of pavlova
and kiwi,
 tongue in jelly
 vermicelli
plain vanilla's what I need,
just like they show on tv.

Let me eat the crumbs off your muffin
baby,
 drop delux
 sell the tux
real cheap. I'll slip on my western gear,
brass buckle,
 Springsteen's
 pale blue jeans
country music's in town and you've
got piles of that NIH money.

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Let me eat the crumbs off your muffin
honey,

no more of
Raskolnikov

He's dull; I've taken up computer
science. You

know the Mac's
got sexy syntax

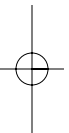
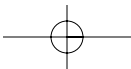
So let's move to Tulsa; you can teach
a course on Yeats and Ammons.

("New Traffic Patterns Ahead," from *The
Metamict State* by Roald Hoffman [University
Press of Florida]. Used with the permission
of the author [all rights reserved by Roald
Hoffman].)

I am slightly stunned by this whacky bit of verse by a Nobel Prize-winning chemist that reminds me of a lyric by songwriter John Prine. Koprowski savors my reaction. "Fantastic," he agrees, beaming. For a moment, the poem floats before us in the silence of the library with all the delight and promise of a sunrise at sea. Then Koprowski is in motion again, flipping the switches of *his* Mac, fans and lights and beeps signifying life. The Yamaha keyboard glows ready.

It is 10:30 P.M. Time for Koprowski to get to work. He's working on a sextet scored for flute, clarinet, violin, guitar, cello, and percussion. A lot to keep track of. But he says it's not so hard. He divides it in two. Three instruments on the top scale, three on the bottom.

He bids me a gracious good night. I climb the stairs toward bed wearily, gratefully. My head is soon on the pillow in the guest room on the third floor. As I drift off, I hear the Yamaha singing far away, pausing, singing a little differently this time, pausing, singing again. And I think he should call this piece, "New Traffic Patterns Ahead."



Listen to the Music

The Life of Hilary Koprowski

Vaughan, R.

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