The RELICT HOMINOID INQUIRY 1:87-92 (2012)

Video Review

Bigfoot and Other Wild Men of the Forest. By Eugenie Scott. San Fransisco: FORA.tv, episode 113, January 13, 2009. 84 min 55 sec.

http://fora.tv/2009/01/13/Eugenie_Scott_Bigfoot_and_Other_Wild_Men_of_the_Forest

Something "must be seriously wrong"

FORA.tv presents the Web's largest collection of conference and event videos drawn from top conferences, universities, and public forums. Among their listings is a recording of a talk delivered in the *Ask a Scientist* lecture series. The series is an informative, entertaining, monthly event, held at a San Francisco cafe. It was first launched in 2003, by Juliana Gallin, a graphic designer and native of San Francisco. In 2009, Dr. Eugenie Scott delivered a presentation in the series titled, *Bigfoot and Other Wild Men of the Forest*. Scott is the Director of the National Center for Science Education (NCSE; 1986-present). She is a physical anthropologist by training and served as a past president of the American Association of Physical Anthropologists (AAPA; 2001-2003), among her numerous accolades. For this presentation she was acting in the capacity of President of the Bay Area Skeptics. They describe themselves as a local interest group, independent of all other organizations, striving to encourage critical thinking and accuracy in the media and in schools, particularly regarding such topics as claims of the paranormal, pseudoscience, and untested or poorly tested medical and psychotherapeutic practices.[1] That a professional anthropologist would make a serious address on such a controversy-laden topic as Bigfoot is in itself noteworthy, and for that Scott is to be commended. However, as will be seen, the inaccuracies, selectivity and superficiality of the content fall short of what might be expected of such a scholarly presentation.

The title and emphasis of this review draw from the repeated statement by Scott that, "If these creatures [Bigfoot] exist, an awful lot of what we know from other basic sciences must be seriously wrong. Given the probabilities, I know what side I come down on." She implies that this is the crux of the matter at hand. This statement rests on two assumptions that I suggest cannot be ultimately justified. The first is that what we (i.e. scientists) "know" is uniformly and unquestionably reliable. Scientific knowledge is inherently tentative and likely to be revised, elaborated, or altogether overturned in the light of new revelations. A growing litany of editorials and articles decry the pervasive unreliability of many published scientific studies[2]. At the

[1] http://www.baskeptics.org/about.

[2] Ioannidis JPA (2005) Why most published research findings are false. *PLoS Med* 2(8): e124. doi:10.1371/journal.pmed.0020124.

culmination of a lengthy debate about the pros and cons of peer-review conducted by *Nature*, one of the premier multi-disciplinary journals, an editorial opined that "Scientists understand that peer review per se provides only a minimal assurance of quality, and that the public conception of peer review as a stamp of authentication is far from the truth."[3]

The second assumption implicit to this statement is that the potential existence of sasquatch has no reasonable context within modern scientific knowledge, whether paleontological, bio-geographical, or ecological. This betrays both a bias of *pre*conception of the nature of sasquatch and a handicap of *mis*conception of the possible context for such a species. Specifically posited – Is the proposition of a large relict hominoid in North America so out of context as to justifying its rejection *a priori*? I maintain that it is not so. Offering a very different perspective, a fellow paleontologist once pointed out that one must wonder why there *wouldn't* be a great ape in North America.

Scott's thinking here reminds me of a conversation I had with her in 1998, at the AAPA meeting held in Salt Lake City. She had chaired a symposium on the teaching of evolution and creationism in public schools. In her introductory remarks she cautioned the attendees that they should be sensitive to their students' beliefs and preconceptions. They shouldn't simply walk into a classroom and flatly state that God didn't create the Earth and life on it. Rather, one might explain that it certainly doesn't *appear* that a deity was responsible. In other words, she is suggesting – If God exists, then an awful lot of what we know in science about Earth's natural history is seriously wrong. (And given the probabilities, she knows what side she comes down on).

