

# Don't It Make Your Blue Eyes ...

by Walt Herrington

I was looking at the calendar, the last gift Mary had ever given me. I flicked through the months, reading the loving notes from Mary and looking at the pictures that Mark had drawn. With the prescience of hindsight, I could see signs of his illness. But at the time I only saw the scrawls any five year old would make, and I told myself again that there wouldn't have been anything we could have done for him even if we had known. I closed my eyes and told myself to only think about the good times. Just then Becky, my PA, interrupted.

*Call from Alex Bragin of NewGenics* she told me. I took a moment to compose myself and answered. "Hi, Alex."

"Ron! How ya doin!" he enthused, then went on without waiting for an answer. "Listen, I've got several cases that fall outside the insurance limits. Can I send them to you?"

"Go ahead," I replied. "Anything unusual?"

He hesitated and then said, "Not really. Not with these."

*Got the cases,* Becky said to me. *I will parse them and model them.*

"They look fairly mundane," I said, scrolling through them on my HUD. "You want to review the pricing before making a decision?"

He shook his head. "No, my PA will let me know if they're out of line." He hesitated again, which was unusual for Alex. "Listen, I've got another case I want to run past you, unofficially. Can I do that? Do you have the time?"

"Well, yes, but why not just submit it like the others?"

He shook his head. "No, I'd rather discuss it first. It's a rather complicated procedure, and we're not sure whether we want to accept it."

"Is it cosmetic or remedial?" I asked. "You know we are stricter on cosmetic mods ..."

"Oh, it's not cosmetic," he interrupted. "It's remedial, but it's also complicated. It's ... well, it's complicated."

"Is this another case that involves a board member or upper management?" I asked suspiciously.

"Not complicated in that regard," he grinned, and then became sober. "I mean it's a new process to treat a rather gruesome and complicated genetic disease, involving several locations on multiple chromosomes." I waited silently. He cleared his throat and continued, "Actually, the therapy involves 32 separate mods."

"Thirty-two!" I exclaimed. A cold feeling washed over me. It couldn't be! "Is this a Muley-Watson syndrome case?"

"How did you know?" he demanded. "I knew you actuaries were info geeks, but that's the limit. I can't believe you actually know about it. That syndrome is extremely rare, only affecting ..."

“About one in ten million,” I finished for him. “Are you serious about this?” Becky relayed the information on the syndrome to me, not that I needed it; I knew this one by heart. “There has never been a successful medical or genetic treatment, only palliative interventions. Alex, there is no way we would accept that risk. It would be ... on the life side, it would be like a table Z, only worse.”

“Look, before you reject it out-of-hand, let's talk about it. I know it would be expensive, but we realize that and are prepared for it.”

I shook my head. “This is way beyond anything we've ever done.” It also exceeded the limits set by senior management and senior management would have to approve any exception. Under the circumstances I was certainly not going to recommend it.

“You know I like doing business with you guys, but there's a lot of pressure to take the case. I talked management into letting you have first right of refusal, but we will shop the case, since you said no.”

“You'll never get anyone else to accept it,” I said. “You know it's not just the issue coverage, but site coverage, collateral ...”

“Actually, we've already got a provisional acceptance.”

I was stunned. “Who?” I demanded.

He shook his head. “Sorry, can't tell you.” He paused, evidently listening to his PA, then said, “Look, I've gotta go. Send me the price on the other cases.” He broke the connection.

I sat and thought. Who would accept a case like this? The fee for the mod would be astronomical, but any insurance would also be astronomical. When an *in vitro* genetic mod was covered, the insurance included health and life coverage on the resultant offspring, although the coverage limits gradually ratcheted down with time. Each separate step in the modification process was risky; thirty-two discrete steps meant the failure of the treatment was almost certain. And there was also some level of risk to the personnel involved and to the general environmental. But still! *Your blood pressure is spiking*, Becky said. I took several deep breaths, trying to relax, but my mind continued racing. A treatment for Muley-Wilson ... if only a successful treatment had been available when ... No, I told myself. Don't go there again.

