

THE BARN

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Bryan drove through the university's old grand gate to the west, made entirely of a dark red stone found in the surrounding mountains. His medium blue Mercedes shined to perfection. Past the grassy hill he past, noting the occasional co-ed sunbathing and a one dog very skilled in Frisbee catching. Atop the acres of pale grass stood the towers of education, one a library of some 5 million books, another the administrative building (formerly the school's first class building from 1823), another a small chapel so small it was only ceremonial, and the vast Burrigge Hall where a general of Senators, Governors, and two Presidents had learned their political theory.

They all worked in Biological Science III, an ultra-modern facility with all the latest computerized, greenish control systems. It was affectionately known as “the barn” for its overall shape, bright red brick facade, white trim, and a rounded roof, bearing greenhouses. It was modern architecture gone arrie The world-famous Chrstie Lab took up about a third of the fourth floor.

Since the 80’s, Dr. Christie had done work for the military in the DNA profiling of army recruits. He initially had a grant to study elite US Army officers and Rangers to see if there was something unique about their genetic makeup. The technology then was limited so the results initially inconclusive. Then he studied regular infantry men and the general population in contract to the Army’s elite. Those showed some differences but not enough to use as an affordable recruiting screening tool.

Bryan Boyd was Doc’s head technician and had a Ph.D. himself. He was also an assistant prof at the University but only guest-lectured in some graduate genetics classes. He was 100% research on paper.

John Parnell was next in line at Christie’s lab, having a Ph.D. but no teaching or leadership role. He was a born labrat, geek extraodinare, and all rounded renaissance man.

Christie’s first successful gene group for the Army was a mix of three genes controlling natural release of human growth hormone (HGH), testosterone, and another hormone never reported in the record. We do know he made it switch on in three levels, a low, medium, and high set of levels.

Second in the gene set was two genes responsible for

larger lung capacity, one responsible for large anatomy and a second for more efficient alveoli. Elite athletes often have larger, more active lungs. Soldiers being athletes must have the same. That same fall one of his grad student introduced the third gene set, this one causing larger glycogen storage and thus more readily available energy.

Christie had been a pioneer in gene switching and had invented one of the original means of turning gene expression on using simple dietary additions like specific amino acid variants. He used D-4-5-iso-proline to turn on some genes and this would be used to activate a series of genes in his military genetic packages. By 2014 he had ten different switching chemicals for 22 separate packages. There was a heart-lung package and also a general adaptability package. The intelligence package was of questionable value but it too had a different trigger.

Tested in lab animals the last three years, chimps got stronger and harder to handle, a couple got more mellow and trainable, or so the report said. One trial said chimps and pigs with the amino acid gene package lasted 27% longer on treadmills. The study to break bones and determine their increased strength or not was terminated when the new administration took over and the comfort of eleven creatures became more important than the next eleven years of war. A line of big lung, big heart apes was underway but Christie's genes were not in the mix there - it was "proof of concept" (which makes sense only to federal overlords) and not with his lab's carefully refined, precise stuff. Those big, efficient organ genes from some lab in Iowa. Iowa, really? John did a little web excavation and figured it was some US House member's pet project raising bucks for Iowa State for a fourth rate, very

ambitious animal geneticist whose Daddy was in the State House there.

Next came other breakthroughs like gene sets published in the literature, one associated with larger, more efficient heart chambers and another to improve metabolism in the ATP pathways. Both will make a man or woman more energetic and capable. A year later Christie decided to add the YHU-39 and YHU-81 genes discovered in China that may show a connection to intelligence or at least higher IQ scores.

About this time the Army decided that gene therapy was too complicated, expensive, and mysteriously ineffective at times. Genes such as those planned by Dr. Christie needed to be introduced into the unborn and young people. It is too hard to improve a grown soldier. It is far easier from some aspects to breed them.

DARPA soon took over Christie's project and his entire lab got many new security measures. One change was that Christie had to be partners with Dr. Meehan at Rice and Dr. Brooks at Harvard. The first was finding genes to protect soldiers (or anyone) from toxic viruses of all sorts. Brooks had a line of possible gene families to reduce mental stress, limiting the effects of PTSD. Christie would put together everything into one package for delivery at a later time.

DARPA said that genetically modified soldiers would "increase reliability and help standardize training by eliminating natural, randomness in the human genome". Randomness and variability are necessary for survival of a species but less good for survival of an army. They regularly received 928-G forms which told them not to tamper for certain regions of certain chromosomes because they were reserved for other things. We found out at one conference that a region we hoped to use

was now designated for serialization of the soldiers, in a sense a digital dog tag that could never be removed, lost, or altered.

