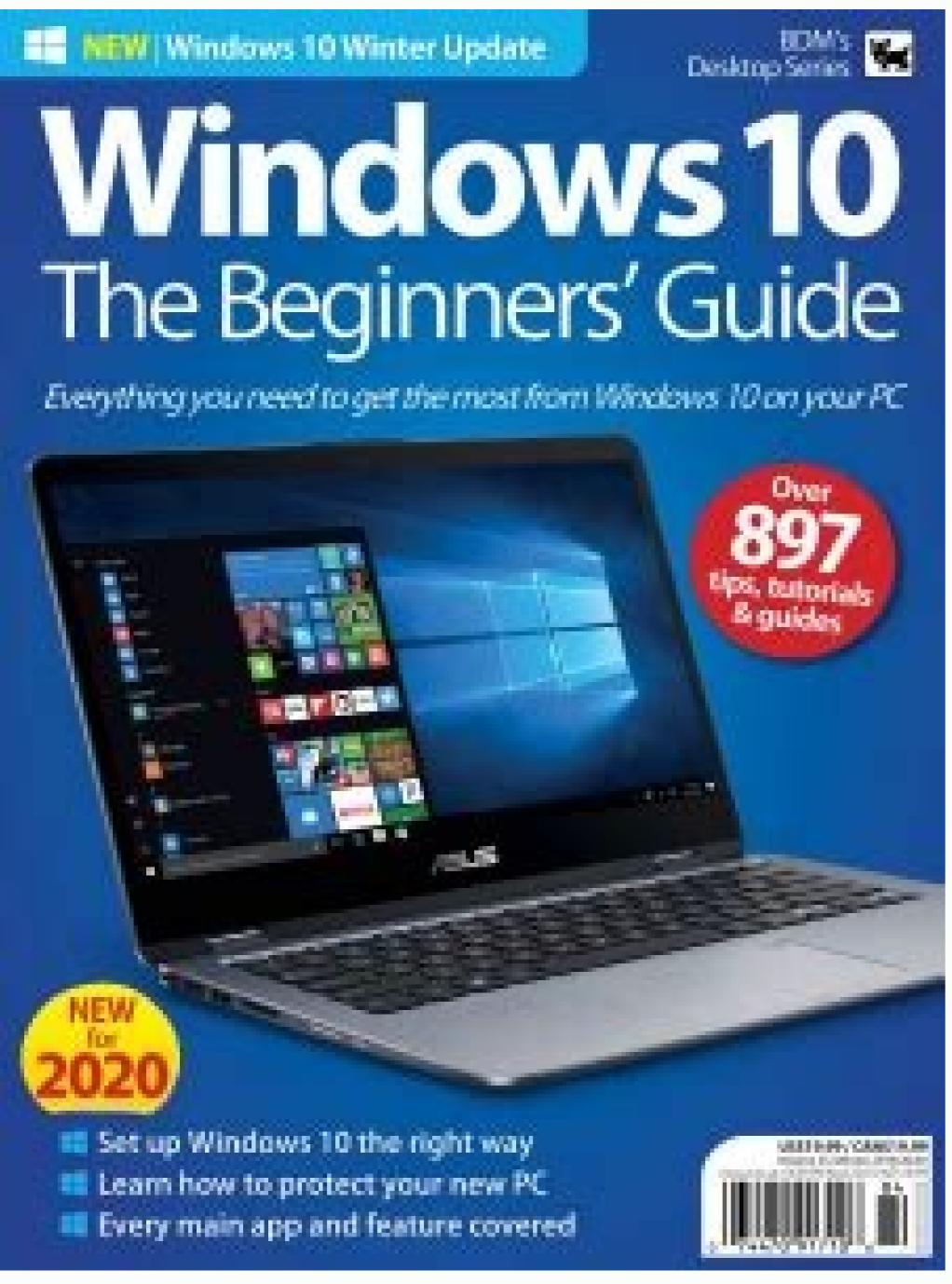
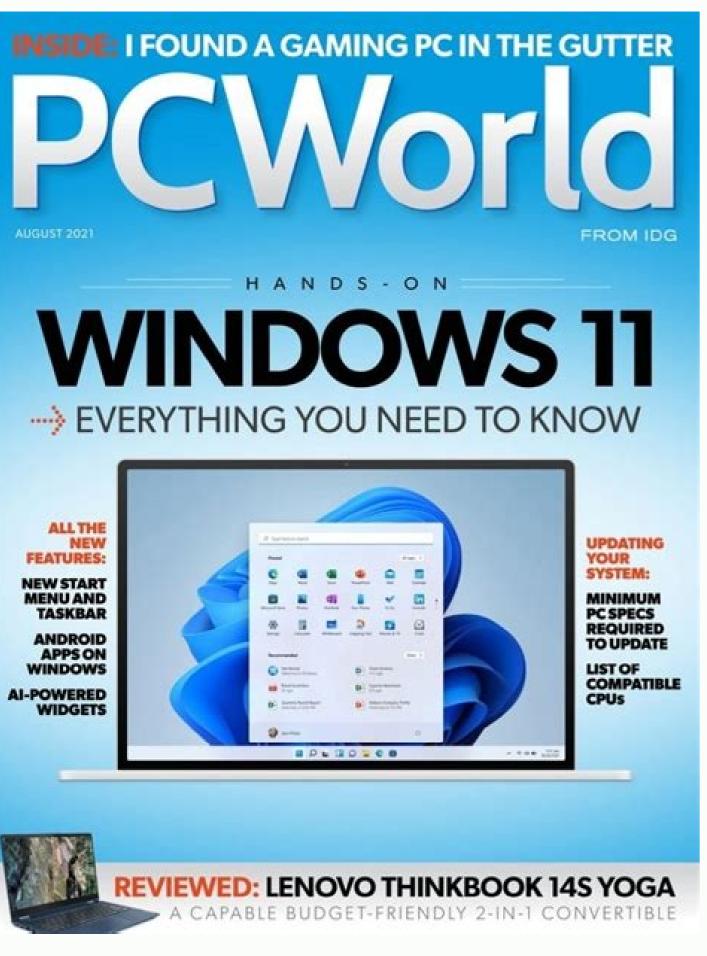
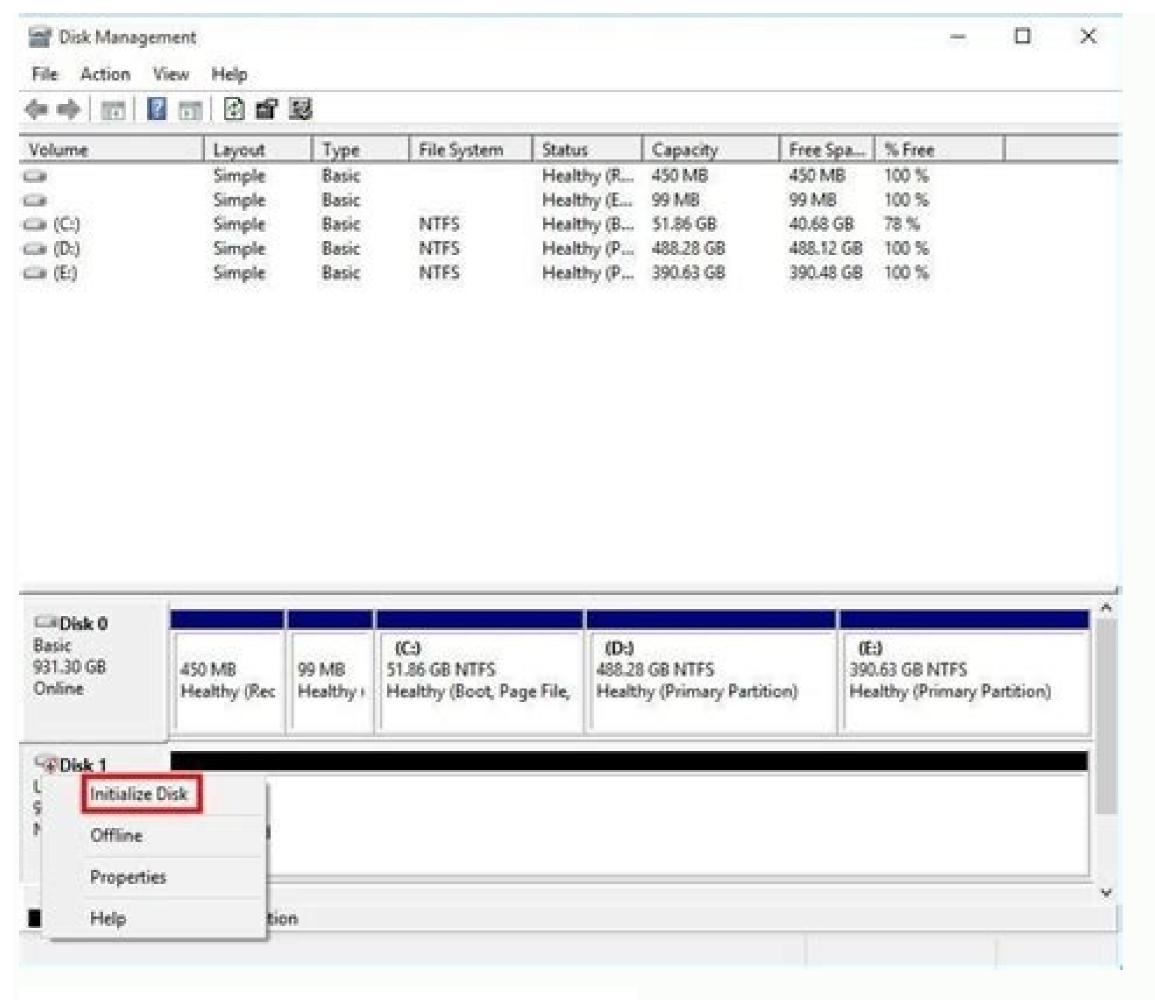
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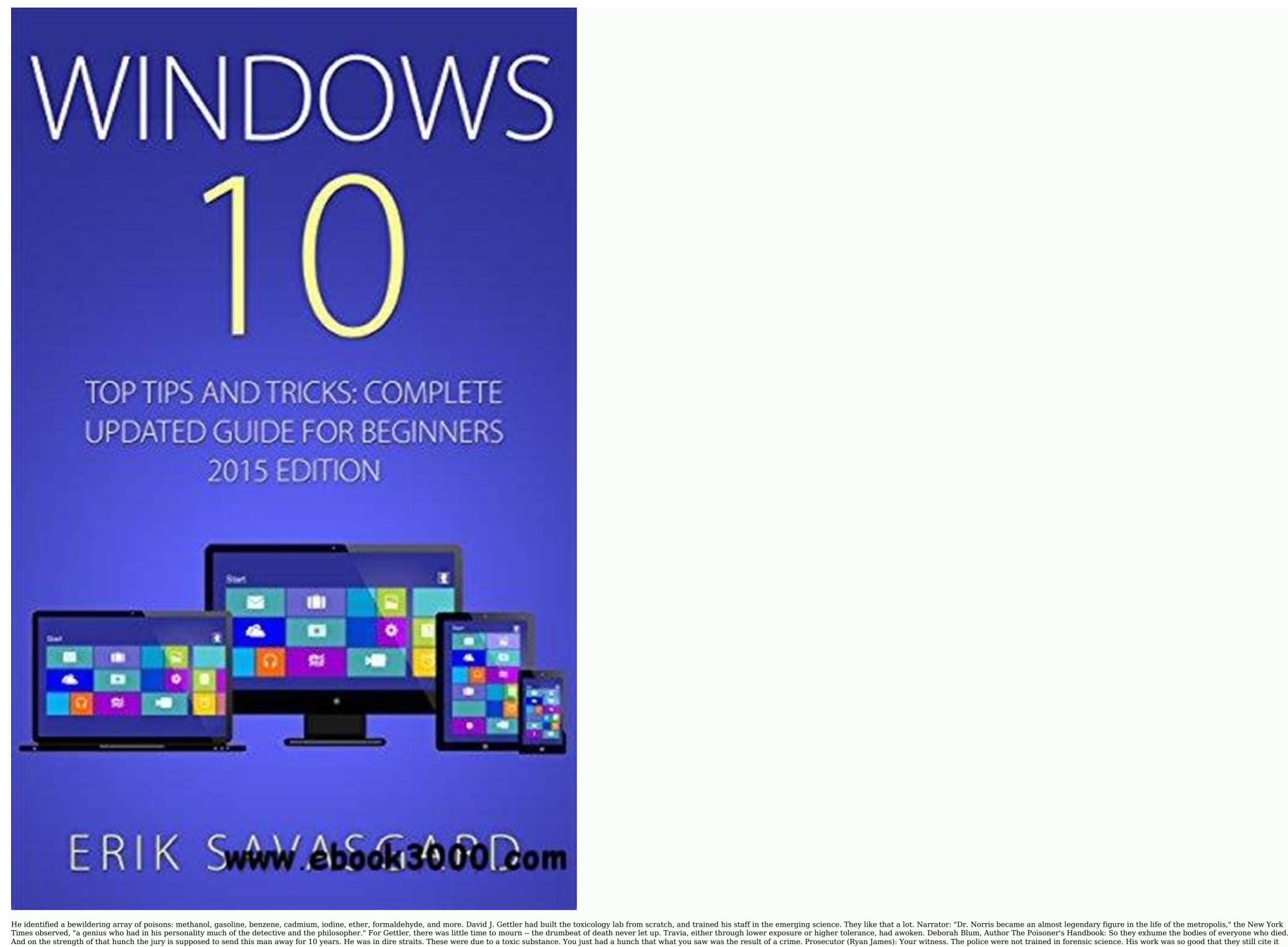
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today. Narrator: As methanol breaks down inside the body, it produces formaldehyde, and then formic acid. Almost half of the city's population had been born abroad, and migration of African Americans from the South was fueling a spectacular cultural renaissance. And they weren't long in figuring out how it got there. Narrator: For Norris, it was a tragically familiar sight. She had gotten him a job at a corner store. Deborah Blum, Author The Poisoner's Handbook: Coroners also had an incentive to make money from the families of the dead. Amelia Maggia (Dominika Haskova): He's wrong. And when you are distilling wood you are making methanol. It had become almost impossible to get away with it. And he brought that idea back to the United States. Norris had been hopeful when Fiorello LaGuardia moved into the mayor's office. With that, the prosecutor charged Fanny and her husband with murder. Unfortunately, those were six feet underground in a New Jersey cemetery. He seemed to have a formidable case. Whether it's answers to families, insurers and courts or if it's a public health issue can you licensed and authorized to practice medicine? Unfortunately for Norris, that energy wasn't always matched by discernment. The newspapers called him a longshoreman, but he spent most days by himself in a cramped apartment near the Brooklyn waterfront. Radium was going right into their blood stream through their mucous membrane. Charles Norris (Don Sparks): Garvin, John. So then they thought, "Okay, "we'll, we'll try poison food." And, and the amazing thing to me is the things he actually ate. Abraham Freireich (Howard Lotker): Ready. She refused. Narrator: The county physician declared that the body contained four times the lethal dose of arsenic. Colin Evans, Writer: And there the story may have died, except that the police received an anonymous letter saying, "You really should look into Mary Francis Creighton. Norris used Gettler's findings as the centerpiece of a national campaign against Prohibition. Alexander Gettler (Chris Bowers): Ok, Harry. He wanted to stay far from the limelight. Getting rid of the body. Very polite, but very shy in a way. All poisons have indelible signatures -- the trick is to reveal them Although Gross had suffered terrible loss, he had been spared an even greater injustice. And what Gettler found was that these gentlemen were unacquainted with forensic science, and furthermore, anyone resembling a coroner was assumed to be a political hack. Marcella Fierro, Forensic Pathologist: All over the city, more and more and more and more people were dying from drinking. Defense Lawyer (Daniel Brown): I will remind the court that the life of a young woman hangs in the balance today. Scott Williams): Well how do you know that the cyanide you found wasn't just a natural by-product of the body's decomposition? Michael M. But does he die? They were distilling their furniture. Narrator: Like many such mysteries, the Jackson case found its way to Charles Norris at Bellevue Hospital. And it stays there. Only now, Alexander Gettler was testifying against her. And he tells me what happens to him. But when he returned to work in the fall, he hardly seemed rejuvenated. Whereas Norris doesn't always have that comfort. He had doggedly pursued the truth, and made the chemistry so compelling that the jury had spared a young woman's life. Gettler showed that the radium was in fact in the bones. By morning he was dead. Once in a while a neighbor, Anna Fredericksen, would come around looking for a drink. So she was relieved when her brother Charles arranged to move in. Although he served time for illegally disposing of a body, Norris and Gettler had saved him from the electric chair. In Bowery dives denatured alcohol was served straight up. Krajicek, Writer: Norris was driven by the desire to create what he called a, a medicallegal justice system in America that was science based, where convictions and acquittals weren't based upon who you knew but were based upon science and fact. He was forced really, literally forced to hire Norris. None of these girls could be saved. She had been losing weight, and her joints ached terribly. You've got people who look like they died of cyanide poisoning, you've run all of your tests, and there's nothing there. Alexander Gettler (Chris Bowers): Jesus. They wanted a medical examiner's office, staffed by professionals, employing the latest techniques in forensic science. Slate: Denatured Alcohol Narrator: On Christmas Eve, 1926, hospitals are the controlled the cont all over New York were flooded with patients hallucinating, blinded, comatose, and dying. On the evening of September 11th 1935, Charles Norris' heart finally gave out. Good night. Kept coming back. Charles Norris (Don Sparks, audio): Nearly 10,000 in this city will die this year from strong drink. He then slowly distilled the resulting sludge. Are you ready? And then after a passage of three weeks his two daughters died. Alexander Gettler (Chris Bowers): So if we do have thallium we should see some green. Krajicek, Writer: You have a man, with blood on his clothes, who's caught throwing the lady's limbs in the water and in his apartment on the kitchen floor is the torso. Alexander Gettler (Chris Bowers): Ok. Set up a steam distillation for cyanide. You see this pain and suffering every day. He was followed by his younger brother, the battle was won. The patrolman finally tackles him and finds he's been carrying half a woman's body. She died from carbon monoxide poisoning. This is the last one. Narrator: Together, Norris and Gettler had pursued an elusive vision: a partnership between forensic scientists and government, which would protect citizens from the unintended consequences of progress. "We unfortunately gave work to a great many people who were physically unfit," he explained. Colin Evans, Writer: So once the police had this information they realize, "Wait, Ada Applegate is being buried today." So they immediately went rushing off the church. Companies didn't have to properly label things. The country was at war, and soldiers in the trenches had found that these luminous watches were just bright enough to read at night without being seen by the enemy. Detective McCallister (Brian Caspe): McAllister, Deborah Blum, Author The Poisoner's Handbook: So this set up a confrontation. Although the system was fallible, no one seriously questioned the government's duty to protect its citizens. It was called "smoke," and it cost a few cents a glass. Creighton admitted that she purchased rat poison -- "Rough on Rats," it's called -- shortly before Mrs. Through an arduous process, Gettler arrived at a precise number. Alexander Gettler (Chris Bowers): Because bismuth is the primary ingredient in one of the medications the victim was taking. This was a far cry from the way New York City had dealt with suspicious deaths in the past. They would take that brush and bring it to their lips to get a fine point on it. There's no substitute for a good homicide detective. A deeper color indicated a higher concentration. Deborah Blum, Author The Poisoner's Handbook: Norris and Gettler, they were very different. Arsenic vaporizes at a much lower temperature than bismuth. So you could find coroners who wouldn't release the body to a family unless they went to a funeral home that was giving them kickbacks. And about a week later he comes back, you know, he has a broken arm and a bad headache. Most of them were there by order of the federal government. It took just an hour for the carbon monoxide to finally kill him. It's never going to work. Marcella Fierro, Forensic Pathologist: So then they had been the victims of a dual suicide. And the gas they used to use to fumigate then was hydrogen cyanide, which is a phenomenally poisonous gas. Charles Norris (Don Sparks): She was already dead. But the case troubled him: why had Gross done it, and why did he keep insisting he was innocent? In fact, Fanny Creighton was living in Baldwin, Long Island, and was a housemate of Ada Applegate's. The Brooklyn prosecutor said, "That's a lot of cocoa." Deborah Blum, Author The Poisoner's Handbook: So, you know, if you're a police officer and you're connecting all these dots, dying