I deliberately pushed all other thoughts aside and pondered what company could have accepted such a titanic risk. Coverage for genetic modifications was a niche market, and only a few companies offered it. I ran through them mentally. None of them would take this risk, I thought.

Becky broke in on my thoughts. *Grace wants to see you tomorrow when you go to the office*, she said. *Did she say why*, I asked. *No, she said she will drop by in the morning*. I was pretty sure I knew what she wanted.

But who would accept that case? After some minutes of thought, I said, *Becky, please call Larry Farmer of GeneRe at his office*.

“Ron, good to hear from you. I haven't talked to you since...in a couple of years.”

“Hi Larry. Question: I know you guys have recently liberalized your underwriting standards.”

“Yes, but that's not a question.”

“I’m coming to it. By the way, this is just hypothetical. But anyway, what would be your response to a request to cover a Muley-Wilson syndrome case?”

“Let’s see – that’s a big one. A *real* big one. I didn’t know anyone was attempting mods that ambitious. We would pass on it. I’m surprised you guys are considering primary coverage.”

“We aren’t. But I’ve been told that someone has accepted it, though I don’t know which company. Any ideas?”

Larry was silent, considering. “I would have said no one, but Phrygian Life has recently started a genetics insurance department and they’ve hired an aggressive lead actuary. They are looking to expand their market share.”

“Thanks for the info. I appreciate...”

“Before you go,” he broke in, “why don’t you come to the SOA meeting next month? It’s not too late to register, and Deb and I would like to see you again. We’re sponsoring the usual fun run and dinner.”

“Thanks, Larry, but I can’t – not yet. I’ll talk to you later,” I added, and I broke the connection. *Becky, pull the blue book and Best’s on Phrygian Life, please*, and a moment later I was reviewing the info. They had recently hired Sophia Bluet, ASA, ACIA, MAAA, to head their genetic insurance department. Her bio on the AAA site said she was a recent Actuarial science grad from Waterloo. I didn’t know her. I decided to let the matter drop until tomorrow, and moved on to other things.

I cycled to the office the next day. As soon as I put my pack down, Grace knocked on my door. “Come in,” I told her. She settled in a chair and looked me over critically.

“You’ve lost more weight,” she said.

“A little.”

“More than a little. You’re not eating, Ron.”

“Did you come here to talk about my health, Grace?”

“Among other things. Look, Ron, we’ve been friends ever since I’ve been here. I know what you went through with Mark and then Mary, but it’s been two years. You need to move on with your life. You aren’t doing either Mark or Mary, or their memories, any good by neglecting yourself.”

I replied with a tremor in my voice, “If my job performance has been deficient...”

“That’s not what I’m talking about. I only say this because we’re friends. You’ve withdrawn from the world, Ron. You do your job and keep up with your continuing ed, but it’s like you’re a robot. The Ron that Phil and I knew and socialized with has retreated some place far away, and he needs to come back.”

“Thank you for your advice, Grace. I shall certainly consider it,” I replied stiffly.

She shook her head. “Ron, I’m telling you this because I care about you. I can give you the name of a good psychiatrist if you’re interested. Or why don’t you take some time off, get your head together? Alex at NewGenics asked if someone could come do a site visit – why don’t you go?” She

sighed when I remained silent, and rose. “Barry wants to talk with you this morning. And remember, Ron, I’m your friend.” She left.

I sat down and bowed my head. I knew she was right, but I couldn’t seem to make myself change. I just couldn’t deal with it. I shook myself, and decided to think about it later. Instead, I pondered again what Alex had said yesterday. It had to be Phrygian Life and Health. I ran the numbers on Muley-Wilson through our model, using the standard scenarios, and the numbers were just not acceptable. I ran them again, including the current valuation set, with the same result. What assumptions would I have to tweak, I wondered, to get it to pass our requirements? I played with it, changing this, modifying that, but unless I made what (in my opinion) were totally unreasonable assumptions, the result was the same. It didn’t make sense. Some events were just not insurable, and this was one of them. It passed the majority of the scenarios, but the losses in a minority were extreme, and in a few the losses were catastrophic.

