

Statement of Shelby Grody

1 My name is Shelby Grody. I am the Watson-Goodall Distinguished Professor of Biology and the
2 Chair Emeritus of the Utopia University Department of Entomology. Indeed, my leadership was so
3 peerless that no other Chair has even been appointed since I stepped down five years ago. I graduated
4 from Harvard in 1952, *magna cum laude*, Phi Beta Kappa, and Zeta Iota Pi. I then received a Master's
5 degree in Entomology from the School of Forestry at Yale in 1954, with highest honors. After taking
6 several years off to travel the Orient, I received my Ph.D. in Entomology from Darwin College,
7 Cambridge University, in England in 1964. I was immediately hired at Utopia as befits a person of my
8 education and experience, and I have remained a vital part of this university ever since.

9 I am occasionally asked if I am a forensic entomologist. I always respond, "Why should I limit
10 myself with such a label?" When I entered the field, such a designation did not even exist. My studies
11 were never so constrained, and my mind and vision were never so limited. But if people insist, I certainly
12 admit that I would put Dr. Mallard of *NCIS* to shame. For decades, I have been the go-to source for
13 society's most critical needs in this regard. J. Edgar Hoover of the FBI once begged me to intervene in an
14 intriguing homicide. Hoover hardly impressed me – too Machiavellian in demeanor, yet not Machiavelli's
15 intellectual equal – but I agreed to assist since the puzzle itself intrigued me. As a result, my fame grew,
16 and I have testified ten or fifteen times in court over the years. I have always refused payment beyond
17 reimbursement for my expenses. The truth is the important thing, and the challenge!

18 It is therefore no surprise that I was contacted when this whole Grayson Zayne affair came to
19 light. If anything, I should have been contacted sooner. Bringing in an adjunct professor – an outsider to
20 the Utopia community, no less! 'Tis an insult. Granted, I have been on leave quite a bit lately. Still, with
21 an expert such as me right at hand, it boggles the mind that they would call in anyone else. Scandalous,
22 really. I suppose they won't make that mistake again, after the mess that this incident has created.

23 It's not that Gooding is wrong per se, at least in the basics that any entomologist would know.
24 Certainly, the Formosan Subterranean Termite – named for Formosa, which is what we called Chinese
25 Taipei in my youth – is a powerful example of xylophagy. A xylophage is an herbivorous insect or animal
26 whose diet consists principally of wood.

27 But to call the Formosan termite a "super termite" is a ludicrous example of the hyperbole used
28 by this supposed expert. There is nothing supernatural or even especially remarkable about this termite. It
29 simply lives in larger colonies and eats more than some others. Its destructive capacity, while impressive,
30 is hardly the stuff of legend. On the other hand, I must admit that the Formosan Subterranean Termite is a
31 remarkably hardy organism. One reason I believe that their colonies grow so large is that they seem not to
32 suffer the same levels of wear and tear as other insects. They are tiny but tough! Their only apparent
33 weakness is an inability to tolerate the cold.

34 Organisms that display such a weakness, from the standpoint of evolution, face two fates. The
35 first is simply to die when exposed to intolerable conditions. Most insects exist in such huge numbers
36 that even losing millions of individuals per year poses no threat to the species. But odds are that a
37 number of individuals – albeit a small number – will possess a random mutation that makes them cold-
38 resistant. Those with the mutation will live, while those without it will die. What seems like a curse – the
39 mass death – actually becomes a blessing, strengthening the species. Only the cold-resistant insects
40 survive to create a queen. In a random system of competition, one without the mass die-off, that gene
41 could take many decades to spread. But in a system under stress, it takes single-digit insect generations
42 for the improved gene to become commonplace. In a rapidly reproducing species like the Formosan
43 Subterranean Termite, the time involved is the blink of an eye, scientifically-speaking.

44 The second adaptation to cold or other environmental hazard is akin to hibernation, although it is
45 actually very different, biologically. Many insect species can become dormant for weeks, months, or even
46 years before emerging. For example, certain North American *magicada* cicadas famously emerge from
47 burrows only every thirteen or seventeen years. As a result, insects that feast exclusively upon cicadas die
48 out. Take the cicada killer wasp, *sphecius speciosus*. That wasp only lives three years on average, and it is
49 adept at killing cicadas. But they must survive during the cicada dormancy by killing other things. If a
50 mutation increased their ability to kill cicadas, the mutation would spread rapidly during the year when
51 cicadas emerge. But such a mutation would provide no advantage during the years of dormancy, and it
52 would likely be lost during that time because the affected individuals would gain no advantage (and might
53 even be harmed, depending upon how it affected their ability to kill other insects). As a result, few
54 predators are adapted specifically to kill cicadas, which is an advantage for the cicadas, one might say.