family, amazingly untouched dad, access to poison, the poison, and access to what appears to be the method of delivery, it looks like a perfect case. And, in large part because of Alexander Gettler, homicidal poisoning had all but disappeared. And they all look at Mike Malloy passed out again and think, "here's our guy." Narrator: There were four men in on the plan: owner Frank Marino, bartender Red Murphy, local undertaker Frankie Pasqua, and a fruit vendor, Daniel Kriesberg. The Roaring 20s were a distant memory, except for one thing: Prohibition. Narrator: With the onset of Prohibition, methanol became one of Gettler's obsessions. Smoke joints like Tony Marino's finally disappeared when Prohibition ended in December of 1933. Narrator: Two weeks after his death, Fremont Jackson's lungs were delivered to Gettler's lab, where they were ground up and distilled in preparation for the Prussian Blue test. Defense Lawyer (Daniel Brown): Enough to kill? It's over. Even as she was celebrating her acquittal, the prosecutor was lining up another case against her. Deborah Blum, Author The Poisoner's Handbook: So when you are a dial painter, and you're painting watches with radium paint, then you're just thinking you're doing something good for yourself, right? Well by this time he knows what? Gettler's procedure also isolated other elements that could be mistaken for thallium. Traditionally, they had been handled by city coroners. Michael Lerner, Historian: It's just stunning to see really what you could only describe as mass poisoning brought about by government policy. Deborah Blum, Author The Poisoner's Handbook: Standard Oil and General Motors formed a corporation in which they were the provider of leaded gasoline. Prosecutor (Curtis Matthew): Ridiculous. He does not. But Prohibition would remain in force until three quarters of the states had voted for repeal. Harry. It looked like Fanny was heading to the electric chair. Good. Charles Norris (Don Sparks): Looks clean to me. Michael Lerner, Historian: Bootleggers didn't wanna kill their customers off so they would do things like redistill denatured alcohol to distill out the poison. And it was thought to be a wonderful thing. The Great War was fought with hardened steel, high explosives, flame throwers, and poison gas. I assume that you did this analysis soon after Mr. Jackson's death? He spoke no English, had very little money, and no real friends. Even then he had been obsessed with chemistry. But nothing Gettler did could stem the slowly rising tide of poisoned alcohol. Defense Lawyer (Daniel Brown): Doctor Gettler, why was Dr. Edel's result so different from yours? So, Standard Oil and GM, went to Coolidge, and they said, "Could we deal with this right away? Alexander Gettler (Chris Bowers): Negative so far. But bismuth won't; at least not at these temperatures. Narrator: He then inserted a drop of the thallium solution. They will go to motion pictures. By the time he was ready to retire in the fall of 1958, New York was enjoying a level of wealth and cultural influence that surpassed even the Roaring 20s. Any cyanide in the Jacksons' stomachs would be concentrated in the distillate collected at the end of the process. But within the first minutes of Prohibition going into affect people are breaking the law. Then he placed the bones on them and left them in the dark for a couple of days. Prosecutor (Ryan James): How sure can you be that the victim ingested "Rough on Rats?" Alexander Gettler (Chris Bowers): Right. And that will stop people from drinking." Narrator: On New Year's Eve 1926, the Treasury Department announced that denatured alcohol would be made still more deadly. They were in pesticides. And Gettler discovers that thallium is in the bodies of all these dead children but not in the mom. Abraham Freireich (Howard Lotker): Dr. Gettler's about to start that now. In the end, they would transform the way science deals with death. Charles Norris (Don Sparks): As you suspected. At 75, Gettler estimated that he had analyzed more than 100,000 bodies. Marcella Fierro, Forensic Pathologist: They exhumed her bones and they cleaned them. But the person he fixed on was not Fanny Creighton but Fanny Creighton's 15-year-old daughter. Abraham Freireich (Howard Lotker): Dionin, magnesium, sodium bicarbonate, and bismuth subcarbonate, and b Alexander Gettler (Chris Bowers): No. I am toxicologist to the Chief Medical Examiner's Office. Norris thought that was impossible. He wore a suit that he owed money on. Unidentified Man, about 28 years old, 5 feet 8 inches, 145 lbs., found unconscious outside 1220 Lexington Ave. For four years now, Norris had been studying the bodies of victims to find out how they died. Supervisor (actor): Break time girls! Narrator: The paint was made with radium less than a millionth of a gram per watch. Alexander Gettler (Chris Bowers): Ok Abe. Alexander (Chris Bowe (Chris Bowers): Yeah -- Fremont. The entire city pulsed with frenetic energy. But bismuth will remain unchanged. The body sees radium, thinks it's calcium, and takes it right to the bone. Detective McCallister (Brian Caspe): There's multiple stab wounds. Finally, that message was being heard. And he wasn't telling the police, or anyone else, how Anna Fredericksen had died. Automobiles and airplanes used steel that had been hardened, rubber that had been vulcanized, and petroleum that had been refined, all through chemical processes, on an ever increasing scale. They prove it. He lived in Bushwick, Brooklyn. Everywhere he looked, Gettler found arsenic: four times the lethal dose. But over the last century, chemistry had fundamentally changed that relationship. As a result, engines ran cooler, more quietly, and delivered more horsepower. Michael Lerner, Historian: New York was a very different city once the Depression hit. You know, "My friend got in trouble with this. But the last question remained. And that's it. Abraham Freireich (Howard Lotker): I'm set for the Reinsch test. In the struggle to make ends meet, more and more families were moving in together. He worked wholeheartedly to stop the spread of the poison, even devising a portable test for Prohibition agents to use on the road. For Gettler, Fanny Creighton's trial was a measure of the changing status of forensic science. Narrator: The mystery was beginning to unfold. Creighton with arsenic? The penalty for murder was death. Marcella Fierro, Forensic Pathologist: Juries like the certainty of science. Charles Norris (Don Sparks): It is the body of a wellnourished elderly white male.... And one night the owner and his friends were sort of bemoaning the bad times and wishing they knew someone who would conveniently die and leave them some money. Narrator: By New Years, the refrigerators in the morgue at Bellevue were full, and corpses lined the hallways. Deborah Blum, Author The Poisoner's Handbook: Radium essentially masks itself as calcium. And just as important, old materials were being altered for new uses. There was one sandwich that had rotten sardines, ground glass, metal shavings. Deborah Blum, Author The Poisoner's Handbook: You're poor. They went to bed hungry most nights. Fanny's acquittal was a great victory for Gettler. So let's heat our plate and see what happens. Nothing the doctors could do would bring them back. Marcella Fierro, Forensic Pathologist: These ladies were doomed. He wanted a medical examiner's department that would do favors for him. Both of them felt very strongly, that there was no point in doing it if all you did was solve murders. The police were left with five bodies, and one dramatic clue. He washed his hands in a bowl of tetraethyl lead to prove how safe it is. It looked like the trend might spread. Norris was chosen to lead the new department. Cyanide can be unmasked by adding chemicals to turn it a deep, Prussian blue. They had memory problems; they got irritable; they would develop, in retrospect, what we would call the signs of dementia. It was their first encounter with a terrifying new poison. Alexander Gettler (Chris Bowers): Ok. Abraham Freireich (Howard Lotker): You think she's guilty? Gettler had married an Irish Catholic schoolteacher, Alice Gorman, despite her family's objections to marrying a Jew. He started by grinding a chunk of the stomach wall. He was well accustomed to death, but even so, some episodes were hard to forget. In 1924, Norris came up against one of the most lucrative poisons of all. And there the story may have died except that the police received an