Afterward I confronted her and challenged the premise of that statement. Let me state that I teach a course on evolution in my department; I recognize evolution as the explanation of the mechanism of the origin and diversification of life through time; I follow and support the activities of the NCSE; but I also embrace the distinct role of faith and religion in addressing Aristotle's final cause (i.e. metaphysics). I pointed out that her statement rested upon the assumption of a particular concept of God and creation, i.e. fiat creation; that she presumed to know how a divinely authored creation would, or would not, appear. How might one expect the divine signature on the creative canvas to look to us today? What if in reality God operates through natural law, as held by many believing persons, including a significant fraction of scientists? What if the "creation" unfolded through the operation of natural processes that were bound to produce a suitable stage upon which life's drama might proceed? She acknowledged this alternate view as a possibility. At a more recent symposium in which she made a similar presentation, held at the American Association for the Advancement of Science (Pacific Division) meetings, I recognized a much more tempered and conciliatory attitude in this regard.

However the underlying mindset of the former outlook is resurrected in the remarkable epistemological parallelism of the statement, "If these creatures [Bigfoot] exist, an awful lot of what we know from other basic sciences must be seriously wrong."

This review waxes perhaps a bit philosophical, but this is unavoidable when the organizers of the *Ask A Scientist* lecture series invited the sitting president of a skeptics group to deliver an evaluation of the evidence bearing on the question of sasquatch. Lacking familiarity with the primary evidence, she largely turns to philosophizing about the nature of various *kinds* of evidence, rather than the merits of the specific evidence. Her

[3] Jennings, CG (2006) Quality and value: The true purpose of peer review. *Nature* doi:10.1038/nature 05032.

lack of acumen with the primary data is betrayed by the numerous errors of fact and misleading statements. For example: Roy Wallace should be *Ray* Wallace; Dale Wallace is Ray's nephew, not his son; the Bossburg tracks come from Washington, not California, and are 17.5 inches long, not 13; she incorrectly asserts there were no reports of Bigfoot before the 1950's; she incorrectly asserts that few animal footprints have well-formed toe impressions; she exhibits uncritical reliance on internet sources; she inaccurately states that Meldrum "believes" Bigfoot exists; she overstates the blurriness of the Patterson-Gimlin film; she accepts that Roy [Ray] Wallace told Patterson and Gimlin where to go to film; she states that hair identified as bison came from Ontario, when in fact it came from the Yukon. There are other errors not directly relating to the sasquatch question, such as stating that a basking shark is really a whale; that a plesiosaur is a dinosaur; that the Middle Pleistocene was 4-5 million years ago.

These may seem on the surface to be trivial faults, but they betray a pattern of superficiality and lack of familiarity with the substance and specifics of the pertinent evidence. If you are going to allege that you can't put a square peg [i.e. Bigfoot] in a round hole [i.e. a scientific context], then you must have a realistic sense of the true shape of the peg and the dimensions of the hole. This is precisely her stated objective, as she goes on to inform her audience that the way to use science and to think critically is to ask this question first and foremost – How does the new information fit with what we already know in science? I question this premise and her apparent reliance on this standard of evaluation. Rather than assess the evidence on its own intrinsic merits, we are adjoined to assess its agreement with what we *think* we already know.

At the risk of sounding cliché, I am reminded of Galileo's apt experience. The Vatican already "knew" that the Sun revolved around the Earth, that the universe was geocentric. Galileo's telescopic observations didn't fit the existing paradigm, were flatly rejected, and yet were true.

Against this standard, Scott professes to critically consider three aspects fundamental to any species' adaptation and survival: size/scale, niche/habitat, and population size.

While emphasizing an excessive height of 12 feet (far above average reported estimates), she criticizes the "awfully human-like" appearance of descriptions of Bigfoot. Such an enormous animal would exhibit adaptations to its large size incontrast to human proportions. Height estimates more consistent with the majority of sightings would be in the range of 7 – 9 feet. Bigfoots upright posture is the most human-like characteristic other than those shared generally with primates. Otherwise, descriptions typically call attention to the remarkable non-human features: hair cover, immense bulk, muscularity, longer upper limbs, shorter lower limbs, short neck, etc. The description does convey indications of adaptation of scale to its larger body mass. Furthermore, the footprints indicate a greater breadth to length ratio than that in humans, providing greater surface area to scale with larger body mass.[4]

Regarding habitat, she opines that Bigfoot are encountered "all over the place." Unlikely sources of credible encounter locations such as Nebraska and west Texas are repeatedly given special mention and attention. In fact, very few reports emanate from those seemingly unlikely areas, and those instances may have more in common with Elvis sightings, as she suggests, than with encounters with an unrecognized hairy upright primate.

