



National Capital Area SKEPTICAL EYE

Winter 1991-92

Vol. 6, No. 1

Saving Our Bacon?

By Elena M. Watson

Is mankind's hope for a peaceful future buried in a vault in Williamsburg, Virginia?

A few New Age Christians seem to think so—primarily one Marsha Middleton, a 39-year-old New Age Christian pastor. Middleton is so convinced that such a vault exists that in early September she, her husband Frank Flint, and a friend drove from Santa Fe, New Mexico, to Colonial Williamsburg, where they dug a large hole in Bruton Parish churchyard. They were looking for manuscripts, allegedly written by Sir Francis Bacon, which they believe were buried there in the early seventeenth century. The contents of the manuscripts were expected to prove that Bacon was the true author of the Shakespeare plays, to “herald the second coming of Christ,” and to give directions for a new world order in which all live in peace, according to Middleton’s interview with the *Virginian-Pilot* newspaper. The hole she and her companions dug reportedly measured 6 feet long, 2 feet wide, and 5 feet deep.

It was later revealed that Middleton is a follower of Marie Bauer Hall, an 87-year-old Christian mystic now living in Los Angeles, who first declared the existence of the vault in 1938. Hall is the head of an organization called the Veritat Foundation. She claims to have discovered the vault’s existence by decoding a 1635 book by George Wither, Shakespeare’s plays, and the writing on the Bruton Parish tombstones. A tombstone at St. Luke’s Church in Smithfield is said to indicate a secret vault buried there too, as well as one at nearby Bacon’s Castle in Surry. In fact the Bruton Parish vault is expected to give the locations of secret vaults buried worldwide.

The 1,500 members of Bruton Parish are not too thrilled about having New Agers digging up their cemetery, especially the way Middleton and her companions did it, between 11 p.m. and 5 a.m. on the night of September 8–9. The hole was found by a tour guide. And since Bruton Parish is an active Episcopal church, cremated remains are still buried in the churchyard. In spite of this, the church said it would give consideration to authorizing a search for the vault by professional archaeologists; it later decided against the idea.

The people of Smithfield are equally unenthusiastic about
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Debunking the Satanic Panic

By Mike Epstein

Late arrivals for the October 26 NCAS meeting at the Bethesda Regional Library were shocked to find themselves listening NOT to Robert Hicks of the Virginia Department of Justice and author of *In Pursuit of Satan*, NOT to Dr. Randy Lockwood, psychologist and vice president of field services for the Humane Society of the United States, BUT to Officer Schmockworst of the Fireplug Police Department.

A recent attendee at a Satanism cult seminar and thus an expert on this terrifying and pervasive threat to the moral structure of American society, Schmockworst jolted the audience with the severity of the law enforcement problem presented by Satan and his followers. He indicated that there are some excellent books that describe the growing threat, such as *Painted Black* by Carl Raschke and *Satan’s Underground* by Lauren Stratford. Others, such as Anton LaVey’s *Satanic Bible* and Aleister Crowley’s *Book of the Law*, lead readers directly to Satanic worship or at best, as with Hicks’s *In Pursuit of Satan*, gloss over the problem. “Books from the public library show our children how to cast spells and perform rituals,” said Schmockworst. “The nature of the evidence is overwhelming.”

Graffiti, such as that found in the nearby town of Hydrant (shown in figure 1), clearly presented Satanic imagery. “An unsolved homicide was found within two miles of one of these,” he said. Rock performers are worshipping the Devil, and rock music has been definitively linked to

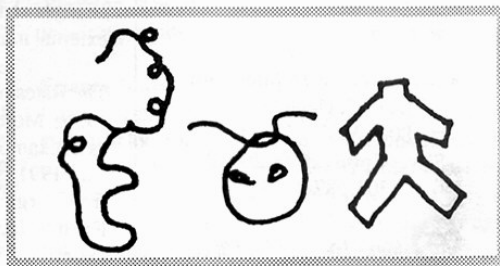
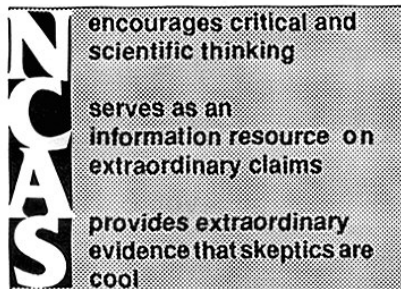


Figure 1. Examples of “Satanist” graffiti

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"Elvis Still Dead!" Says U.S. Post Office--see page 4



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**Remote
Viewing**

In this corner of the Eye, our remote correspondent keeps watch on strange goings on outside the Washington area and in the Tidewater region of Virginia in particular.