As time moved on, Dr. Christie began to worry about how his work and that of colleagues would be used. Nazi Germany and the old Soviet Empire would have no moral qualms with breeding a race of super boys for future combat. He and America would. Europe too and most of the civilized world. The alternative was to “enhance” all children in a given region and draw heavily from that population for the military. One scenario that a DARPA boss gave him that might be acceptable to the American people was this. The government would offer up for adoption maybe a thousand babies with improved genetics to couples in need. These young men and women would be tracked by the military and heavily recruited at higher levels of pay and perhaps targeted for preferred military academy posts. This too sounded messy, even revolutionary, and not too comforting.

By 2016, Christie was secretly doubting the ability of the military to handle his transformational genetics in either a moral or sociologically responsible context. Sometime in February of that year he was contacted by a man identifying himself as Bert Teece, a private venture capitalist interested in genomics companies. As the university had encouraged it's researchers to reach out to such private companies, Christie thought he would hear the man's talk and later report it to the university people if it merited further studied. He did the first but never the later. Christie's nephew had private investigation connections and sent took images of Teece to his identification computers. Teece was indeed a funder of special projects but all these for Black Surge, a sort of black ops contractor, paid militia, and security contractor all in one. They did their own R&D,

inventing special guns, armored vehicles, and even chemical crowd control agents. They were much like a private CIA without less money and perhaps more talent.

Bryan had his ear to the ground and knew other DARPA labs around the country which his former student friends and profs now worked. One thing he heard was that some 928-G notifications sought to reserve space for self-destruct or death genes. A soldier captured or injured or otherwise found unuseful or danger could be disabled by activation of certain genes which might instantly produce toxins or cut off vital cardiology and brain functions. Of course, knowledge of such triggers was ultra Top Secret as one could disable an entire military unit with knowledge of the death triggers.

That same year, two new gene packages were created, neither told to DARPA. One was the GH6 gene thought to have a role in rational and logical thinking. It proved a way to smarten up everything from white rats to chimps. It now earned a role in the human package with it's own separate triggering amino acid. The second developed mostly by the new team of grad students, now numbering sixteen in all, was a package of six genes that increased production of proteins known to repair damaged body tissue. The later would make a person recover faster from bruises, muscle strains, and other abuses of the soft tissue. Soldiers endure all kinds of physical abuse and this package was sure to help remediate them.

Christie called in Bryan and John one day and asked both men to meet him at a hotel that next morning. He did so via a note that could not of course be heard or recorded. They were curious but complied. At the Hanford Arms, the Doc laid out a plan to give some genetics gems to DARPA and covertly give everything

to Black Surge. The later would contribute handsomely to accounts for all three men.

‘But Doc, why are you sure they will be more responsible?’ Bryan blurted out, noting to himself the meagre balance in his own retirement account at age 43.

‘They have pledged to raise all the children as normal...keeping only 5% for their security purposes’ the Doc beamed, sounding a bit too much like mad scientist even for his own ears.

‘Keeping?’ John remarked.

Overlapping John: ‘Keeping 5%...are we running a black ops baby mill now?’ Bryan shouted in a low voice.

‘No, no, boys. They are more given to secure peace. Black Surge is never aggressive unless aggressed upon’ Christie said with deliberate calmness. His blue eyes rolled pleasantly and without stress in a way Bryan and John knew meant conviction.

‘How can you buy this?’ Bryan protested. His voice trailed off into half-choked, guttural grunts, embarrassing in retrospect, and yet his natural, heart-led reaction. How? Why? went largely unsaid.

‘There’s 1.3 mil for each of us. Cash. Available in Swiss account by next week. No deep strings. No trace if we sign up as consultants on this form...’ Doc reassured again and pointed to a strange, cream-toned form with European style legal printing.

Silence filled the room. The deal was done.

More discoveries happened by that next spring. One gene set with OP-51 and OP-62 genes, both known to delay aging along with a gene to allow more Co-Q-10 production as a person aged. Aging soldiers can extend their physically-active careers it was hoped. The other set came from a German study identifying a gene called EPO-2 which increased red blood cells, oxygen transport, and more efficient cellular respiration. It was better than chemical doping with EPO.

Christie took on two new graduate students in hopes of going to even new wild places with genes from other species. Imagine a soldier who could eat like a billy-goat or deer and not get sick, handling wild foods not yet digestible by our species. He hoped to design the entire GI tract and metabolism system by genetics over the next ten years. DARPA had put him together now with a fourth partner, Dr. Coolidge at Baylor, a man known for his pioneering work in mitochondrial genetics.