[4] Meldrum DJ (2007) Ichnotaxonomy of giant hominoid trackways in North America. In: Lucas SG, Spielman JA, and Lockley, MG (eds) *Cenozoic Vertebrate Tracks and Traces.* New Mexico Museum of Natural History and Science Bulletin 42:225-231.

An abbreviated clip from this portion of the presentation was also posted by FORA.tv under the title *Could Bigfoot Live in Texas?*[5] Representatives of the Texas Bigfoot Research Conservancy (TBRC), Dr. Alton Higgins, a biologist, and Daryl Coyer provided an incisive response to Scott's remarks concerning the state of affairs in Texas.[6] They point out rightly that east Texas, where the bulk of such reports emanate, is dominated by dense forest, numerous lakes, rivers, and sloughs. Indeed, the vast majority of credible encounters by skilled observers, or which are corroborated by trace or physical evidence, has a reasonable ecological context, and they are located in moist dense temperate forest habitats with ample potential resources to support a large omnivorous primate.[7] Even the more unlikely cases in west were reported from riparian habitat along major river courses.

Turning to skepticisms concerning population size, she retreats to ambiguous and largely unsubstantiated allusions to minimum sustainable numbers. The concept of a species' minimum viable population (MVP) is a relatively elusive one, estimated through simulations and based on assumptions about variables such as inbreeding pressure and habitat degradation. Realistic determinations for specific populations require extensive genetic testing and decades of field observations. An average MVP for terrestrial vertebrates has been given as 500 to 1000 individuals.[8] This minimum estimate would be a reasonable number for a rare widely dispersed giant primate in North America.

Scott next sifts from this rather theoretical discussion of what sasquatch might be expected to be, to a brief assessment of examples of evidence, i.e. "prints, sightings, recordings and samples."

First, considering prints, Scott muses that there is an "awful lot of stuff" as she shows a figure, taken from skeptic Benjamin Radford's paper, juxtaposing a Honey Island swamp monster track beside a Patterson-Gimlin film site track.[9] This is intended to illustrate the disparity and inconsistency of the print evidence, when the fact of the matter is, the Honey Island Swamp monster tracks are known to be alligator tracks, plain and simple. She turns to the Cripple foot tracks and repeats Dr. David Daegling's notion that the unusual proportions of an anatomically accurate example of foot abnormality could be concocted by a hoaxer by simply enlarging a figure from a medical text of an infant's deformity.[10] She points to the claims of the Wallace family that crude wooden feet could be responsible for many of the tracks, although no imprints have been conclusively attributed to examples of the Wallace's carved feet. None of these arguments does justice to the data. She does acknowledge that even if some of the tracks are fake, not all need to be fake.

Turning to sightings, Scott denounces eyewitnesses as generally unreliable, noting that people are actually very poor observers, and often see what they want to see or expect

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[5] http://fora.tv/2009/01/13/Eugenie_Scott_Bigfoot_and_Other_Wild_Men_of_the_Forest#Could_Bigfoot_Live_in_Texas.

[6] http://texasbigfoot.com/index.php/news/news/146-ask-the-tbrc.

[7] Meldrum DJ and Mionczynski J. (2007) Footprint evidence for an unrecognized hominoid in the forest habitats of the Pacific and Inter-Mountain West. *Idaho Chapter of the Wildlife Society* pp. 33-34.

[8] Lehmkuhl J (1984). "Determining size and dispersion of minimum viable populations for land management planning and species conservation". *Environmental Management* 8 (2): 167–176. doi:10.1007/BF01866938. Thomas CD (1990) What do real population dynamics tell us about minimum viable population sizes? *Conservation Biology* 4(3): 324–327. doi:10.1111/j.1523-1739.1990.tb00295.x.

[9] Radford B (2002) Bigfoot at 50: Evaluating a half-century of Bigfoot evidence. *Skeptical Inquirer* 26(2): 29-34.

[10] Daegling D (2002) Cripplefoot hobbled. *Skeptical Inquirer* 26(2):35-38.

to see. Given the fundamental role of observation in science, this seems a rather double-edged indictment. Indeed, careful observation is more involved than a mere visual registration. Sherlock Holmes said famously, "You see, Watson, but you do not observe."[11] Documentation is a critical element of scientific observation and I must agree that uncorroborated eyewitness accounts have minimal impact. To illustrate her point she played a BBC PSA video clip, in the spirit of the murder-mystery board game Clue. As the camera point-of-view at the crime scene shifted, props were surreptitiously swapped, e.g. a stuffed bear mount was replaced with a suit of armor. There were 21 alterations in all, but very few are noticed by even the attentive on-looker. The moral – "It's easy to miss something you are not looking for." Ironically, this very admonition might just as rightly be directed at the scientific community, which on the whole is not "looking for" evidence of sasquatch.

