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UPGRADE

BLAKE

CROUCH

A NOVEL



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Dedication

Acknowledgments

By Blake Crouch

About the Author

PART ONE

You can stop splitting the atom; you can stop visiting the Moon; you can stop using aerosols; you may even decide not to kill entire populations by the use of a few bombs. But you cannot recall a new form of life.

—Erwin Chargaff



WE FOUND HENRIK SOREN at a wine bar in the international terminal, thirty minutes from boarding a hyperjet to Tokyo.

Before tonight, I had only seen him in INTERPOL photographs and CCTV footage. In the flesh, he was less impressive—five and a half feet in his artificially distressed Saint Laurent sneakers with a designer hoodie hiding most of his face. He was sitting at the end of the bar with a book and a bottle of Krug.

I commandeered the stool beside him and set my badge between us. It bore the insignia of a bald eagle whose wings enveloped the double helix of a DNA molecule. For a long moment, nothing happened. I wasn't even sure he'd seen it gleaming under the hanging globe lights, but then he turned his head and looked at me.

I flashed a smile.

He closed his book. If he was nervous, he didn't show it. Just stared at me through Scandinavian blue eyes.

"Hi, Henrik," I said. "I'm Agent Ramsay. I work for the GPA."

"What am I supposed to have done?"

He was born thirty-three years ago in Oslo but had been educated in London, where his mother was a diplomat. I could hear that city around the edges of his voice.

"Why don't we talk about that somewhere else?"

The bartender was watching us now, having clocked my badge. Probably worried about getting the bill paid.

“My flight’s about to board,” Soren said.

“You aren’t going to Tokyo. Not tonight.”

The muscles in his jaw tightened and something flickered in his eyes. He tucked his chin-length blond hair behind his ears and glanced around the wine bar. And then beyond it, at the travelers moving through the concourse.

“See the woman sitting at the high-top behind us?” I asked. “Long blond hair. Navy windbreaker. That’s my partner, Agent Nettmann. Airport police are waiting in the wings. Look, I can drag you out of here or you can walk out under your own steam. It’s your call, but you have to decide right now.”

I didn’t think he’d run. Soren had to know the impossible odds of eluding capture in an airport crawling with security and surveillance. But desperate people do desperate things.

He looked around once more, then back at me. With a sigh, he polished off his glass of champagne and lifted his satchel from the floor.

—

We drove back into the city, with Nadine Nettmann behind the wheel of the modified company Edison and I-70 virtually empty at this hour of the night.

Soren had been installed behind the passenger seat with his wrists zip-tied behind his back. I’d searched his carry-on—a Gucci messenger bag—but the only item of interest was a laptop, which we’d need a federal warrant to break into.

“You’re *Logan* Ramsay, right?” Soren asked, his first words spoken since we’d escorted him out of the airport.

“That’s right.”

“Son of Miriam Ramsay?”

“Yes.” I tried to keep my tone neutral. It wasn’t the first time a suspect had made that connection. He said nothing else. I could feel Nadine looking at me.

I stared out the window. We were on the outskirts of the city center, doing 120 mph. The dual electric motors were almost silent. Through the

wraparound NightShade glass, I saw one of the GPA's new billboards shoot past—part of the latest public awareness campaign.

In black letters against a white background:

**GENE EDITING IS A FEDERAL CRIME
#GPA**

Downtown Denver loomed in the distance.

The megatall Half-Mile Tower soared into the sky—an arrow of light.

It was one A.M. here, which meant it was three back in D.C.

I thought of my family, sleeping peacefully in our home in Arlington.

My wife, Beth.

Our teenage daughter, Ava.

If all went smoothly tonight, I'd be back in time for dinner tomorrow evening. We were planning a weekend trip to the Shenandoah Valley to see the fall colors from the Skyline Drive.

We passed another billboard:

**ONE MISTAKE CAUSED
THE GREAT STARVATION
#GPA #NEVERFORGET**

I'd seen that one before, and the pain hit—an ache in the back of my throat. The guilt of what we'd done never failed to hit its mark.

I didn't deny it or try to push it away.

Just let it be until it passed.

—

The Denver field office of the Gene Protection Agency was located in an unremarkable office park in Lakewood, and to call it a field office was generous.

It was one floor of a building with light admin support, a holding cell, an interview room, a mol-bio lab, and an armory. The GPA didn't have field

offices in most major cities, but since Denver was the main hyperloop hub of the West, it made sense to have a dedicated base of operations here.