By Elena M. Watson

Aerobic Exercise for Eyeballs

I confess, I love mail-order catalogues—so much so that I have actually paid to get on mailing lists. But recently I've noticed some pseudoscience lurking among the usual mail-order kitsch.

A case in point is a weird pair of what are sometimes known as "aerobic glasses." The black lenses of these specs are full of little holes. The advertising copy generally reads, "Aerobic exercises for your eyes!" and includes a small section of an eye chart, as it would be viewed before and after using the wondrous glasses. The letters in the "before" section are blurry, but they appear clear and crisp in the "after" box.

When I first saw these ads, most notably in the Harriet Carter catalogue, I casually wondered whether they could be related to the old Dr. Bates vision-improvement system. But I wasn't willing to pay \$24.98 to find out.

Then the Hammacher Schlemmer catalogue arrived to answer my question. On page 21 lurked the familiar specs and eye chart. The copy read: "Vision-training exercise program includes a pair of innovative, non-prescriptive pinhole eye-glasses along with Dr. William H. Bates' book *Better Eyesight Without Glasses*." Eureka!

Dr. Bates, as you may know from Martin Gardner's *Fads and Fallacies in the Name of Science* (New York: Dover, 1953, pp. 230-41), claimed in his 1920 book that the cause of all refractive errors of sight was "strain," due to an "abnormal condition of the mind." In other words the cause was a wrong thought, and so defective vision could not be cured by glasses. The doctor developed the Bates system to relieve strain using "central fixation." Two exercises were done to achieve this: palming, or using the palm of the hand to rub the eye; and the shift or swing, in which the eye swivels back and forth. These exercises are known to be useless in most cases of poor vision, however. Farsightedness, nearsightedness, and astigmatism are caused by defects in the shape of the eye, lens, or cornea. Dr. Bates also refused to accept the physiological phenomenon of accommodation, in which the lens of the eye changes shape to focus on near or far objects. He preferred to believe that external muscles controlled this by changing the shape of the entire eyeball.

The Bates method enjoyed success, but eventually ran its course in the late 1950s. More recently, it has been rediscovered by the New Age and embraced as an example of holistic medicine. A possible example of this is found in the July 1991 issue of *Coastal Pathways*, an "alternative" monthly publication from Virginia Beach. An advertisement for the Fellowship of the Inner Light listed a lecture that sounded Batesian: "Natural Vision Improvement." Described as a "whole-person approach to preventing and reversing functional visual distortion" and taught by Jorge Calderon, this method promised

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"whole brain integration to release the emotional stress associated with poor vision." All of which seems reminiscent of Bates's concepts of abnormal condition of mind and strain.

But if you can't locate Mr. Calderon, you can always send Hammacher Schlemmer your \$34.95. If that sounds steep, just remember that "the lenses of the glasses are designed with pinholes arranged in a geometric pattern that allows only parallel light to enter the eye so that eye muscles are more relaxed and the cornea and lens focus more easily." You also receive an eye chart.

Of course you could go back to the Harriet Carter catalogue, and for ten dollars less get a similar pair of glasses. "Ingeniously designed glasses with hundreds of tiny holes help increase blood circulation to weakening eye muscles--the frequent cause of poor focusing and blurred vision as you age." These "aerobic glasses" also come with an eye chart and are said to "help improve vision."

Personally, I would prefer to order the personalized brass bowling-bag tag. And I don't even bowl. □

Maharishi's Message: Abandon the "Pool of Mud"!

Those of us who live and/or work inside the Beltway can no longer look to the Maharishi Mahesh Yogi and his followers to save us from our troubles. In mid-December, the Maharishi officially abandoned his decade-long effort to lower the capital's crime rate and achieve world peace through collective practice of transcendental meditation (TM). "I would not advise anyone to stay in the pool of mud....Save yourself from the criminal atmosphere....At least be there only during office hours," he told a *Washington Post* reporter (December 16, 1991).