Particular emphasis was placed on one sighting – the Patterson-Gimlin film. Disappointingly, Scott again muses that it "looks like a person in a gorilla suit." This is a common superficial retort by skeptics, which pales when one actually compares the film subject to a person in a gorilla suit. In a documentary production that I participated in, Dr. Jessica Rose and Dr. James Gamble, of Stanford University, who literally "wrote the book" on human walking and gait analysis,[12] came to the latter conclusion after careful examination of the film alongside a costumed actor in a relatively sophisticated Bigfoot suit. Never mind that photogrammetric studies indicate that the film subject was well in excess of seven feet tall. Here again, Scott's emphasis on her impression of the blurriness of the film image indicates that she is not familiar with the primary data, but is relying on poor quality copies.

In her dismay over the lack of success employing camera traps, she fails to recognize the likely rarity of the creatures, there potential intellect in contrast to other common forms of wildlife, and the growing evidence documenting camera trap avoidance by some wildlife species.[13] The lack of such photographs is indeed a lack of evidence, but it is not necessarily an indictment of the *possibility* of the existence of Bigfoot.

As for "samples," a single published negative result for alleged Bigfoot hair was cited.[14] A sample of hair thought to have been associated with a witness encounter in Yukon, Canada, was submitted for DNA analysis. It was identified as bison. From this the conclusion was implied by Scott that hair samples allegedly from Bigfoot generally "turn out to be similar to something known." In spite of this selectively negative example, samples of hair that defy identification as known species of wildlife continue to accumulate.[15] Their distinctive morphology makes is very unlikely that they will *eventually* be attributed to known wildlife through DNA analysis.

In summary, this episode of *Ask a Scientist* acknowledges the continuing public interest in the question of Bigfoot or sasquatch. To her credit, Dr. Scott undertakes to provide a reasonable and critical evaluation of the

[11] *A Scandel in Bohemia*.

[12] Rose J and Gamble JG (eds). *Human Walking*. 2nd edition. Baltimore: Williams and Wilkins, 1994.

[13] Sequin, E.S., Jaeger, M.M., Brussard, P.F., & Barrett, R.H. (2003). Wariness of coyotes to camera traps relative to social status and territory boundaries. *USDA National Wildlife Research Center, Staff Publications.* University of Nebraska, Lincoln. Can. J. Zool. 81: 2015-2025.

[14] Coltman D and Davis C (*2*005*)* Molecular cryptozoology meets the Sasquatch. *Trends in Ecology and Evolution* 21:60–61.

[15] 2011 Gragg K, Meldrum J, Fahrenbach, H (2011) Analysis of hair attributed to an unidentified species of primate. *Proceedings of the Pacific Division, American Association for the Advancement of Science*, Vol. 30, p. 151.

claims and issues rather than the knee-jerk outright rejection of the subject so generally characteristic of many scientists and skeptics. Unfortunately, she selectively, and frankly rather misleadingly, emphasizes the negative results and/or lack of conclusive data, while trivializing or blatantly omitting the substantive and/or reasonably suggestive evidence that, while admittedly inconclusive, is never-the-less very indicative that there may be an existing but uncatalogued mammal at large. She feigns to adopt the posture of suspending judgment, and pronounces that scientists should be willing and ready to make the admission – "I don't know yet." However when pressed on the matter, she publically declares that she concludes that there is less than a 5% probability of such a creature existing (and that much is allowed only because she is, in her own estimation, "an optimist"). In spite of a clearly superficial and often erroneous grasp of the details of the primary data, she by default *pre*supposes the evidence is wholly unconvincing.

I have always maintained that the evidence is *inconclusive*, but that ultimate technicality is different from judging the evidence entirely without merit. Scott's assessment provides no justification for her position that if Bigfoot exists, then an awful lot of what we already know is seriously wrong. In reality, it is this skewed assessment of the evidence and its misleadingly argued context that is seriously wrong.

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