anonymous letter comprised of clippings from a case that had happened twelve years earlier. These were poisoning deaths. Colin Evans, Writer: Initially the police suspected that there was a love affair between Fanny and Everret so maybe they killed his wife in collusion. I mean normal people don't think that way. He would generally sweep out of a chauffeur-driven limousine. Deborah Blum, Author The Poisoner's Handbook: It's a case study in good science saving someone's life. Narrator: The police started interviewing neighbors and friends. Alexander Gettler (Chris Bowers): I started by performing the same test as Dr. Edel, which yielded the same residue. Deborah Blum, Author The Poisoner's Handbook: So, they exhume Mike Malloy's body. But as it was, Gettler was able to provide the evidence that sent all four men to the electric chair. This is a guy on the take." Narrator: In May of 1935 LaGuardia accused Norris and his staff of embezzling almost two hundred thousand dollars. Twenty-four year old William McSweeney started acting so strangely that his sister-in-law called the police. To their astonishment, she wanted to talk about her past. Slate: Lead Marcella Fierro, Forensic Pathologist: The building began to do strange things. Bailiff (actor): Do you swear to tell the truth, the whole truth, and nothing but the truth, so help you God? The police assumed that the gas had leached into Fredericksen's body after she died. It literally starts to break the bones apart. Narrator: But this color is visible only for the brief moment it takes a sample to evaporate, so precise identification is impossible with the naked eye. I mean Norris acted like a quy with money. Slate: Methanol Narrator: Since 1920, "intoxicating liquors" had been banned throughout the United States. And if that spectrum was projected onto a sheet of photo paper, it could be preserved for careful analysis. Had he done so, the embalming fluids would have destroyed all traces of carbon monoxide. Slate: Thallium David J. Charles Norris (Don Sparks): Other than the usual post-mortem changes there are no marks or bruises on the scalp, face, or neck.... Maybe that's a little bit of an aristocratic thing. Fredericksen had not. Well she is described as a large woman. John was away at work much of the time, leaving Fanny alone in the house. Narrator: Two weeks after Fanny's first trial ended, the crowds returned to the same courtroom for a second round. Even so, Travia was charged with murder. So it's a piece of cake over at the Bellevue lab. An overjoyed Standard Oil spokesman likened it to "a gift of God." Inventor Thomas Midgley was less effusive; he had had to take a leave of absence after being diagnosed with lead poisoning. First, he had to confirm that there was, in fact, lead in the men's bodies. Michael Lerner, Historian: Instead of people stepping back and saying "this isn't working," the drys push the federal government to basically double down and say, "Let's literally double the amount of poison in the alcohol. That was his mission. But other cases burned themselves in memory. Narrator: Norris, for his part, did everything he could to publicize Prohibition's toll -- writing articles, giving interviews, and lecturing the authorities. "I don't want my husband to have committed suicide." Narrator: If you had the right connections you could get away with murder. There was plenty on hand, in the popular tonic that Fanny used to lighten her skin. The deeper the mystery, the more obsessive he became. Frederick Gross was a bookkeeper for a little import/export company. Saunter over to the body and have a look and say, "Yeah, yeah, And he was taking a radical approach to the job. Narrator: In January of 1936, for the third time in her life, Fanny Creighton stood trial for murder. Deborah Blum, Author The Poisoner's Handbook: Defense attorneys were starting to say, "When Alexander Gettler comes into a courtroom he's an unanswerable witness. Alexander Gettler (Chris Bowers): Ah. Bismuth. But as Prohibition progresses, as the liquor supply becomes more and more unreliable, people start adulterating the product, they'd start diluting the product. Gross replied, "Son, I was busy." Marcella Fierro, Forensic Pathologist: I know exactly what Norris went through. Abraham Freireich (Howard Lotker): From the tin.... The guy takes off. Gettler had the answer to his first question: the brain was riddled with lead. Until then, the smoke joints would continue to ply their trade; places like the Mermaid Tavern in the Bronx, the hideaway of a man who would become known as Mike the Durable. Sometimes the work left him numb. So how's he gonna get rid of this large woman? Narrator: Norris had little doubt about the nature of the poison: everything pointed to tetraethyl lead. Krajicek, Writer: By all accounts Frederick Gross was a very pleasant and polite fellow. They also sold cocoa. Brings him in, we get his address, come here, and we find this. But everyone assumed that any danger was fleeting, that radium would pass through the body without leaving a trace. So Coolidge appointed a panel of experts that only included industry scientists. Another piece of the puzzle fell into place. But it concluded that the public's exposure was too low to be of concern, and dismissed Norris's plea for a ban. And Fredrick Gross had brought home a couple-pound tin of it one week and then brought home another two-pound tin of it a week later. He is knocked to the sidewalk where some very helpful policemen rescue him. Scott Williams): Based on what? Alexander Gettler (Chris Bowers): Dr. Edel assumed that the residue was pure arsenic. Marcella Fierro. Forensic Pathologist: Gettler and Norris recognized that people were not going to stop drinking simply because a law had been passed to stop drinking. Crops were fed with chemical fertilizers, and protected with chemical pesticides. Marcella Fierro, Forensic Pathologist: This is a multiple death. And so at that point it was decided to exhume their bodies. Colin Evans, Writer: There was nothing about the death to attract any suspicion whatsoever. This breakdown of methanol into formic acid can actually take up to five days. You have your little home still. Here, just beyond the city limits, hardships were hidden from view. Marcella Fierro, Forensic Pathologist: Gettler examined the stomach wall. He finds this lethal level of carbon monoxide and that was it. The next step was to determine how cvanide gas could have seeped into the Jacksons' apartment. But from day one, it was clear that he had made a powerful enemy. Narrator: Many of the victims hadn't shown any symptoms until long after they had left their jobs. The Dial Painters tragedy marked the beginning of a profound shift in public opinion. The great majority of drinkers weren't quite so desperate. He needed to confirm beyond a shadow of doubt whether the solution actually contained the poison. And because they were paid by the body, coroners liked to process as many as possible, as quickly as possible, as quickly as possible. That was enough to give it a magical glow. Norris couldn't afford any mistakes, especially when the whole country was watching As the main ingredient in illuminating gas, carbon monoxide killed more New Yorkers every year than tuberculosis, measles, and typhoid combined. What was then considered an act of kindness on our part has since been turned against us." Marcella Fierro, Forensic Pathologist: Business could run wild with worker's safety in those days. There were 237 fatal shootings, and 34 stabbings. Alexander Gettler (Chris Bowers): Cyanide is not a by-product of decomposition. Bountiful harvests, along with chemical disinfectants, antiseptics, and chlorinated water, had helped cut the infant mortality rate by half, and extended the average American life by ten years. By 1925, five were dead, and several others -- including Amelia's two sisters -- were showing the same terrifying symptoms: anemias, ulcers, tumors, and decaying bones. Alexander Gettler (Chris Bowers): Yes. 32 years old; found unconscious at 32nd Street and Broadway at 1:30 o'clock this morning. And every case seemed to conjure up a new set of adversaries; the more lucrative the poison, the more powerful the opponent. Norris took up his duties with renewed enthusiasm, and with a style that was a source of wonder to his toxicologist. The spectrograph had been designed to do just that. Narrator: Gettler wondered whether the county physician had it right. His testimony is so trusted at