I was still looking at the results when Barry came by. “Hi Barry. Grace mentioned you might come see me.”

He leaned against my desk. “Good morning, Ron. Got a sec?”

The man was the head of marketing; of course I had time. “Sure. Something up?”

“I’ve had a call from Blaise at NewGenics. Basically, he thinks our prices for coverage are too high, and wanted to know if we were agreeable to reviewing our pricing structure. He didn’t actually say it, but I got the impression that they are being courted by a competitor that is undercutting our rates. And I’ve similar calls from a couple of our other labs.”

“There’s always *some* wiggle room in any rate, Barry - but in my judgment, not much in the rates we offer NewGenics. Besides, I’ve bench-marked our rates with consultant databases and they seem reasonable.”

“Not according to Blaise. I know this is a relatively new field. As you actuaries get more data, won’t the claims trend down? You guys are always talking about risk – as the market matures, shouldn’t the risk lessen and the prices drop? I’ve had my PA google the net and that’s what is going on, it seems to me.”

I decided that it would be unwise to tell Barry that he shouldn’t confuse his Google search with actuarial training and experience, and instead told him, “Look, let us do a little research on it, OK? I’ll get back with you in a few days.”

He clapped me on the shoulder and winked. “Good man.”

Of course, since I was the only actuary involved with genetic insurance, the “us” doing the research would be me. With Becky’s assistance I did a fairly thorough review. The inter-company experience collected by the SOA was my first stop. The data were still relatively sparse, and the trends were not down but slightly up. The lack of significance meant the data jumped around a lot, making me feel better about the risk premium we charged. A sweep of genetic modification industry publications revealed more confidence on the part of practitioners and some promising avenues of research, but nothing major in my opinion, certainly no break-throughs.

Genetic modification was illegal in a number of countries. Many worried it would be used for societally undesirable purposes, citing as proof that fact that most abortions in developing countries were of female fetuses. Many others worried about the long-term effect on the gene pool, or of unintended consequences, pointing to Fountain Genetics as the prime example. Because of Fountain, most children born today had green eyes, and eventually all humans would have green eyes. In the US, Canada, and the EU, genetic modification was strictly limited to treatment of certain specified genetic conditions. Most genetic labs were offshore or in Eastern Europe because of this.

In spite of the uncertainty, there was a growing market for genetic mods. The obvious targets were the simpler genetic abnormalities such as hemophilia. As genetic modification processes developed and improved more ambitious remediations were attempted. Each step in the process was associated with a non-trivial risk of failure which compounded as more steps were added. The most insidious danger, especially with the complicated procedures, was that genetic failure would not manifest until years after birth. The Mannheim process used to treat MS was the worst example. It was originally hailed as a complete cure and thousands of children were born after the Mannheim process was used. Unfortunately, organ failure began at puberty and no Mannheim process child had survived past the age of 25.

Cosmetic genetic modifications were still illegal in most countries (though many winked at the practice) and they were also paradoxically the most commonly done genetic mods. The labs in the Caribbean basin countries, which had no laws pertaining to the subject, did a thriving business in cosmetic mods. Want your child to be taller, more beautiful, lighter or darker skinned, more intelligent, stronger? Labs existed to cater to these desires, many of them no doubt run by charlatans who took the money and did little or nothing in return, banking on the inability of their patrons to show that their children weren't taller or stronger than they would have been without the supposed treatments.

Of course, we covered only reputable labs like NewGenics and set much stricter limits on the cosmetic mods we would accept. To learn that NewGenics were considering a Muley-Wilson case was surprising, since they tended to be on the conservative side themselves.