Coolidge found a way to enhance human energy flow through his designer mitochondria. He had another gene set to make liver mitochondria more efficient in their reduction of toxins. He not Christie was likely to win a Nobel Prize in the coming decade.

A directive came down from Jeb Morton, Christie's DARPA IPA (In-Person Liason), one of few in that group allowed actually to meet scientists in the programs. He asked Christie and Bryan if they might somehow "metalize or similarly strengthen bones by genetic means". He noted that broken limbs occur in up to 21% of injured troops and was a major source of "force reduction". Christie wanted to ask how genetics could limit damage from ballistics and bombs but thought better of it. Introducing metal into human skeletons was fraught with many issues including toxicity, ability to regenerate metalized bone as easy as natural bone,

and increased visibility of troops to metal detection systems. It was a crazy idea and yet a good one for another time.

Morton was known to like the non-gay version of Spartan culture where soldiers were raised from a young age in barracks for their future roles, learning more from their fathers and older brother and far less from women.

For fun one John put a Photoshoped picture of a Bigfoot carrying an assault rifle, wearing camouflage and ominous black goggles. Morton saw it on one visit and told him to take it down.

Christie Lab was celebrating the birth of tech Lindy's second boy with a sheet cake in shades of yellow, blue, and white, the cake very fresh and thick from pudding infusion but the icing was not butter cream and disappointed a tad. There were no dishes left in the oasis cabinet or the dish washer so people fashioned thick, plate-like platters from thick layers of green, raw fiber paper towels which the machine dispensed slowly, creating a long line of people in Friday casual clothes bearing corn forks and expectant tastebuds. Lorna got the big blue, frosting B for Bertram and people thought she would have better off all around with a tall, thinner inner piece and not the fat, frosty excess that held that huge letter. God bless her for her husband of 33 years had just run off with his red-haired, frumpish grad student and maybe she was still grieving these 19 months later. Frost and sugar up our dear Lorna.

Doc Christie was diagnosed with Stage Four brain cancer that one Friday. The entire lab and much of the building that heard wept aloud and quietly. The remaining bits of indulgent, half white and half brown cake went uneaten or consumed more quickly as a result. Gerald punched his cake into nothing, wiped the

greasy anger from his digits, and it stayed far too long to suit him. He mumbled "none better" and contemplated the irony of a world Top 5 geneticist not overcoming the feable, programmed-to-self-destruct, and inevitable nature of our own chromosomes.

The last entry in his journal was simple and very much like him:

I LEFT EVERYTHING AT THE BARN. GODSPEED ALL.

‘I can’t figure he left nothing anywhere’ Bryan lamented, having known his mentor's office down to recently acquired Perk Up coffee lid (a recent fetish from a normally sucrose-adverse man) and a personally signed copy of Bertrand's reprint from last year's breakthrough on the subtle HHY-14 FAD metabolism gene. Old pros still mailed each other hand-signed reprints. (Bryan contemplated some lost eBay cash for his practice of emailing everything too and from his very bright friends). There was even a weak twist of crust from Mable's spinach-turkey bacon quiche in baggie, suggesting he had quite recently enjoyed it down to the last 20 calories and a loose, tiny transparent golden football that he thought must be a D-3 capsule untaken.

‘The feds got it for sure. Otherwise they’d have us under interrogation by now’

‘There’s nothing at the Barn and I checked before the feds came’

‘They checked the ceilings and ducts from what Mark told me’

‘Wait...wait a minute...maybe he didn’t mean THAT barn’

‘What other barn is there?’

‘His dad left him a farmstead off of Route 17 near Carthage. He took me there one day. He favored the local bass for a fried sandwich "better than heaven squared". We caught a little thing and fried it up between some sour dough bread from Wegmans, buttered the hell out of it. Sweet day that was.’ Bryan said with mixed feelings. ‘It’s overgrown but had a house of sorts and a large barn. He kept up the taxes in hopes of retiring there’.

‘Shall we go? A barn is a barn. And I guess he had two’ John said with keenness of a genetic detective who always wanted to be the gum-shoe kind.

‘Hit Carthage on the GPS. We could be too late already’ Bryan said with leaden foot.

The two men soon arrived at the much overgrown farm and managed to hack their way through the tall grasses surrounding the barn with a machete John purchased on the way up. The tall barn doors creaked loudly as they fought against the tangled stems and washed up dirt blocking it. A flurry of something appeared inside the mostly dark chamber, only a few stray beams of light illuminating patches here and there.