this point, his science is considered so exact that we can't win a case when he's on the other side." Narrator: On January 30, 1936, the jury found Fanny Creighton and Everett Applegate guilty of murder. It was called "denaturing," and under normal circumstances it simply allowed the government to regulate the market. Scott Williams): You exhumed the body? Narrator: The prosecution's case collapsed. The story began in 1917, when Amelia Magia got her first job. There's bluing around the lips, which would which would normally say to you, "Someone was having a problem getting oxygen." Cyanide interferes with your body's ability to process oxygen, so that you have a chemical suffocation. So this is the problem with the Reinsch test. But rather than stop there, we processed the residue by heating it, to see whether it was arsenic or bismuth. So we start over. Slate: Arsenic Narrator: All winter long. Fanny Creighton had been desperate for company. In the spring of 1923, soon after Fanny convinced her brother to move in, she took out an insurance policy on his life. But on the last day of the trial, she was finally able to explain what had happened. Deborah Blum, Author The Poisoner's Handbook: The only person who's not getting sick is the dad. Defense Lawyer (Daniel Brown): Thank you, Dr. Gettler. Pass the clamp. Despite the company's denials, the local medical examiner, Harrison Martland, was convinced that radium was the killer. He moved slowly, and joked with Gettler about being too old for the job. And she'd done it as an act of kindness to her husband. But poor people had to take what they could get. Harry Schwartz (Ondrej Paces): Ok. Narrator: If the Jacksons had swallowed cyanide, there would be traces in their stomachs. If the dangers of tetraethyl lead were well understood, so were the financial implications. 'That's my patient. Lo and behold they found arsenic in the body of her mother-in-law. What was left of Gross's life he owed to Alexander Gettler. Alexander Gettler (Chris Bowers): Well, we know that the cocoa wasn't the murder weapon. And then, Katherine, the wife, died. Let me correct myself: while it's possible that small amounts of cyanide might be produced during decomposition, that would never account for the concentrations in Mr. Jackson's lungs. Katherine Schaub (Iveta Elisabeth Lit): Hey. Even in an era of rampant corruption, New York coroners stood out. Narrator: Norris never knew what awaited him when he was called to a crime scene. It was understood that like most medicines, radium could be hazardous. Gettler's life work boiled down to one fiendishly difficult task: finding trace amounts of poison in an overwhelming matrix of human tissue. Norris was relieved when his old nemesis Mayor Hylan left office, although he had doubts about his replacement. Painters, milkmen, undertakers, musicians; anyone could be a coroner. Deborah Blum, Author The Poisoner's Handbook: I've always wondered how Gettler felt on the day that he testified in the trial So as you heat the residue, any arsenic will evaporate first -- you can see it clearly. If you have no evaporation, no arsenic. Charles Norris (Don Sparks): Abraham! Any word on the Jacksons? No one had ever seen a poison that took effect after months or even years. Narrator: But if the flame is viewed through a prism, the resulting color spectrum is like an element's fingerprint. Both men got off. Gettler was most at home finding his way through intricate mazes of compounds and formulas. She had mixed arsenic into his chocolate pudding. Narrator: Thallium's fingerprint was two characteristic bands of light. Next, he needed to precisely measure the concentration. He confirmed that when redhot copper was dunked in a methanol-heavy drink... They were soon forgotten, but Durable Mike Malloy would live on in memory, as the subject of songs, plays, novels, and movies. Deborah Blum, Author The Poisoner's Handbook: There were signs that this was possibly a cyanide poisoning. Narrator: But Fanny had already been declared not guilty of the murder of her brother; she couldn't be tried twice for the same crime. People were a little weirded out by lead, and so they were pretending this was just some other magic, wonderful formula. But his paper on cyanide became part of something much larger. Charles Norris (Don Sparks): Norris. Her parents were struggling to make ends meet, and she wanted to help. Narrator: By 1933, New York had become a landscape of breadlines, soup kitchens, and homeless encampments. City employees were supposed to retire at 70, but New York made an exception for its single-minded toxicologist. When the City Council voted to double his salary, he dismissed the critics by telling them: "Imagine what you'd have to pay me if I worked full time." It soon became apparent that Jimmy Walker wasn't going to solve Norris's budget troubles, but neither would he make trouble for him. Slate: Arsenic The Depression looked different in the suburbs. The death of a young immigrant wasn't news. Each element has its own spectrum; no two are alike. He goes back to the bar and sleeps it off. Poisoned alcohol almost disappeared as well: in the first full year after Prohibition Norris counted only two methanol deaths. Deborah Blum, Author The Poisoner's Handbook: Mike is this Irish drifter who has, you know, a tab longer than his arm and doesn't pay it. His real passion was horse racing; he spent endless hours at the racetrack, lost in recalculations of odds and stakes. Prosecutor (Curtis Matthew): And? It was easy to lose sight of the suffering behind those numbers, but in the spring of 1935, one story made it all too real. Their spines would crumble. Deborah Blum, Author The Poisoner's Handbook: You see this profound change in attitudes toward public health and regulation. Scott Williams): You have testified that you found traces of cyanide in Fremont Jackson's lungs. She had been unable to stop his slide into depression; her little brother must have poisoned himself to escape from his misery. Alexander Gettler (Chris Bowers): Dr. Norris! Here -- have a look. The party atmosphere of the 1920s is gone. Everyone's saying just set it aside. Applegate became ill. He could retreat into the laboratory, you know, go back to all the beautiful elegance of chemistry and find comfort in that. Krajicek, Writer: It turned out that Frederick Gross' employer sold thallium as a pesticide against rodents and bugs and whatnot. "Cripples and other incapacitated persons were engaged. He was a very small government, non-regulation kind of guy. Marcella Fierro, Forensic Pathologist: He thinks he's killed her. Instead of breaking down the tissue with acid, we'll dry it out on a steam bath, and then ash it in the electric muffle. Radium was almost immediately put into medical practice for shrinking tumors. If that gasoline was leaded, Standard Oil and GM would make a profit on every drop. The job was handed out by the mayor like any other political plum. Krajicek, Writer: After finishing his medical training, Norris went to Europe, studied in Berlin and Vienna. Gettler devised a test to find radium in a set of human remains, and on October 15th the body of the first known victim was delivered to Bellevue: Amelia Magia. It appeared to be just another awful tragedy, a woman dying in her mid 30s for no accountable reason. The five-year-old asked his father why he hadn't come to see him on visiting Sundays. They were inhaling it in addition to absorbing it through their skin. Alexander Gettler (Chris Bowers): ...but when Harry's ready start with a hydrogen sulfite reaction. Narrator: Alone in the lab, Gettler answered the question he had been unable to answer in court. Narrator: On the 24th of October, Ernest Oelgert became delirious at work, dodging about in terror, shouting "there are three coming at me at once." Later that night, Walter Dymock walked out of the second floor window of his bedroom. Deborah Blum, Author The Poisoner's Handbook: A lot of things that we think of today as dangerous poisons were just on your grocery store shelves or in the pharmacy. Marcella Fierro, Forensic Pathologist: It was a miserable death. Never? The theory of spectroscopy had been around for almost a century. The jury found Francesco Travia not guilty of murder. Deborah Blum, Author The Poisoner's Handbook: Alexander Gettler would have been reading about this lovely young mother who's seen to be, caught in the evil machinations of a prosecutor who's out to get her. That's how the evening of November 29th began. There's this weird reddening of the skin because of the way it chemically interacts with the blood stream. His tenure ended in spectacular fashion when he fled the country to avoid being prosecuted for corruption. Narrator: A batch of highly toxic liquor had hit the streets. Whether it was lead or whether it was radium or all sorts of other toxic substances in the work place there was no serious agency to protect workers. Alexander Gettler (Chris Bowers): Where's the paperwork? Close your eyes. They will go to the theater more often. In 1935 Bushwick was sort of the hinterlands, a neighborhood of immigrants, cold water tenements; and it was a neighborhood of poverty. Instead, it would mark the emergence of forensic science, and a new era in criminal investigation. Then they looked around and nobody could find any sign of any poison anywhere. Norris needed answers. Deborah Blum, Author The Poisoner's Handbook: Cyanide was a very popular rat killer of the time. That this really was the end. It took four men to get him into a