We were a young but quickly growing agency, with five hundred employees compared to the FBI's forty thousand. There were only fifty special agents like me and Nadine, and we were all based in the D.C. area, ready to parachute in to wherever our Intelligence Division suspected the existence of a dark gene lab.

Nadine drove around the back of the low-rise building and pulled through the service entrance to the elevators. She parked behind an armored vehicle, where four bio-SWAT officers had their gear spread out on the concrete, making last-minute weapons checks for what would hopefully be a predawn raid based on the intel we were about to extract from Soren.

I helped our suspect out of the back of the car, and the three of us rode up to the third floor.

Once inside the interview room, I cut off the zip ties and sat Soren down at a metal table with a D-bolt welded into the surface for less compliant suspects.

Nadine went for coffee.

I took a seat across from him.

"Aren't you supposed to read me my rights or something?" he asked.

"Under the Gene Protection Act, we can hold you for seventy-two hours just because."

"Fascists."

I shrugged. He wasn't exactly wrong.

I placed Soren's book on the table, hoping for a reaction.

"Big Camus fan?" I asked.

"Yeah. I collect rare editions of his work."

It was an old hardback copy of *The Stranger*. I thumbed carefully through the pages.

"It's clean," Soren said.

I was looking for rigidity in the pages, signs they'd been wet at some point, infinitesimal circular stains. Vast amounts of DNA, or plasmids, could be hidden on the pages of a normal book—dropped in microliter increments and left to dry on the pages, only to be rehydrated and used

elsewhere. Even a short novel like *The Stranger* could hold a near-infinite amount of genetic information, with each page hiding the genome sequence for a different mammal, a terrifying disease, or a synthetic species, any of which could be activated in a well-equipped dark gene lab.

“We’re going to put every page under a black-light lamp,” I said.

“Great.”

“They’re bringing your luggage here too. You understand, we’re going to tear it apart.”

“Go nuts.”

“Because you already made the delivery?”

Soren said nothing.

“What was it?” I asked. “Modified embryos?”

He looked at me with thinly veiled disgust. “Do you have any idea how many flights I’ve missed because of nights like this? Some G-man showing up at my gate, hauling me in for questioning? It’s happened with the European Genomic Safety Authority. In France. Brazil. Now I’ve got you assholes wrecking my travel. In spite of all this harassment, I’ve never been charged with a single crime.”

“That’s not quite true,” I said. “From what I hear, the Chinese government would very much like a word with you.”

Soren grew very still.

The door behind me opened. I smelled the acrid, burned aroma of yesterday’s coffee. Nadine swept in, kicking the door shut behind her. She sat down next to me and placed two coffees on the table. Soren reached for one of them, but she smacked his hand.

“Coffee is for good boys.”

The black liquid smelled about as appetizing as Satan’s piss, but it was late and there was no sleep in my immediate future. I took a wincing sip.

“I’ll get right to it,” I said. “We know you drove into town yesterday in a rented Lexus Z Class SUV.”

Soren’s head tilted involuntarily, but he kept his mouth shut.

I answered the unvoiced question: “The GPA has full access to the DOJ’s facial-recognition AI. It scrapes all CCTV and other surveillance databases. A camera caught your face through the windshield on the off-

ramp at I-25 and Alameda Avenue at 9:17 A.M. yesterday. We took the loop out here from D.C. this afternoon. Where were you coming from?”

“I’m sure you already know I rented that car in Albuquerque.”

He was right. We did know.

“What were you doing in Albuquerque?” Nadine asked.

“Just visiting.”

Nadine rolled her eyes. “No one just visits Albuquerque.”

I took a pen and pad out of my pocket and placed it on the table. “Write down the names and addresses of everyone you saw. Every place you stayed.”

Soren just smiled.

“What are you doing in Denver, Henrik?” Nadine asked.

“Catching a flight to Tokyo. *Trying* to catch a flight to Tokyo.”

I said, “We’ve been hearing chatter about a gene lab in Denver. Sophisticated operation engineering ransom bioware. I don’t think it’s a coincidence that you happen to be in town.”

“I don’t know what you’re talking about.”

Nadine said, “We know, *everyone* knows, that you traffic in high-end genetic elements. Gene networks and sequences. Scythe.”

Scythe was the revolutionary, biological DNA modifier system—now extremely illegal—discovered and patented by my mother, Miriam Ramsay. It had been a seismic leap forward that left the previous generations of technologies—ZFNs, TALENs, CRISPR-Cas9—gasping in the dust. Scythe had ushered in a new era of gene editing and delivery, one that brought about catastrophic results. Which was why getting caught using or selling it for germline modification—the making of a new organism—came with a mandatory thirty-year prison sentence.