‘Rats!’ John shouted.

‘No...cats’ Bryan reassured. ‘I was here before. The barn is full of feral cats’

‘You sure?’

‘Turn on your light. I’m going in.’

Both eventually made it in and after 30 minutes both retired to the car with two boxes and two angry cats, each man bleeding some despite wearing long sleeves and coat that day.

Part of the Christie Lab's cover was a university project in gene sequencing of major diseases. They released a new breakthrough article on the Noroviruses in urban settings.

Three months later the two senior lab scientists announced to themselves the result of the cats from the Carthage barn. Both animals had a set of 22 human genes introduced onto four different chromosomes – all switched off. (Bryan secretly wondered what might have happened had the cats gotten rare amino acids the rich, local flora). A week later they had gone back and gotten two more cats, one barely more than a kitten and one quite old. The young thing had all 22 gene sets buried in it's DNA. The old cat at about 11 years old had just 17 gene sets, suggesting Christie had made feline backups sometime in past years.

Black Surge would not accept DNA samples from Bryan or John. They are arranged a mission to the old barn and fetched several specimens for their own lab use. "Trust but verify" was the motto hanging in Teece's office just under the Ronald Reagan painting. Their DNA lab, not shown to Bryan or John, and that somewhat miffed them, said it was a done deal. Both men contemplated whether a life outside the US was needed to make full use of their fine account. John screamed at Bryan we he said he bought "Going Offline" on Amazon. Dude, there are lawyers for this new life shit. They too men argued over pesto chicken subs at Fast Life over what would be a decent figure for

such professionals and what their growing families would need in the next two decades. They argued most over future earnings. Is a geneticist disgraced and offline forever or what he find a clandestined consultancy in some other land for a decent sum. 'Human genetics...' John half shouted while picking off an awkward sunflower seed from his roll, "...is worth billions. You and I with a...half decent lab will do very, very well'. Bryan grimaced, worrying about any shame for his children and with more knowledge than John of how USFED monitors labs and does forensics to find rouge, overseas researchers in days if not hours. Neither man could ever write their own proposals or peer-reviewed papers again, as each had cherished so much. Fed text analysis would spot Bryan's lavish, old school phrasing and John's more verby, clanky style in seconds.

DARPA never did come looking for Bryan, John, or their co-workers in the Christie Lab. It turns out the old, wise Doc had given them all 17 sets of real stuff and 5 more bogus ones. It would be years before the discovered their last 5 gene sets were worthless – if ever. Christie buried the truth in logs and reams of federal documents, clogging up the the already vast clog with the BS they had perfected and now deserved. Christie had cleverly given them the wrong amino acid triggers or at least in the wrong order. That too would slow them down. He included a bonus gene for more rapid transfer of sugar into citric acid, a freebie perhaps, but in the final analysis likely to burn out the men who labored in hot sun and became spent like a bottle rocket. He hoped to discredit his missing last 5 gene blocks and did everything to discredit himself without ruining his ultimate reputation as a human performance gene genius. He was not the first scientist to tone down his brilliance and mellow his mastery to suit the federal

masses of agency idiots and the latest faux expert on a Congressman's staff with a badly-earned, barely squeezed out degree in biology from Rice; now databased as under the white marble dome as something of a Human Genomics Policy SME (Subject Matter Expert).

Bryan took over the Christie Lab except now it was the Boyd Lab in the Thomas M. Christie Institute of Genetics. The DARPA security doors and surveillance were gone as was the grand money. Once a month Bryan had a meeting with Teece to go over new technology transfers of interest to them. Bryan and Lisa's joint retirement account grew some with each successful meeting. Teece announced one day that "implementation of our first-core Beta Test" has begun.

A young boy jumped from a gleaming new, black Mercedes G63 AMG Gelandewagon. The darkness and the chrome of the 125K rare SUV looked like a onyx box with sterling silver trim, ridding on chocolate donuts. The doors clunked shut solidly with that Teutonic precision; a tone all their own in the Benz family. Mrs. Roth greeted Bryan warmly from the bright blue and yellow door of Angel Keepers Daycare. The door handle was a large pink metal daisy and quite the opposite of the precise, classy chariot delivering the Dad and his son.

'Bobby, you have so much energy today' Mrs. Roth beamed to the grinning father. 'He's such a delightful, smart child. The other day he took out the trash cans for me. He is so strong compared to those his own age'.

'Yes he is' said Bryan. 'By the way. He has...um...a condition. His doctor says he needs one of these pills every lunch time. Keep him steady I think.'

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