I called a few colleagues at other companies and discovered that they were also losing established clients to Phrygian. "I agree with you," one of my friends said. "I've been over everything and can't justify the discounts they are offering. I thought it was just loss leaders to secure a foot in the door, but a couple of labs have told me that Phrygian has a five year rate guarantee for new business in their contracts."

"Five years!" I whistled. "The first genetic insurance was only issued five years ago. Are there restrictive inside limits on coverage, or anything like that?"

"Not according to the labs. Basically boilerplate language. And they are willing to bind coverage on many more mods than we would. I don't see how we will be able to compete unless we cut our rates substantially. Senior management is considering what kind of loss we can afford to keep a presence in the market. As it is, with the loss of business I've decided to transfer back into individual life."

I gave Barry the gist of my findings that Friday. "So," I concluded, "I couldn't find anything that would justify any sizable decreases in our rates."

"Then how is Phrygian doing it?" he asked.

“I don’t know.”

“Have you talked with them?”

I shook my head. “I don’t know any of their actuaries, and I doubt they would tell me anything if I called.”

“You should,” he replied. “What’s the worst that could happen? You might learn something. Isn’t that the motto of you actuaries? ‘To try my best to replace impressions with appearances’? So you can’t justify any decrease?”

“For NewGenics, I would be willing to cut the rates by 5%, but that’s all. For larger decreases I couldn’t sign off on the pricing, and the Valuation Actuary told me we would have to set up oppressively large reserves.”

“So who signs off on the stuff for Phrygian?” he asked rhetorically. “Thanks for the review, Ron. I’ll call Newgenics about the rate cut.”

Who indeed, I thought as I left. There were as yet no standards of practice specifically about genetic insurance, though many of the ASOPs – such as data quality, modeling, communication, etc. – applied. State insurance laws didn’t address it either, though the NAIC was developing a model reg. Most companies used a modified table from a reinsurer or consulting firm as a valuation basis. Barry had actually asked a good question, though he had botched our motto. Who signed off for Phrygian on the rates and reserves?

I dug around for info on Phrygian’s reserves, but couldn’t find anything since they were so new to the market. I mulled over what I did know. Was Phrygian’s conduct ethical? More particularly, was the conduct of Phrygian’s actuary ethical? *Becky, pull up the Codes on Professional Conduct*, and a second later they flashed up.

I reviewed the codes again – something I did at least once a year. Any problems with precept 1? Was the work done with competence? On the face of it, I would argue no, but could I really make that call? Phrygian was undercutting us and the other insurers with which I had spoken, but was that proof of incompetence or market strategy? I remembered a comment from one of my study notes on an exam: the company that won a group insurance quote was likely the company that had made the biggest pricing error. But market disruption wasn’t proof of pricing error. What about precept 2? Was Ms. Bluet qualified to do genetic insurance pricing? As a recent grad, she likely had no real world experience in the topic, though she could have interned at a company that offered genetic insurance. And Waterloo had a couple of classes that included genetic insurance. Since the market was new no one (including me) had a lot of experience in it. And genetic insurance involved many so different disciplines – life, health, annuities, casualty – that actuaries qualified in one of those fields could argue they were then also qualified for genetic insurance. Precept 3? There were no ASOPs on genetic insurance, and practice notes were in the drafting stage. I had no proof that all other ASOPs were not scrupulously observed. I didn’t really see how precepts 4 through 12 would apply in my analysis. Precept 13? I couldn’t state that I had “knowledge of an apparent, unresolved, material violation of the Code by another Actuary.” Frustrating! I considered approaching the ABCD with a request for guidance, but decided I just didn’t have enough data.

*Alex Bragin calling*, Becky told me.

“Alex, how are you?”

He spoke in a rush. “Ron, I am so sorry for any comments I may have made about, about the Muley-Wison syndrome. I didn’t know that, that your son had, was suffering from it. I apologize, man.”

“No problem,” I said tonelessly.

“No, seriously, I mean it. I ...”

“Alex, shut up,” I told him, and broke the connection.