The TM movement has closed its national office in Washington and moved its staff to Maharishi International University in (presumably) bucolic and crime-free Fairfield, Iowa. According to the *Post*, 20-40 of the most devout TMers have put their houses on the market. One said, "My house is for sale and I am moving out of the city as soon as I can....My family lives in the city, and the city is on fire."

The Maharishi's followers began converging on the national capital in the early 1980s in an attempt to bring about the so-called "Maharishi effect." This effect—peace, calm, an end to violence—was claimed to result from the collective efforts of a "critical mass" of meditators. In the mid 1980s, more than 400 of these "sidhas" (advanced meditators) lived in the Washington area. In 1985, more than 5,000 TMers held a meditation convention on the Mall.

Last year, the TM movement made a final effort, this time attempting to gain \$20 million in government funding for their world-peace-through-meditation project. When that failed, they abandoned ship, inviting the government to follow them to Iowa instead. Not to worry, however: the movement still has centers in the District and several suburbs, and some of the meditators have said they plan to stay in this area. What a relief! □



Prez Sez

Help Wanted

By Chip Denman

Last issue I wrote in general terms about being an active skeptic. Here are some very specific requests.

Archives

When NCAS first was organized in 1987, an *ad hoc* "archive committee" was formed. Under the direction of Dan Knauf, members collected newspaper clippings, magazine articles, and tapes of TV and radio programs which formed the core of a library of skeptical and not-so-skeptical materials. This library has been a very useful resource when preparing for radio or press interviews. Unfortunately those original members drifted on to other things. Gary Stone has organized our video and audio library, and the clippings became a set of file cabinets in my basement. I add to it whatever goodies I come across, but I'm sure I miss a lot--last week I was sent a clipping on Randi that appeared in the *Baltimore Sun* sent by way of a *Skeptical Eye* reader in Florida! Please keep an eye open for anything from ghost sightings in the Capitol, to the Maharishi's latest ad equating TM mysticism and quantum physics, to articles by Randi, Sagan, and other skeptics. Until further notice, send copies to the NCAS mailing address. Even better, members are needed to reactivate, rejuvenate, or otherwise reform the archive. If you can spare a few hours a month, call me at 301-587-3827. I'll put interested archivists in touch with each other.

Psychic Scorecard

As part of the archive project, NCAS should keep record of predictions made by Jeane Dixon and other local psychics. The Bay Area Skeptics in the San Francisco area have for many years issued a yearly scorecard of psychic predictions from the previous year. We can add to this excellent public awareness campaign with just a little effort of collection and fact checking. And after all, if there ever is a good hit, we inquiring minds want to be the first to know!

Science Fairs

For the last few years, NCAS has made special awards at local area science fairs. (See Mike Epstein's story on page 10 in the Winter 90-91 issue of the *Eye*.) Serving as a judge is a wonderful way not only to reward exceptional critical thinkers at an early age, but to see for yourself the range of local elementary, secondary, and high school education. All it takes to

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participate is one morning, usually a Saturday, sometime during the spring. We would like to send representatives to as many local fairs as possible. Contact Walter Rowe at 703-494-2916 to volunteer.

Publications and Publicity

This newsletter and the *Shadow of a Doubt* calendar are the most visible aspect of NCAS. The *Shadow* in particular announces events and other late-breaking news and must go out on a timely schedule, not only to our members but also to the press. Production and mailing assistance is always welcome.

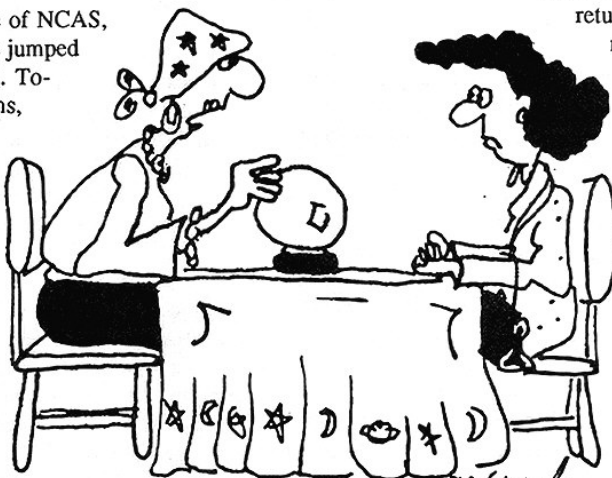
Computer Bulletin Board

As mentioned two issues ago, we are seeking donations of computer equipment so that we can establish a full-time NCAS bulletin board. Such a computer would provide a means of information exchange between members with computer access, maintain records of materials for loan from the archives, and assist in the timely compilation of the *Eye* and *Shadow of a Doubt*.