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straightjacket. Michael Lerner, Historian: There were plenty of people who predicted very positive outcomes from Prohibition. But there was still no proof that the Jacksons had inhaled the cyanide gas. It doesn't work. Nothing had ever come easily to Alexander Gettler. He and his colleagues had revolutionized criminal investigation. We think there's
something extremely suspicious about her." And this set investigative minds to work. He had been right all along. He had to trace the lead's passage through the body by analyzing every place that it might have been deposited. He agreed to move in with his in-laws, and even attended church with them on Sundays. So she sees this as a chance to
move the kid out. Michael Lerner, Historian: Nothing the Prohibitionists had promised had come to happen. It was based on a peculiar phenomenon: when any element is heated to the point that it glows, it emits a characteristic color. Was she taking any medications? And that year, 997 New Yorkers died of poisoning. He wore really good clothes. As
Gettler saw it, his true legacy was the mission that he and Charles Norris had embarked upon so many years before. Amelia Magia died on September 12th 1922, at the age of 25. Narrator: Most damaging of all, in Fanny's home detectives had found a
bottle of Fowler's Solution, a popular cosmetic tonic. So you're living in this world that's sort of a slosh with really dangerous compounds that people did not entirely understand. But the only remedy Norris held out was the repeal of Prohibition, and that was nowhere in sight. The police didn't have to look far for their suspect; among the mourners at
Ada Applegate's funeral was Fanny Creighton. Imagine being a juror trying to weigh the contradictory testimony of two credible people. Narrator: Investigators suspected poison, and the hair loss pointed to a highly toxic heavy metal that was widely used
in pesticides: thallium. Engineers had recently found that if a small quantity of tetraethyl lead was added to gasoline, it made the fuel burn more efficiently. Prosecutor (Curtis Matthew): Exactly. Scott Williams): Really? He had put himself through school by working the graveyard shift at the Brooklyn/Battery ferry, doing homework through the night
and attending classes during the day. Soon, he'd have the chance to find out. Narrator: The concept was simple enough, but it meant separating less than 1/10,000 of an ounce of lead from a pound of human tissue. Narrator: In 1921,
after four years at the factory, Magia had to quit her job. 40 years old, found dead in a hallway at 302 Hudson Avenue, Brooklyn. We're cutting you from $35 a week." He kept his job but he wasn't making enough money to feed his family. There was no coal in the cellar to keep the flat warm. Alexander Gettler was a stickler for the rules,
but he never made a fuss about the illicit brewery his relatives operated on the second floor. Marcella Fierro, Forensic Pathologist: So his relationship to the dead body is that of, of a doctor to a patient. Now, artificial materials were being created from scratch -- plastics, cellophane, nylon, polyester. Fanny's lawyers called, asking him to examine her
mother-in-law's remains. Marcella Fierro, Forensic Pathologist: This was pioneering work. Narrator: Gettler proved that the cocoa hadn't been poisoned at all; rather, copper from the tin had leached into the powder. Narrator: Gettler proved that the cocoa hadn't been poisoned at all; rather, copper from the tin had leached into the powder. Narrator: Norris asked Gettler to determine whether a dead body could absorb carbon monoxide. Alexander Gettler (Chris Bowers):
Copper. If that was true, he was up against an entirely new poison. As Norris and Gettler made their way into court, they were apprehensive. Well, obviously make her a small woman. Patrolman sees a guy dumping something suspicious into the water off India Wharf. That is where Gettler's search began. What are you gonna put in it? Nobody knew
how long he lay on the ground before a passerby had him taken to the hospital. Alexander Gettler (Chris Bowers): Those medications often contain traces of arsenic. It had been called "The Chemists' War," and by the time it ended, the revulsion over chemical weapons was so deep that they were being banned by the Great Powers. In July of 1925, he
traveled to Europe, where he spent six months being treated for exhaustion. Narrator: The last step was to compare the photo paper with a chart of known color patterns. Narrator: In Norris' eyes, Prohibition had become a plague. He retrieved three unclaimed bodies from the morgue, enclosed them in sealed metal boxes, and piped the boxes full of
illuminating gas. Deborah Blum, Author The Poisoner's Handbook: He hasn't taken out any of those handy insurance policies, right. Katherine Schaub (Iveta Elisabeth Lit): You still do that trick? The D.A. reluctantly gave permission to exhume Fremont Jackson's body, a request that would have been unthinkable when coroners were in charge. The
prosecutor had no doubt about how it got there. He gave his life to this, and so those losses and failures and things that he didn't achieve wore him down. So they took him out to a park. Charles Norris (Don Sparks): Damn. But there was no agency with the power to ban radium outright. Narrator: The hunt was almost over. Marcella Fierro, Forensic
Pathologist: When the police went and they find a body in pieces, I mean your first thought has to be "something very bad has happened here." Because we don't ordinarily cut bodies up and dump them in the river. Katherine Schaub (Iveta Elisabeth Lit): Here. But the jobs and the money were disappearing all the same. Then, the source of the poison
was revealed: during their argument a coffee pot had been tipped over on the stove, extinguishing the flame, causing a massive leak. I'd like you to help me cover up that." But Norris was too much of a purist to ever play those games. Charles Norris (Don Sparks): I'm the M.E. Detective McCallister (Brian Caspe): Oh. Ok. Pretty cut and dried. But he
loved it. New Jersey ordered Standard Oil to shut down the loony gas building. The only way to do that was to carry out the same grueling procedure on the men's bones, blood, brains, lungs, livers and kidneys. Deborah Blum, Author The Poisoner's Handbook: So their thought was here's this shaky alcoholic. Gordon, Mabel, 31 years old, of 40 East
133rd St. George F. Deborah Blum, Author The Poisoner's Handbook: His 18-month-old daughter before she died, a neighbor described her, you know, as bald as an egg. Norris spent the day chronicling the epidemic. Gettler came up with a simple experiment. You have an obligation to the patient to get it right. Charles Norris (Don Sparks): Are there
many more? Seventeen hundred years before the introduction of Ethyl, a Greek physician had observed that lead caused 'the mind to give way.' Tetraethyl lead had been developed in the 1850s, but it had never been widely used, in part because it was too easily absorbed into the body. Norris and Gettler had been sounding that warning for years,
urging the government to protect its citizens. So, of course, the police are thinking, "This guy is really doing a number on his family." Narrator: Gross was arrested; the police questioned him for 28 hours, he insisted he was innocent. Charles had been heartbroken over an unrequited love; he had shared his secret only with her.