I stepped off my treadmill desk and collapsed in a chair, my head in my hands. Memories, so long kept at bay, came flooding back. Mark’s sudden illness and death, learning that the reason was genetic, Mary blaming herself, and then her suicide. I found myself praying for the first time since her death, *Lord, have mercy on them. Give them peace. Give me peace.* I wept.

Finally I raised my head and took a shaky breath. Grace was right, I realized. I had to put the past behind me. On impulse I had Becky call Alex back.

“Ron?” he answered cautiously.

“Alex, I’m sorry I got upset.”

“I understand, man, nothing to apologize for.”

“Look, our CEO told me you wanted someone to make a site visit and asked if I wanted to go. How about it?”

“Sure. My PA will send the info.” *Got it*, Becky said. *I’ll make plane reservations and forward the schedule to Mr. Bragin. He has already arranged for a hotel.* “I’m looking forward to seeing you again, Ron. There’s this restaurant I’ve been wanting an excuse to hit on the expense account, so we’ll check it out. I’ll pick you up on Wednesday– I just got your flight schedule.”

“Thanks, Alex. See you then.” I ended the call and left to tell Grace I had taken her advice.

Alex was waiting at baggage claim at St. Thomas, and we chatted as he took me to the hotel. “I’ve scheduled a visit to the lab tomorrow. It’s not actually on St. Thomas, so we’ll have to leave at 7 in the morning. I’ll come by.”

“Where is the lab?”

“It’s actually on a desert island – sounds dramatic, doesn’t it? But it’s a small key some miles off Salt Island in the British Virgin Islands. We’ve got a charter to take us there. The lab is the only installation on the island.”

“So this isn’t your regular lab?”

“No, this is a more cutting edge facility that performs procedures we aren’t equipped for. Go ahead and check in. I’ll wait, and then we’ll go to that restaurant I mentioned.”

Alex’s wife joined us for supper. She was a native of St. Thomas, and kept us laughing with her stories about island life. I realized how much I had withdraw from society, and was encouraged to find

myself joining in the conversation naturally (at least, as naturally as an actuary could). I had a good time and felt that maybe – *maybe* -I could put my demons behind me.

The trip to the island took over an hour, and I watched the crystal blue seas go by. “The lab here is run by Dr. Hasson,” Alex said as we approached the low island.

“Hasson? Charles Hasson?”

“Yes. Do you know him?”

“The name is familiar.” *Becky, please find out info on Dr. Charles Hasson. Sorry, she replied, we are in a dead spot. I’ll pull the info when I can connect.* “Does he do a lot of work for NewGenics?”

“He’s done a few things for us before, procedures our lab wasn’t equipped to handle,” Alex said. “He seems competent enough – our lab guys are satisfied, anyway.” In a few minutes we docked and disembarked. *I have the information on Charles Hasson ready for you now,* Becky said. I postponed the review as I followed Alex across a staging area to a long low building. “Ah, here’s Dr. Hasson now.”

Alex performed the introductions, and I was certain I had never met Dr. Hasson before. “We are glad to see you again, Alex, and to meet you, Ron,” he told us as he lead the way inside. “Our staff is minimal today, just me and a few assistants. Would either of you care for some coffee or water before we start our tour? No? Then let me show you the facilities.” We trailed behind him as he showed us around. Most of the lab was underground. “What biosafety levels do you have here, Doctor?” I asked him.

“We have all 4 levels, although almost all our work is level 1 or 2. The procedures we are doing today are level 3.” Everything looked shipshape in the lab. The only two assistants I saw through the large windows were gowned and working in level 2. We finished the tour and returned to the administrative area. “Excellent, excellent,” Alex said. “Looks very professional.”

“Thank you, Alex,” he replied. “Do you want to go into the lab for actual procedures? I’m afraid there really won’t be a lot to see.”

Alex looked at me inquiringly. “Well, I am here to inspect, but I suppose watching through the windows would suffice. I don’t know a lot about the nuts and bolts of the actual procedures – mostly theoretical stuff.” I answered. “What vectors are you using?”