55 Turning our attention to the Formosan Subterranean Termite, we know that insects adapt to their
56 environment, and the critical pressure on the Formosan Subterranean Termites was sudden cold snaps. It
57 is only logical to conclude that environmental pressures would lead them to develop an evolutionary
58 response to cold. While the observed insect samples seem no more resistant to cold than is typical of the
59 species, a life cycle adaptation, such as the ability to go dormant, is completely plausible. Imagine that
60 some Formosan Subterranean Termites are faced, in the late 1860s, with a cold period of weather. They
61 burrow, as they are adapting. Then suppose the trees are cut down and covered with lacquer as they are
62 constructed into that glorious *Paifang* gate that graces the Utopia University campus.

63 Chinese craftsmen have relied on the *Toxicodendron vernicifluum*, commonly known as the
64 Lacquer Tree, since the Shang dynasty more than 3,000 years ago. Sap is tapped from the tree trunk and
65 converted into a clear, hard, waterproof shell that is beautiful, weather-resistant, and nearly impenetrable.
66 If Formosan Subterranean Termites were sealed into the wood of the *Paifang*, they would not perceive
67 changes in the environment to trigger an end to their dormancy. Perhaps they need a certain humidity

level, in addition to optimum temperatures, to trigger an awakening. Sealed in their beautiful lacquered chamber, like Sleeping Beauty before her prince's kiss, the termites could slumber for years and even decades undisturbed. Until, of course, one hundred and forty-odd years of wear and tear, combined with the wet winter of 2013-14, crack open the lacquer at last. The Formosan Subterranean Termites hatch in the warmth of summer. And they immediately do what they do best – eat!

I must admit that we have no direct evidence that such a long dormancy occurred. The longest documented “diapause,” as it is more accurately termed, is nineteen years in the case of the Yucca moth. But we know that other invertebrates, such as the Tardigrade (commonly called a “water bear”), have survived for decades in the desert with no water, and even survived exposure to vacuum and cosmic rays on the FOTON-M3 spacecraft in 2007. So it is certainly possible that the Formosan Subterranean Termites could have survived for an unusually long time in their beautiful lacquered chamber.

I'll wager a year of the finest Earl Grey tea that no linear-trained, agrarian entomologist would even think of this elegant and perfectly plausible solution. Too busy racing to get a conviction, no doubt. It's a tragedy that they fumigated the *Paifang* immediately after the unfortunate incident to prevent the termites from spreading. Genetic sequencing conducted on the termites afterward shows mutations, but with no more live specimens, we will never know the mutations' effects. Still, only a Kafka-esque system devoid of justice would convict Grayson under these circumstances. It is a real scientific possibility that a cruel twist of fate and accident of evolution were the true reason for the collapse of the *Paifang*.

In the rush to judgment, everyone seems to be forgetting that the *Paifang* was old and not in great shape. I remember in the late 1960s when they did a shoddy rehab of the structure because it was about to collapse on its own. I also remember when they put on a fresh coat of paint in the late 80s or early 90s because it was becoming an eyesore. I'll leave the analysis of structural soundness to others, but from my years of observations, no one was safe climbing on the ornate gate regardless of termite presence.

I've been asked, of course, whether Grayson might have implanted the termites in the *Paifang*. I seriously doubt it. Grayson was one of the finest young intellects at our august university, and s/he had wonderful manners. We used to speak for hours about my work abroad. Grayson undeniably had a bright future, and I cannot fathom him/her throwing it away in this fashion. In all of our interactions over the last four years, Grayson never betrayed an ounce of malice or ill will. S/he was always very gentle with the insect specimens, and s/he was very popular both with his/her classmates and with members of the faculty and administration. I even appended my name on a paper or two that Grayson had written, to add some clout and distinction to the work. Second author, of course, as befits my status. I suspect Morgan was peeved to be bumped to the third spot, but seniority and distinction have their privileges.

Frankly, I cannot imagine anyone taking a disliking to Grayson – anyone, that is, except for Morgan. Morgan was always an average talent, the kind of individual who will remain a mediocrity

102 within the university. We tried to find Morgan a junior faculty position in Kansas or Utah or one of the
103 Dakotas. But s/he preferred to stay here. It bemused me a bit, to be honest. Why would anyone choose to
104 remain in a non-tenure-track position in a field as vast as Botany? Morgan was simply not up to the task
105 of earning tenure – still isn't, in fact – and the Dean and faculty have little faith in him/her. It's not
106 Morgan's fault, really. Some are born to succeed, others are not.