“I think I’d like to call my lawyer now,” Soren said. “I still have that right in America, don’t I?”

We were expecting this. Frankly, I was surprised it had taken this long.

“You can absolutely call your lawyer,” I said. “But first you should know what will happen if you go down this path.”

Nadine said, “We’re prepared to turn you over to China’s Gene Bureau.”

“America doesn’t have an extradition treaty with China,” Soren said.

Nadine leaned forward, her elbows on the table, the black coffee steaming into her face.

“For you,” she said, “we’re going to make an exception. The papers are being drawn up as we speak.”

“They don’t have anything on me.”

“I don’t think evidence and due process mean quite the same thing over there,” she said.

“You know I have dual Norwegian and American citizenship.”

“I don’t care,” I said. I looked at Nadine. “Do you care?”

She pretended to think about it. “No. I don’t think I do.”

Actually, I did care. We would never extradite an American citizen to China, but bluffing criminals is part of the gig.

Soren slouched back in his chair. “Can we have a hypothetical conversation?”

“We love hypothetical conversations,” I said.

“What if I were to write down an address on this notepad?”

“An address for what?”

“For a place where a hypothetical delivery might have been made earlier today.”

“What was delivered? Hypothetically.”

“Mining bacteria.”

Nadine and I exchanged a glance.

I asked, “You made the delivery to the lab itself? Not a random drop location?”

“I didn’t make any delivery,” Soren said. “This is all hypothetical.”

“Of course.”

“But if I had, and if I were to share that address with you, what would happen?”

“Depends on what we hypothetically find at this address.”

“If, hypothetically, you found this gene lab you’ve been hearing about, what would happen to me?”

Nadine said, “You’d be on the next flight to Tokyo.”

“And the China Gene Bureau?”

“As you pointed out,” I said, “we don’t have an extradition treaty with China.”

Soren pulled the pen and pad to his side of the table.

—

We followed the stealth SWAT vehicle in blackout mode through deserted streets. The address Soren had scribbled down was on the edge of Denver's gentrified Five Points neighborhood, where at this hour of the night the only things open were a few weed bars.

I rolled down the window.

The October air streaming into my face was more revitalizing than the coffee we'd downed back at the station.

It was late fall in the Rockies.

The air smelled of dead leaves and overripe fruit.

A harvest moon perched above the serrated skyline of the Front Range—yellow and huge.

There should've been snow on the highest peaks by now, but it was all dry, moonlit rock above the timberline.

And I was struck again with the awareness that I was alive in strange times. There was a palpable sense of things in decline.

Africa alone had four billion people, most of whom were food insecure and worse. Even here in America, we were still crippled by rolling food shortages, supply-chain disruptions, and labor scarcity. With the cost of meat having skyrocketed, most restaurants that had closed during the Great Starvation never reopened.

We lived in a veritable surveillance state, engaged with screens more than with our loved ones, and the algorithms knew us better than we knew ourselves.

Every passing year, more jobs were lost to automation and artificial intelligence.

Parts of New York City and most of Miami were underwater, and an island of plastic the size of Iceland was floating in the Indian Ocean.

But it wasn't just humans who'd been affected. There were no more northern white rhinos or South China tigers. The red wolves were gone, along with countless other species.

There were no more glaciers in Glacier National Park.

We had gotten so much right.

And too much wrong.

The future was here, and it was a fucking mess.

“You okay?” Nadine asked.

“Fine.”

“I can pull over if you—”

“Not yet.”

Nadine and I had worked together for almost three years. She’d been an environmental scientist with UNESCO before joining the GPA.

I took out my phone and opened my text chain with Beth. Typed out:

Hi Beth. Heading to the raid. Just wanted to say I love you. Hug Ava for me, and make it a good one. Call you in the morning.

As I pressed send, our radio crackled.

Officer Hart, the SWAT team leader, said, “*We’re three minutes out.*”

I felt something ratchet down in my gut. The initial push of adrenaline was beginning to prime my system for what was coming.

There were people who were built for this kind of thing. Those who thrived on the rush of storming a warehouse in hazmat body armor in the middle of the night, no idea of the mayhem they were heading into.

I wasn’t one of them. I’m a scientist. Or at least—I once dreamed of being one.

“Pull over,” I said.

Nadine whipped the Edison to the curb, its auto-system chiming and grumbling.

I threw the door up, leaned out, and spewed my guts onto the street.