Dr. Hasson frowned at me. “That is proprietary. We will use several different techniques since the procedure involves several changes. Now please follow me.” We left the office and took the elevator to level 3. “You can watch the entire procedure from here,” Dr. Hasson said, indicating several chairs in front of the windows into the lab. He was suddenly seized by a coughing fit. “Excuse me gentlemen, just some allergies. And now, I must get suited up. My assistant – you can see him already in the lab – will help me.”

We sat down, and I reviewed the information on Charles Hasson that Becky had obtained earlier. The photos were of a younger man, and something struck me as odd, but I couldn’t put my finger on what. I continued to read his bio, and stopped suddenly. “Alex, it says in the info my PA got on Dr. Hasson that he was kicked out of the US. Did you know that?”



“No, but that’s not really uncommon among genetic techs,” he answered. “Genetic modification laws in the US are so strict that many geneticists run afoul of them. Most never work in the US or Canada at all. That’s why we’re offshore, after all.”

I dropped the subject, and pondered what I knew while we waited for the procedure to start. Was it just some oversight that got Dr. Hasson deported, or something more substantial? *Becky, get the data on Dr. Hasson concerning his deportation from the US. Sorry, Ron, she said, but here in the lower level of the lab access to the web is spotty at best. I will inform you when I get the results.* Just then Dr. Hasson emerged from the staging area and approached the workbench and cabinets. He waved to us and must have switched on a microphone, because his voice came over the speakers in the waiting area. “We have the ova here, and we will initiate the process in a few moments after the initial checklist is reviewed. This a remediation for the Muley-Wilson Type a syndrome, so it involves numerous steps using several different agents.” He broke into another spasm of coughing.

Muley-Wilson! It had not occurred to me that the demonstration would involve the procedure Alex and I had discussed. Why hadn’t he told me? I rose and told Alex, “Sorry, but I can’t stay.” He caught my arm. “What’s wrong?” He suddenly realized what the problem was, and said, “Didn’t your office tell you the procedure we were going to watch? God, man, I thought you knew. I told your office.”

I took a deep breath and said, “Look, Alex, I’m not blaming anyone. I guess it just fell through the cracks. I just don’t want to watch, okay? I’ll just look around outside, look at the beach or something. I’ll be OK.” I ascended in the elevator and left the building, walking down to the pier. I was trying to deal with my personal problems, but I just didn’t want to watch an attempted Muley-Wilson remediation.

A thought occurred to me: the air in the lab was filtered to remove all particulates. There shouldn’t have been anything left for Dr. Hasson to be allergic to. Was there perhaps a leak in the air system? Not a happy thought! Maybe he just had a cold – but that was not comforting either. That was how the Fountain exposure had occurred – the virus vector was released into the lab air, had somehow mutated through recombination with a common cold virus a lab worker had, and the rest, as they say, was history.

*The information you requested is not readily available, Becky told me. From what I have been able to piece together it appears that Dr. Hasson was suspected of having breached the ISL protocol on several occasions. Suspected?* I queried. *Yes, no actual proof; he was not deported but left under a cloud of suspicion.*

While I waited I pulled up the photos of Dr. Hasson again. What was it about the photos that bothered me? Suddenly I blinked, and said *Becky, call Alex.* A moment later I asked Alex, “Did you notice what color Dr. Hasson’s eyes were?”

He frowned. “Color? Why, they were dark brown – almost black. Why?”

I sent an older picture of the doctor to him. “Look at this picture taken years ago. His eyes are blue in this shot.”

“Maybe it was photoshopped. Or maybe he was – is – wearing colored contact lenses. My wife has several different colors she wears on occasion. You can even get cosmetic injections to change your eye color – which seems a little extreme to me.”

“I didn't know that.” I also doubted a geneticist would do it. Since he had breached biosecurity in the past, I wondered whether some change agent – a virus perhaps – had affected him a la Fountain Genetics.