107 Indeed, I'm not surprised to learn that Morgan was abusing even the modest position s/he had by
108 participating in the unearned grades scandal. To give credit for sub-standard work is the greatest of sins.
109 Such cheating tarnishes the reputation of everyone at Utopia University. I am sure that Morgan enticed
110 Grayson into taking part in the façade. After all, Morgan had all the power in that relationship.

111 Why am I not surprised? Well, years ago when Morgan was first hired, we published a paper
112 together. I allowed Morgan to be listed as the first author. As is my custom, I was listed second, because
113 the work was done in the lab I built, using my own work as a foundation, although Morgan was writing
114 primarily about botany with entomology as a minor aspect. But almost as soon as the paper was
115 published, it came under fire. The paper listed a number of significant breakthroughs, but as was soon
116 revealed, it also contained large portions that were suspiciously similar to other authors' works. I don't
117 stand for plagiarism, but I could hardly renounce a paper with my name on it. We fought back, tooth and
118 nail, and after a few phone calls to former students and colleagues, the accusations were dropped. I even
119 received a formal letter of apology from one colleague. Still, I never again trusted Morgan in that fashion.
120 Morgan may well have cheated his/her way into Zeta Iota Pi, too.

121 I know that much has been made of these missing lab records. The lab is technically under my
122 supervision, but it's really Morgan's lab. The absence of a record noting the death of a termite colony is
123 scientifically inexcusable, but it is also understandable. Many have been the times that I have left the lab
124 before completing all of my records, engrossed as I was in pondering the results of my experiments or the
125 next course of action, or mentally composing the opening paragraph of a journal article. I always returned
126 to complete the paperwork eventually, but days could pass before that time. Grayson's explanation for the
127 missing notation is thus quite plausible.

128 Or perhaps Grayson simply acquired poor habits from Morgan. I doubt that Morgan would ever
129 have wandered away, lost in thought while composing a journal article. Yet our auditor found Morgan's
130 documentation to be incomplete on more than one occasion. A lab must be run with precision, and it
131 appears that Morgan was lax in that regard. It is possible some termites might have escaped, if Morgan
132 paid insufficient attention to the details of protocol. I'm not certain why they would have climbed the
133 *Paiifang*, but we do know that the type of wood (food source) affects the success of a colony. They could
134 have had a taste for wood from their ancestral home, could they not?

135 In truth, the whole thing reeks of shoddy detective work and an effort to jump to conclusions
136 without considering all possibilities. Gooding simply cannot conclude within a reasonable degree of
137 entomological scientific certainty that those termites were deliberately planted on the *Paifang*. Nor does
138 the pheromone theory hold up. First, there's no evidence that such pheromones were ever synthesized. If
139 anyone had accomplished such a feat, they would have published it or patented it – honor or money, that's
140 the driving force for most scientists! Lastly, pheromones don't break the rules of nature. The termite eats
141 as fast as it eats, and the time allotted to the termites if Grayson had planted them on the *Paifang* would
142 have been insufficient to cause that amount of damage.

143 I have read the statements of Morgan McCabe, Carter Gooding, and Grayson Zayne, and they
144 contain nothing (beyond specious speculation) to suggest that events unfolded as the State claims.
145 Entomology is a factual science; insects are not supernatural, and they cannot accomplish miraculous
146 feats merely because some prosecutor wishes it to be so. There is simply no way, under the science of
147 termites as we know it today, for someone to plant a colony of Formosan Subterranean Termites and, a
148 week later, to have the kind of damage found on the *Paifang*. Any honest entomologist would admit that.
149 Perhaps Morgan planted them earlier, to discredit Grayson. Perhaps Morgan's lax supervision allowed
150 them to escape, and they headed for a favorite natural food source. Perhaps dormant termites simply
151 emerged from their accidental century of slumber. Who knows?

152 The prosecution's case is based upon conjecture. I, for one, will stick with science, with facts, and
153 with Grayson Zayne.

154 Of the available exhibits, I am familiar with the following and only the following: Exhibits 8 and
155 9 (Gooding's CV and my CV); and Exhibit 10 (Grayson's lab notes). The photo of the undamaged
156 *Paifang* in Exhibit 7 also gives an accurate picture of the *Paifang* before that terrible accident.

157 I swear or affirm to the truthfulness of everything stated in this affidavit. Before giving this
158 statement, I was told it should contain everything I knew that may be relevant to my testimony, and I
159 followed those instructions. I also understand that I must update this affidavit if anything new occurs to
160 me until the moment before opening statements begin in this case.

Shelby Grody
SIGNATURE

December 15, 2014
DATE

Subscribed and sworn before me this 15th day of December, 2014

Victoria Moore
Victoria Moore
Notary Public in and for the State of Utopia