Hart came over the radio again. “*Everything okay back there? We lost you.*”

“All good,” I heard Nadine say. “Be right there.”

I wiped my mouth, spit a few times, and pulled the door back down.

Nadine didn’t say anything. She didn’t have to. My vomiting up my nerves was the closest thing we had to a pre-raid ritual.

It meant we could go to work now.

Nadine toggled the accelerator.

The back of the SWAT vehicle raced toward us.

As much as I hated going on the raids, I always reminded myself that the fear was a necessary part of my penance.

Most of the outlaw scientists we targeted were criminals, plain and simple. With the black-market demand for synbio products growing exponentially with each passing year, there was plenty of cash to be made—on designer ultra-pets, spidersilk clothes, exotic GMO foods, even an entirely new life-form invented in a lab in Vancouver, B.C., that resembled a tiny, pink gorilla and that had become a kind of status symbol for the Russian oligarchs.

Black-market services and products had been enhanced as well.

Hacked cannabis and heroin.

Sex dolls wrapped in synthetic human muscle and skin.

A dark gene lab in Mexico City busted by the federales had been constructing “revenge wasps” for the cartels. These yellow jackets could target any person based on their genetic fingerprint. They also carried a primitive Scythe system capable of modifying entire gene networks, leading to brain damage, insanity, and excruciating death.

For others, genetic fuckery was just to show they could do it, like the four biology undergrads at Brown who had simply wanted to see if they could make a dire wolf.

But for a select few, the endeavor was deeply personal—like the socially isolated but brilliant sixteen-year-old who attempted to engineer an antibiotic-resistant, flesh-eating bacteria to infect a bully at school.

Or the rogue geneticist we’d caught attempting to clone an improved version of his dead wife using black-market, enucleated human zygotes.

The desperate parents with no health insurance who tried to somatically edit muscular dystrophy out of their son’s DNA. They actually cured him, but the off-target mutations they inadvertently created changed his medial frontal lobe network. He became psychotic, killing them before taking his own life.

Then there were the labs of my nightmares, where terrorist organizations engineered pathogens and weaponized life-forms of destruction, like the group in Paris that was on the brink of releasing a synthesized ultra-smallpox relative when the European Genomic Safety Authority dropped a thermobaric weapon on their warehouse.

Busting up those operations never troubled my conscience.

The ones that hurt were the raids on real scientists. Those who'd been doing groundbreaking work, for all humankind, when governments panicked and made it practically impossible to be a genetic engineer.

People like Anthony Romero.

I still thought of him sometimes. He'd built his lab on a ranch in the Bighorn National Forest outside of Sheridan, Wyoming.

Before the Gene Protection Act had effectively ended all private and university-based genetic research, Dr. Romero had been at the forefront of gene therapies for cancer treatment. He'd been rumored to be on the Nobel Prize shortlist for medicine or physiology. But his *New York Times* editorial decrying the Gene Protection Act for its extraordinary overreach had ended any chance of him being added to the list of government-approved geneticists.

We'd arrested Dr. Romero peacefully at 2:30 A.M. as a light snow fell on the stand of Ponderosa pines outside his cabin. I felt physically ill as I handcuffed him and put him into the back seat of our car. I wasn't just arresting a hero—a man whose life and career I aspired to and envied. I was condemning him to a life sentence, because I had no doubt that our DOJ would throw the book at him.

Then again, he'd broken the law. Right?

As we handed Dr. Romero over to U.S. Marshals at Sheridan County Airport, the scientist had looked at me and said something I would never forget.

"I know you're trying to do the right thing, but you can't put this knowledge back into the box."

Watching the marshals take him onto the jet as the snow fell and melted on the tarmac, I had never felt so low.

Like a traitor to the future.

—

The SWAT vehicle pulled into an alley, and Nadine tucked in behind them.

I took in our surroundings through the gray-green of the NightShade glass, expecting to see the buildings of an industrial district. Instead, down

the alley, I saw leaning fences and garages that backed up to Victorian houses, their steeply pitched roofs profiled against the starry sky.

“This area’s residential,” I said.

“Weird, right?”

We’d raided plenty of labs that were hidden away in basements or garages of people’s homes. The technology, in its simplest inception, was that easy. But for an operation on the scale and complexity of what I was expecting tonight—one that had done business with *the* Henrik Soren—I would’ve bet good money that we’d be raiding a warehouse. Not a Victorian in a historic district.

I switched our radio’s transmission from the comms rig in the center console to our earpieces. “Logan here. Sure we’re at the right address?”