“Besides,” continued Alex, “what difference would it make anyway? Hey, there's something going on in the lab.”

“What's happening?”

“Ron, the guys in the lab – well, something is going on. One has almost fallen and another is helping him – or are they fighting or something? What the hell is going on?” He broke the connection. A moment later, I heard an alarm back at the lab. What is going on, I wondered. I ran back to the lab. The outer door was locked, and looking in I could see flashing lights. Becky told me, *There has been a breach of the biosafety protections. The building is locked down.* As I stood looking in, a man ran to the inner door and tried to get out. It didn't budge. He kicked at it with no effect, and then tried to break it with a chair. Again, the door held firm, and the man ran out of my field of vision. I shook the outer door, and Becky said *I advise you to evacuate the premises.*

“But those guys, and Alex! Call Alex again.” A few seconds later Becky said *His PA is offline.*

I dithered, then ran to the rear of the lab. I saw another door, but it proved to be locked as well. I went back to the entrance and peered inside. The guy I had seen before ran back to the inner door and beat on it. He must have been shouting – I could see his mouth moving – but I couldn't tell what he was saying. Suddenly he sat down, then slumped sideways. Becky said again *I advise you to evacuate the premises.* I looked around at the lab again. I couldn't get in and couldn't see through the reflective windows.

I ran back to the pier. No one was around. Our charter had left, with orders to pick us up that afternoon. I spun round and looked over the island. I didn't see any structure except the lab. Well, Alex had said it was a desert island. *Becky, can you inform the authorities? The proper authorities are automatically informed when the ISL breach occurred – that is standard protocol,* she replied. *I advise you to leave the island in case the lab building safeguards are compromised.*

I scanned the surrounding ocean, and saw a small key on the horizon. I looked over the pier area and spotted a dory. *Becky, what is that key to the south?* She said *That is Boulder key.* Alright, I decided, I would head there. *Contact the authorities and tell them that ...* I paused and looked over the small island I was on, but saw no one else. *Tell them that one person who was not in the lab when the breach occurred has taken shelter on Boulder key.* I shipped the oars, and began stroking for Boulder key.

I spent the next 60 days on Boulder key. The British authorities supplied me with a tent and provisions and even a small generator via drone drops, but they refused to let me leave the island until I completed a quarantine period. I grew a beard and developed a deep tan. Contact with the distant outside world was tenuous.

I mourned Alex and the others at the lab. Droboats had entered the lab and found that everyone inside was dead. I had been afraid that the authorities would nuke the lab (I had read *The Andromeda Strain* when I was younger) and I would be collateral damage. However, as I watched, drones sprayed

the entire island with what I assumed were disinfectants. They burned the lab building, including the bodies inside.

I cooperated with authorities, including drawing blood samples which were retrieved by drones. I described what I saw and heard at the lab, but never got any definitive answers as to what had happened. Did the lab workers fight? Did Alex see one worker try to help another having problems? How did the biosafety breach occur? What vectors or biohazards had been released? Gene manipulation could involve some extremely virulent chemicals and viruses were always a danger. I probably would never know what had happened. Drones and drobots took samples from the lab and the surrounding area but the authorities weren't talking. I didn't mention the eye color issue with Dr. Hasson; I decided that Alex had been correct that it was not germane. I was glad that the insurance company I worked for was not going to be the one stuck with the massive clean up costs and lawsuits. Welcome to the real world, Phrygian.

The quarantine period also let me finally put the past in the past. My narrow escape made me realize that life was short. Mary would not have wanted me to live my life in perpetual regret. When the 60 days were up and a launch retrieved me from Boulder key, I felt invigorated and ready to return to civilization. After a debriefing with the authorities, I checked into a hotel and let Becky book me passage back home. I luxuriated in the shower and decided to shave my beard – I looked like a pirate. I took the scissors and went to the mirror to start trimming the beard.

And the reflection looking back at me no longer had blue eyes, but dark brown eyes.