Deborah Blum, Author The Poisoner's Handbook: You need the police to see scientists as partners. The multiple deaths -- they're a different class of death. Krajicek, Writer: Norris and Gettler were elated. And in this case they did. Just a consummately evil lady. He tells me if he has disease or injury. He had a chauffeur. His dedication to the law didn't
extend to Prohibition. If you look at what mattered to them the most you see Gettler, he's building the science. They had predicted that people would look for other sources of liquor, and that much of it would, to some degree, be poison. Narrator: Prohibition was becoming a contest between chemists working for the government, and others working
for the bootleggers. That's good. The Salvation Army opened buttermilk bars, thinking that that's what people would turn to for recreation. No, the ice water just wakes him up. Had he been condemned to die, it's unlikely that anyone would have questioned the verdict. These are the first fruits of Prohibition. Mayor Hylan had cut funding so sharply
that he was personally bankrolling the department; subsidizing salaries, and buying new equipment. For Gettler that meant solving three separate problems. So people were distilling sawdust. But Fanny's troubles weren't over. Vision blurs, and blindness closes in. Gettler was stunned. Deborah Blum, Author The Poisoner's Handbook: When Norris
died in 1935 there was this phenomenal outpouring from people right down to secretaries talking about how much he had taken care of them, you know, given them extra money when they were struggling; helped them when they had problems. Narrator: Her brother passed away later that night. By 1959, a powerful federal agency -- the Food and
Drug Administration -- was policing the flood of chemicals in the food supply, in drugs, and cosmetics. And you're telling us that it was simply an impurity in her medication? Alexander Gettler (Chris Bowers): No. Absolutely not. Gentleman Jimmy Walker was gone now. But that same chemical revolution had paved the way for the most destructive
conflict in history. But he needed proof: proof that the men had absorbed the lead at work, and proof that it had killed them. As Gettler closed out his long career, he could look back on some remarkable changes. Narrator: When Norris returned home, he joined an
alliance of civic groups, newspaper editors, and state officials that was trying to do away with the coroners. Within months Amelia's lower jaw had disintegrated so badly that her dentist remove it by lifting it out with his fingers. But the Depression had triggered a spike in violent deaths, driven by soaring rates of suicide. And they find a maid who
finally, she fesses up and says yes she knows that they were fumigating. Gettler dutifully tested all of them. You're working to bring something positive out of it. Norris didn't live to see that vision realized, but Gettler did. He had five kids. Tartaric acid, sodium hydroxide, hydrochloric acid. Gettler couldn't undo the outcome of the Jackson case.
Narrator: When the same pathologist confirmed the presence of thallium in the cocoa, the Brooklyn DA had everything he needed to go to trial. But while chemicals were being regulated in warfare, there were no limits at all in civilian life. Narrator: Within no time radium was being used to treat everything from acne to insanity. Alexander Gettler
(Chris Bowers): Ok. Here we go. Norris had had enough. Nowadays, of course, everything has turned 180 degrees and forensic science is the most believed testimony in modern day courtrooms. A small man compared to Norris, for example. Narrator: It was bartender Red Murphy who finally solved the problem that was Mike Malloy. Deborah Blum
Author The Poisoner's Handbook: At that point the public health authorities in New Jersey went to Charles Norris and said, "Can you help us?" Charles Norris and said, "Can you help us?" Charles Norris and said, "Can you help us?" Charles Norris (Don Sparks): Body is identified by toe tag bearing the name Walter Dymock, who died at Reconstruction Hospital of New York, October 28 1924 at 1:30 AM. Marcella Fierro, Forensic
Pathologist: We have a societal obligation to take care of our people and to recognize when something bad has happened to them. Patrick McCabe, 48 years old, found in front of 306 East 32nd St. Thomas Callan, 44 years old, 300 West 112th St. Assistant (actor): Dr. Norris. until the police
picked up rumors of the affair. Alexander Gettler (Chris Bowers): An infinitesimal amount. Narrator: But that was just the beginning. Seeing the little bald boy in the crib, he started to cry. Narrator: But that was just the beginning. Seeing the little bald boy in the crib, he started to cry. Narrator: But that was just the beginning. Seeing the little bald boy in the crib, he started to cry. Narrator: But that was just the beginning. Seeing the little bald boy in the crib, he started to cry. Narrator: But that was just the beginning.
police report said they went down like a shot. Carlisle, 42, of 215 West 90th St. Washington, John. Sort of a dark tone takes over the city. Charles Norris (Don Sparks): I'll call the DA. Deborah Blum, Author The Poisoner's Handbook: She had invited her brother to live with them. And I can understand that. Okay, guys, I've seen enough. These guys
were all about getting it right. Alice Merritt (Lucie Kosinova): Ok. Michael M. In the 1920s, Americans lived in a world that had been remade by chemistry. It reaches a point where no one can be sure of what they're drinking. And so finally, they wait until he's unconsciousness, lie him down in the street and then persuade a taxi driver to hit him with
the car. Meanwhile, the victim suffers acute nausea, then seizures, and descends into a coma. Narrator: The prosecution had used this result to charge Fanny with murder. Narrator: The world's enchantment with
radioactivity was ending. Gettler lit a gas flame inside the spectrograph, and tuned it so that it emitted no visible light. Here's this woman, this woman that he had helped essentially, he believed, save, this so-called innocent, young mother who now is revealed as a killer. So the idea was it has nothing but health-giving properties. But Amelia was only
the first. Assistant (actor): Dozens. Detective McCallister (Brian Caspe): The DA is not gonna to like this. Nor did it seem unusual when Ada Applegate passed away in the fall of 1935. Even if you didn't, the coroners' incompetence meant that science played virtually no part in law enforcement. So they didn't understand it and they didn't have any
respect for it. She would chart her daughter's menstrual period so he could make sure that, you know, she didn't get pregnant. Our national casualty list for the year from this one cause will outstrip the toll of the Great War. Whether you're in the most exclusive nightclub, or whether you're in the seediest dive, you really had no idea what was in the
glass. Within a few years the market for radium tonics, patent medicines, and health products had collapsed. Faith in scientific progress was being undermined by fear of its consequences. But he really saw them as people in his care. Physically wearing. Over the next few hours, Travia and Fredericksen polished off a bottle together, and then he
asked her to leave. Charles never thought twice when Fanny offered to prepare his meals. I'll just be a minute. And you see, post the Travia case, everyone wanting to move in that direction. Let's see what we've got. Their suspicions were corroborated by a local pathologist, who confirmed that all of the bodies contained thallium. She developed
anemia, and bled constantly from the mouth. Together, Norris and Gettler were beginning to reinvent criminal investigation. Like many immigrants, Alexander Gettler had left the teeming streets of the Lower East Side for Brooklyn. Children were fed radium-laced candies and sodas, women bought radium-based facial creams, and radium clinics
offered free injections of the new wonder drug. They promised a safer society and we had a more violent society. Michael Lerner, Historian: For a year or two after Prohibition went into effect, people were drinking the same old stuff -- commercial liquor the bootleggers were selling. Alice. Charles's doctor admitted that he had found the boy's death
mysterious. In 1923, New York was on the brink of becoming the biggest city in the world. He's, he's not wealthier. Alexander Gettler (Chris Bowers): Send that up to the tox lab please. Not family, not friends. Deborah Blum, Author The Poisoner's Handbook: Fiorello LaGuardia had a deep distrust of this wealthy medical examiner. Colin Evans, Writer:
And the only obstacle standing in the way of this brilliant scheme is Ada Applegate. Narrator: Coolidge's panel reported its findings in January of 1926. If you were a suspicious mayor, which LaGuardia was, you'd say to yourself, "Never mind his private income. Narrator: By 1935, Charles Norris had been on the job for 17 years, fighting one uphill
battle after another. Abraham Freireich (Howard Lotker): Yes. This guy did not want to get caught. Their bones would break as they walked across the room. Abraham Freireich (Howard Lotker): Yes. This guy did not want to get caught. Their bones would break as they walked across the room. Abraham Freireich (Howard Lotker): Yes. This guy did not want to get caught. Their bones would break as they walked across the room. Abraham Freireich (Howard Lotker): Yes. This guy did not want to get caught. Their bones would break as they walked across the room.
from the start. She would send her daughter up to his room at night. Carl Carlson, address unknown. Charles Norris (Don Sparks): Excellent. Examined the gastric contents. The attending physician, he recorded a catch-all verdict of coronary occlusion which could have meant anything really. Finally Gross was delivered to his cell, where he collapsed
onto his cot, still wearing his one good suit. Have a look if you want. He followed the Yankees, played in a regular poker game, and bowled competitively. Alexander Gettler (Chris Bowers): All right. In his haste to finally put Mike Malloy in the ground, undertaker Frank Pasqua neglected to embalm the body. Alice, start by clearing this up, and then
I'm going to need a dozen... Narrator: On May 20th, 1935, a Brooklyn magistrate dismissed the charges against Frederick Gross. Traces. Deborah Blum, Author The Poisoner's Handbook: Norris said, "This is such a dangerous compound that we need to take it out of gasoline now. Justice was done because of science. Narrator: Norris asked Gettler to
analyze samples of liquor that had been found near the victims. You just have a little extra exposure to this wonderful healthy element. In this case, Gettler's first challenge was deciding which poison to look for. Pharmaceutical companies were not required to test their products. More and more Americans were coming to see Prohibition as a failure,
and Norris helped cement that impression. Once again, the adversary was City Hall. Gettler set about winning them over. Narrator: Congress voted to overturn the 18th Amendment in February, pour ice water on him, figuring he'll die of pneumonia. Detective McCallister (Brian Caspe): The DA says she was alive. Amelia Maggiant to the detective McCallister (Brian Caspe): The DA says she was alive.