“This is what your informant wrote down.”

More often than not, SWAT team personnel were dicks.

“Which house is it?”

“The one with the cupola. We’re launching the drone now. Stand by.”

Through the glass, I could see the four SWAT officers already out of the vehicle, one of them prepping the thermal-imaging drone. It would fly a perimeter around the target location, attempting to pinpoint heat signatures so we’d have some idea of how many life-forms were inside.

SWAT would go in first, taking the point position, with Nadine and me bringing up the rear. Once the lab was reasonably secure, they’d maintain a perimeter so we could go to work—taking an inventory of the equipment and ascertaining what exactly the rogue scientists were up to.

I fastened the magnetic straps on my inductive body armor and took my weapon out of the go-bag. It was a G47, chambered to .45 caliber. I had modded a grasp to hold a Streamlight onto the Glock’s composite after too many raids on warehouses with sketchy power.

Meanwhile, Nadine was locking the shell drum magazine into her weapon of choice—an Atchisson assault shotgun. I liked to tease her for bringing such a beast along when we usually had SWAT support, but her argument was tough to get around. She’d found herself in a bad spot in Spokane, Washington, before we started working together. She had unloaded an entire magazine of .40-cal rounds into a scientist who had done a little self-editing gene therapy around a host of genes in the SKI, PGC-

1 α , and IGF-1 pathways. As a result, the suspect's skeletal muscles had undergone a massive hypertrophy cycle, together with his mitochondria, making them huge and superdense. The man, whom she'd described as looking like the comic-book character, Kingpin, had nearly beaten her to death before finally bleeding out.

But as Nadine was fond of pointing out, there was no animal that walked the Earth that a twenty-round drum of twelve-gauge slugs on full-auto couldn't put instantly on the ground.

In my earpiece, I heard Officer Hart say, "*We're not detecting any heat signatures on the premises.*"

"Copy that."

No one home, which was just how we liked it. Now we would reconnoiter the empty lab, wait for the scientists to show up. It was much easier to take them down on the street than inside a room filled with explosive chemicals and biohazards.

I checked the time: 2:35 A.M.

We had a good three hours before first light.

I looked over at Nadine. "Shall we?"

It was cold enough outside to cloud my breath.

We grabbed our night-camo hazmat suits out of the trunk and helped zip each other into them. They had a self-contained breathing apparatus and a specially made visor that provided a wider field of vision for combat situations.

Finally, we opened the air tanks and fell in behind the SWAT's tactical column.

"Night vision or flashlights?" Hart asked.

"Flashlights," I said. There was too much ambient light here, and that harvest moon was on the rise. It would soon be shining through the Victorian's windows.

The rear fence was too tall to see over, but we got through the gate leading into the backyard without having to break anything.

The lawn hadn't seen water or other care in ages.

Weeds grew waist-high.

I looked up at the windows of the old Victorian. A few were missing the glass entirely, and every one of them was dark.

Up onto the sagging deck that creaked under our boots.

Officer Hart knelt at the back door; had the lock picked in ten seconds.

We followed them inside into total darkness.

The lights of their assault rifles swept over an under-construction kitchen.

We moved on into a dining room, the walls stripped to the studs, electrical wiring everywhere, tools scattered across the floor.

“Looks like a remodel,” I whispered over the open channel.

“Wait here,” Officer Hart said.

Nadine and I stood on raw subfloor in what would have been the living room.

Even through my suit, I could smell the sawdust and polyurethane in the air.

Moonlight streamed in through the windows that fronted the street.

My eyes were slowly adjusting.

I could hear the boot-falls of the SWAT team moving systematically above us, room to room.

“Anything?” I asked.

“*Negative,*” Hart said. “*More of the same up here. It’s all stripped to the studs.*”

Nadine looked at me. “You think Soren played us?”

“Why would he? He’s still in custody. Knows he won’t be let out until we give the high sign.”

I noticed a door under the stairs. It was secured with a Master Lock that opened with a four-digit combination. I gave it a tug. No dice.

“Move,” Nadine said.

When I looked back, she had a brick in her hand.

I stepped out of the way as she smashed it down on the lock.

The metal sheared off—the broken lock hit the floor.

“That was us,” I said to the team. “We just broke a lock off a door.”

“*We’re heading back your way,*” Hart said. “*It’s a ghost town up here.*”

I pushed the door open.

It made a grating creak on its rusty hinges.

I pointed my Glock into the pitch black, the light illuminating a set of old stairs that descended to a basement.