(Dominika Haskova): Yeah, but my brother and his friends still love it. Life for Frederick, he doesn't deserve this." Gradually the police realize it was Katherine who'd killed the children by poisoning their food. They promised prosperity and here we
were in a depression; they promised that this would clean up politics, that didn't happen; they promised it would clean up politics, that didn't happen. Narrator: Amelia and her friends liked to play with it: sprinkling it in their hair or painting their fingernails. Colin Evans, Writer: The first to die was Frederick, age nine. New York City banned leaded
gasoline, then New Jersey, and then Philadelphia. They died seven months later in the electric chair at Sing Sing. Charles Norris (Don Sparks): I think he's dead. Fanny Creighton (Katerina Vecker): You want some water? Six billion gallons of gasoline were sold in the United States every year. Narrator: When it came Gettler's turn to testify, everyone
understood that Fanny's life was in his hands. Defense Lawyer (Daniel Brown): Dr. Gettler, how much arsenic did you find? So nobody took any notice when the Applegates moved in with their neighbors. He's asking me to tell a story.' It is very powerful. And then Gettler, he did his tests. Fanny summoned a doctor, but it was too late. Narrator:
Reporters were skeptical, and the authorities were spooked. Amelia Maggia (Dominika Haskova): No, but it will get in my eye. The pathologist who first tested the cocoa had mistaken one for the other. And eventually rumors reached the police and they started to investigate. But Gettler wasn't satisfied. But you've seen in this, what, a little over a
decade, this phenomenal pendulum swing where people are starting to look at these scientific results and say, "That's it. But the Ethyl Corporation insisted that its product was harmless. For that, Gettler would have to examine their lungs. The case against Frederick Gross was starting to fall apart. Alexander Gettler (Chris Bowers): Based on my own
experience. "Numerous homicides have undoubtedly failed of detection," a study had concluded, "and skillful poisoning can be carried out almost with impunity." Charles Norris had been an unlikely candidate to reform this wretched system. Deborah Blum, Author The Poisoner's Handbook: Gettler would have felt great about this because, again
we're at a period where we're trying to persuade jurors that meticulous science matters in the courtroom. You have a lot of faith in your hunches, sir. We try and learn from it. Deborah Blum, Author The Poisoner's Handbook: Ada Applegate's husband was very unhappy in his marriage. A decomposing body produces only the faintest hint of cyanide
nothing like the levels in the Jacksons' lungs. The tragedy would continue to unfold for decades, as over a hundred Dial Painters were slowly poisoned by the radium in their bones. The had grown up poor, one of the multitude of immigrants
struggling to free themselves from the troubles of Manhattan's Lower East Side. Slate: Carbon Monoxide Narrator: By the fall, Norris was back at work in a city that had grown faster, more vibrant, and more dangerous than ever. And he was quite smitten by the developing European use of scientific evidence in the criminal justice system. Dr. Gettler
did this woman -- or anyone else -- murder Mrs. Now of the toxins that will drop you like a shot, cyanide has to be right up there. So while you think you're okay, your body is cooking up this very poisonous brew. He was always out there where the failures were public. Alexander Gettler (Chris Bowers): Harry. Slate: Radium Narrator: In the fall of
1927, New Jersey authorities asked Norris and Gettler to investigate the case of a woman who had been dead for five years. That's the answer." Colin Evans, Writer: Before he came along juries just did not believe forensic science. Judge (actor): Your witness. And so now you have this impossible problem. Narrator: In order to get a precise
measurement, Gettler would have to isolate the lead, and then calculate its weight. Narrator: For Norris, the battles were endless. Deborah Blum, Author The Poisoner's Handbook: After the Jackson case Gettler is, "I'm going back to the laboratory and I'm gonna nail this science so precisely that no one will ever do that again." He did hundreds of
tests on cyanide. This destroys the optic nerve. And sure enough she dies from arsenic poisoning. Narrator: Lead was one of the oldest known poisons. People who had money could get better quality alcohol. Prosecutor (Ryan James): So the victim consumed almost four times the lethal dose of arsenic? In June he left the country for a long delayed
vacation. Narrator: The Jackson mystery seemed destined to become just another cold case. You can distill any organic material. So after a week they said, "Okay. And I think we're out of ferric chloride -- you'll need to make some up. Alexander Gettler (Chris Bowers): Me too. That she had coincidentally died of encephalitis. If prohibition, if its intent
was to stop people from drinking, you know, the evidence is right there in front of you know, something has gone drastically wrong. But it's physically wearing as well, okay. Katherine Schaub (Iveta Elisabeth Lit): It's good for you, right? He turned to Alexander Gettler, the brilliant young chemist who ran his toxicology lab: the first of its kind in the
country. We'll make our way from there. Good morning Alice. Thank you, "Doctor" Gettler. Now is that a profound betrayal of trust? Michael Lerner, Historian: They adjusted the denaturing formulas and they tinkered, you know, they always were looking for better ways to poison alcohol. He had been made to look a fool, and worse still, he had
undermined Norris's campaign to legitimize forensic science. Ok, we've got to move quickly. Detective McCallister (Brian Caspe): Sorry? Deborah Blum, Author The Poisoner's Handbook: It's kind of a classic lock-door mystery. It had never before been used in a criminal investigation. But he still insisted that the whole affair was a fraud. Deborah
Blum, Author The Poisoner's Handbook: When he started in 1918, Gettler could not persuade a jury to trust the science really matters in understanding these cases and solving them." It was a really interesting kind of take-no-prisoners
moment in this in, in this push to have forensic science taken seriously. Deborah Blum, Author The Poisoner's Handbook: Their mission was to help the public, to take this knowledge and you could protect people. But the headlines coming out of New Jersey were putting all of that in jeopardy. Baden, Forensic Pathologist: I never heard him speak
about anything else in his life, other than toxicology. Already, it was the most cosmopolitan. Narrator: Francesco Travia was, by luck and by design, very much an outcast. The conspirators got their payoff, and set about enjoying the fruits of their labors... The type of arsenic in the victim's body was identical to the active ingredient in that product.
Deborah Blum, Author The Poisoner's Handbook: If you die of carbon monoxide poisoning the skin flushes this very notable cherry pink. And when you inhale that lead it gets carried into the blood stream, and deposited in the tissues, especially the brain tissues. He and Kriesberg rented a room, liquored Malloy up until he passed out, and then rigged
a rubber tube from a gas jet to his mouth. He wouldn't shuffle up to a crime scene, you know, just sidle in. Alexander Gettler (Chris Bowers): I do. That way alcohol used in cosmetics, medicines, or manufacturing could be kept out of the liquor supply. Negative. Colin Evans, Writer: Norris didn't do anything by half measures. But when they started
talking to neighbors, it emerged that the mother, Katherine, was so depressed with her current situation, she'd recently found out she was pregnant again, and she said, "things just, you know, just cannot go on this way. Marcella Fierro, Forensic Pathologist: Fanny Creighton. Alexander Gettler (Chris Bowers): They're still glowing five years later. We
do not ignore the fact of death. Prosecutor (Curtis Matthew): Why are you talking about bismuth? Deborah Blum, Author The Poisoner's Handbook: When radium because of its radio activity. Poison her own brother for a thousand dollar life
insurance policy? And the knife is lying there beside it. It was a well-known test that isolated arsenic in the form of a dark residue on the surface of a copper plate. Narrator: Alexander Gettler then testified that Anna Fredericksen's body couldn't have absorbed carbon monoxide after she died. The new prosperity had dampened some darker impulses
- homicides had dropped dramatically. Then they dug up the body, and found it shot through with arsenic. They start talking to people, and they talk to people, and they fund the funeral service was actually underway when the police came storming in
and demanded everything had to be stopped right now, "We need the body!" Narrator: Because there was no poison specialist in the area, the police sent Ada Applegate's remains to the mysteries of nature. Alexander Gettler (Chris Bowers): No. Defens
Lawyer (R. Deborah Blum, Author The Poisoner's Handbook: Standard Oil and General Motors held a big press conference in New York City with Thomas Midgley, the inventor of leaded gasoline. And then the biggest threat comes from the diversion of industrial alcohol. As a result, the federal government lifted all restrictions on the sale of leaded
gas. We'll just dose him up with major amounts of alcohol and he'll keel over. They brought her in for questioning. Judge (actor): You may proceed. Fanny Creighton (Katerina Vecker): : Can't a person look? He was just larger than life. You need to make that hostility go away if forensic science is gonna work. At the same time, you could also make
money by selling cause of death. For this, he compared the shade of his solution with reference samples. Narrator: Norris didn't bother to conceal his anger when he issued the report. LaGuardia shared Norris's dislike of plutocrats and Prohibition. Do you have any reason to believe that this was the murder weapon? Let's start with this one. A vast
infrastructure was taking form: assembly lines in Detroit, roads spreading across the landscape, filling stations dotting the countryside. I'm taking possession of the body. They were in cosmetics. Gentleman Jimmy Walker flaunted his fast living, sported a show girl mistress, and was unruffled by frequent accusations of corruption. They were in
medications. All of her beautiful hair had fallen out. The last step was to unmask the poison in the distillate. You can take him back to the office now. It recommended gloves, masks, and other precautions for workers, which effectively controlled the dangers of production. Gross put him into pajamas and tucked him into bed. He came from one of the
wealthiest families in Philadelphia. There was not a trace of cyanide in the stomach. And you could do this to come degree, but virtually every time you would leave trace elements of the poison in it. And carbon monoxide stains the blood such a brilliant red that weeks later you can take blood from a corpse, months sometimes even, and still find that
profound effect. Any arsenic will show up on our plate, but so will a couple of other heavy metals, including bismuth, which is what I think we might be looking at. The episode was a bitter defeat for Charles Norris. She and her husband John had moved in with his parents when they got married, but the older couple had since passed away. He covered
some sheets of x-ray paper, so that light could not expose them. Narrator: When Francesco Travia went to trial in the spring of 1927, he finally told his side of the story. Charles Norris (Don Sparks): Edward McLaughlin, 291 Division Ave., Brooklyn. Abraham Freireich (Howard Lotker): No. Alexander Gettler (Chris Bowers): Ok. How about 5105 and
5218. In the 20 years since Henry Ford introduced the Model T, cars had transformed American life. Well we'll try a little poison alcohol," which was killing people across the city. Krajicek, Writer: Fanny believed it ultimately was leading to Ruth and Everett Applegate marrying, thus giving her more time to do whatever she did in Baldwin, Long
Island. Norris's public humiliation went on for almost a month, before investigators finally acknowledged that not only had he not stolen anything, but that he had, in fact, "spent substantial amounts of his own money" to sustain the department. Scott Williams): Why don't you just tell us the truth: you had no way of knowing what to expect in Mr.
Jackson's lungs. I mean it's huge. The heart of the mystery was the alleged murder weapon: the cocoa Gross had fed to his children. Deborah Blum, Author The Poisoner's Handbook: Calvin Coolidge was President. Narrator: For the second time in two weeks, Fanny Creighton was found not guilty. Alexander Gettler (Chris Bowers): Well, it had been
buried for five days. Charles Norris (Don Sparks): And the blood tests? They picked the name Ethyl because they didn't wanna use lead. In the fall of 1927 he asked Norris and Gettler for help. This is the price of our national experiment -- in extermination. And what's really creepy about this is that so did Fanny. In the early 1930s almost half of the
city is out of work. And, of course, the radium company said radium was not the problem. There's a fear that the Depression was something so drastic that, that we would never recover from it. Baden, Forensic Pathologist: When I first met Dr. Gettler as a medical student coming over to see autopsies, he was very nice. That was his personal mission.
The day after Fanny's acquittal, he accused her of killing her mother-in-law. Prosecutor (Ryan James): Dr Gettler, Mrs. Abraham Freireich (Howard Lotker): Formaldehyde! Narrator: ...it would release a nose-stinging whiff of formaldehyde. That's the other half of the body over there. Charles Norris (Don Sparks): You can't hold that man for murder.
Narrator: The authorities were listening. Charles Norris (Don Sparks): A young adult white male... But Gettler had little time for his fictional counterparts, and even turned down a TV series based on his work. If Fanny was to be convicted of anything, the police would have to solve the killing of Ada Applegate. Now very few things drop people like a
shot -- heart, rarely brain, and some toxins. In 1918, over the bitter opposition of the mayor, they succeeded. The next year another dial painter died a similar death, and then another, and another. Narrator: Hylan was looking for any opportunity to undermine this well-heeled reformer. When you look at multiple deaths, they're not usually accidents
and they're not usually natural. Prohibition was born of good intentions, but those were being overwhelmed by unintended consequences. The timing of the reaction was critical: if the residue formed quickly, the tissue was loaded with arsenic. Charles Norris's
funeral: a bizarre murder that featured an uncomfortably familiar suspect. Narrator: Gettler started by overseeing the same procedure the county physician had used. And they are discovering that no one believes he did it. We won't be able to get accurate readings with the colorimeter -- the levels are too high. And even when they don't win every
case, even when they had things going wrong, he's still building that. He decided that she was the girl for him. But the more they dug into it they found that no, it was far, far more sinister than that. You with the M.E.'s office? The idea is that we can use smart science to understand what puts us at risk and what doesn't. You have this wonderful
system that the body uses to deliver calcium to the bones to make them stronger. Marcella Fierro, Forensic Pathologist: The medical examiner is a physician. The hotel manager had lied to the police, and the fumigator had been negligent. Scott Williams): But you are not licensed to practice medicine... Krajicek, Writer: It seemed as though she had
fallen off the face of the earth. In short order the conspirators bought three insurance policies on Mike Malloy's life. Colin Evans, Writer: So the police were left with five bodies, no motive, and no means of establishing exactly how the thallium had gotten into the victims. She had, without his knowing it, taken out an insurance policy on his life. He
processed a sample of brain tissue to isolate lead in a clear solution. By this time Gettler (Chris Bowers): Cyanide. Alexander Gettler (Chris Bowers): We agree then. Narrator: As New York's Chief Medical Examiner, Norris was
responsible for investigating every violent or suspicious death in the city. Deborah Blum, Author The Poisoner's Handbook: The police immediately said to Norris, "Are you crazy?" It doesn't take them half a minute to say, "What we have here is a dismemberment murder." David J. It had been so easy. Since the dawn of time, mankind had been
dependent on materials supplied by nature. Dr. Edel has testified that the victim's stomach contained four times the lethal dose of arsenic. Alexander Gettler (Chris Bowers): That's right. Defense Lawyer (R. Then he started having seizures, vomiting, his limbs stiffening and shaking. The police brought in substances, every substance they could find
apparently from the apartment. "There was an astonishingly large quantity of lead in the brain and body of this man," he told reporters. Let's be done with this. Gettler devised a procedure to remove any thallium from the cocoa and isolate it in a clear solution. Deborah Blum, Author The Poisoner's Handbook: What's so awful about methanol
poisoning, is that this doesn't happen instantly. But there's absolutely no poison in the apartment. Where's the arsenic? So his major preoccupation becomes what? Charles Avery (Ronald Prokes): . What the hell? Defense Lawyer (Daniel Brown): And how did you reach your result? Pressed for a statement, a spokesman for their employer explained,
"These men probably went insane because they worked too hard." The victims had all been working on a product that promised to revolutionize the auto industry: leaded gasoline. The Jacksons? The penalty was 10 years. It was deadly, and it was everywhere -- piped into countless homes for lighting, cooking, and refrigeration. Let me show you
something. Colin Evans, Writer: The police had heard from neighbors that a few years previously the in-laws had died under very, you know, unusual circumstances. She is the stuff that novels are made of. Soon, ethyl would be added to 90% of the gasoline sold in America. Alexander Gettler (Chris Bowers): Have a look. An honest man sits there and
he agonizes, "Who do I believe?" And when you can bring that honest juror science, and he can believe it, and it has a foundation in the reality of the universe, he's gonna look at that every time. Fanny was starting to resent the expenses of having children in the house. And that spring, he was drawn in to one of the most dispiriting battles of all.
Alexander Gettler (Chris Bowers): Certainly not. Narrator: Hoping to dispel his doubts, the D.A. sent the evidence over to Alexander Gettler the tissue samples, the cocoa, the tin, all of it. The active ingredient was arsenic. He often can tell me how he received it. Deborah Blum, Author The Poisoner's Handbook: The Mayor of New York was Red Mike
Hylan. Then he added chemicals to make any lead turn a bright red. Narrator: In 1922, 101 New Yorkers hanged themselves, 444 died in car accidents, 20 were crushed in elevators. I had the impression that he was a guy who was thinking of chemical formulas all the time. On April 25 1922, Fremont Jackson and his wife Annie took their place among
those grim statistics. Her story was so persuasive that the jury found her not guilty. People are dead on the floor with what they think is a poison exposure. He pursued his few pastimes with the same intensity he devoted to his work. Both men were charged with first-degree manslaughter. Forensic science had become not just a respected discipline,
but a subject of public fascination: the scientific sleuth was a regular feature of radio dramas and detective novels. On average, three New Yorkers were killing themselves every day. Colin Evans, Writer: They then contacted the hotel manager and asked him if there had been any fumigation of the hotel to get rid of pests. Narrator: Gettler stayed at
his post as the world changed around him. Now he hoped that it could illuminate the messy and confusing circumstances that all too often separated life from death. And when he returned and removed the paper, he saw where the bones had been placed. He could have lived a life of idle luxury, but chose instead to study medicine at Columbia
University. But Prohibition aside, the new mayor was a law and order man, and he set about cleaning up the city government with boundless energy. Deborah Blum, Author The Poisoner's Handbook: There was nothing. And, translated from the Latin, means: "Let conversation cease; let laughter flee, this is the place where death delights to help the
living." Baden, Forensic Pathologist: When the medical examiner's office moved from Bellevue into the new building around 1960 or so, the motto that was put up was a motto that Norris had. The police came up with a simple test, setting off smoke bombs in the hotel's basement rooms, where the fumigation had taken place. Since the stomach is
empty, the gastric contents is negative, then it has to be an inhalation. Nothing. Amelia and her two sisters spent their days in a New Jersey factory decorating watch faces with paint that emitted a beautiful blue-green light. But Charles Norris was sure he knew the answer. Abraham Freireich (Howard Lotker): It evaporates. The victim's stomach also
contained a quantity of soot, identical to the inactive filler in that product. I mean they were not acknowledging any responsibility. But he had yet to plumb the depths of human nature: Alexander Gettler hadn't seen the last of Fanny Creighton. Gross went straight from the court to the hospital where his only surviving son was recovering. Gamma rays
were beating on that x-ray paper, just as if we were in the doctor's office getting an x-ray. Narrator: After the bodies had been soaking in the gas for several days, Gettler looked for the telltale pink flush, and tested the blood for carbon monoxide. And he assured them that "No, there had been no such fumigation." And he was as much in the dark as to
how the couple had died as the examiners. Maid: Housekeeping! Mr. Jackson?
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