Board of Directors

If you are ready for a more personal commitment, nominate yourself to run for the NCAS Board of Directors. An open membership and an elected Board befit a skeptical organization in the shadow of the nation's capitol. As specified in our bylaws, 8 of the 16 seats are up for election to a two-year term. Over the course of the next few weeks, a slate of nominees will be drawn up, and ballots will be sent to members in early April. Current Board members span many backgrounds. You do not need any special technical ability or any previous experience. You do need a strong willingness to participate and the time to devote to monthly meetings and other projects. Contact Joe Himes at 703-280-2503.

In the organizational days of NCAS, nearly 40 eager volunteers jumped in to form an interim board. Today, with regular programs, publications, university courses, and radio appearances, we have more opportunity to promote critical thinking than that early board anticipated. Fortunately with a membership of over 300, we have a richness of resources to draw on. I'm glad I've been part of it; I hope you will be too. □



"Just a second...I've got a call on telepathic waiting."

Elvis Sighted in Post Office

As everyone who has seen *Miracle on 34th Street* knows, the U.S. Post Office is the ultimate authority on the existence of Santa Claus. And now they have ruled on another figure nearly as mythic: Elvis Presley.

On January 9, Postmaster General Anthony M. Frank announced that Elvis's likeness will appear on a U.S. postage stamp sometime in 1993. According to Post Office policy, living persons cannot appear on U.S. stamps.

Miraculous Appearance of James Randi

On December 5, James Randi enthralled an audience of 300 at the University of Maryland College Park. And the next morning a standing-room-only audience of over 800 filled the largest lecture hall at the National Institute of Standards and Technology in Gaithersburg. At both talks Randi demonstrated a modern miracle--the "blood" of San Gennaro. This "blood"--a concoction of Italian chemists working with indigenous materials available to medieval alchemists--is normally a dark jelly not unlike clotted blood. But a single quick shake of the bottle, and faster than you can say "Hallelujah" it liquefied into a completely free-flowing fluid. For a detailed description of this "miracle" see the November 14, 1991, issue of *Nature* (354, p.114). □

Disease Is in Our Stars

It appears that a large percentage of the very elderly have Alzheimer's disease, perhaps nearly half of those over age 85. An article in the *Dell Horoscope* (September 1991), "The Role of the Planets in Alzheimer's and Aging" by Daniel Heydon, proposes an astrological explanation: "Between the ages of 83 and 86, everyone experiences the opposition of Neptune to its own place in the birth-chart as well as a return of Uranus to its birthplace position. Also of great significance is the fact that around the ages of 82 to 84, a person experiences his third Saturn return." Heydon interprets this to mean that "the transit of Neptune in opposition to its own place, coupled with one's third Saturn return, carries a 50-50 chance of producing Alzheimer's disease." Of course, he reassuringly notes, "this astrological correlation certainly does not apply to the group which gets Alzheimer's between the ages of 45 and 75"--although even these cases may be due to other astrological factors. □

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animal and human sacrifices. Many serial killers are Satanists. There is evidence that there are 50,000 human and millions of animal sacrifices to Satan every year. Satan is everywhere—in magazines, in the games (such as Dungeons and Dragons) and music (such as AC/DC) our children play, in our government agencies, and particularly in our day-care centers, which are the soft underbelly of our society.

"I have evidence," said Schmockworst, "that children, from our day-care centers right here in Fireplug, are being flown every day to a remote site where they are forced to participate in Satanic rituals" (too offensive to describe in this article). He cited the personal revelations of a witness, whose multiple personalities included Salina and Tufu the Demon Dog! Why has Fireplug been chosen as a Satanic ritual center? "Because," said Schmockworst, "if you stick a pencil through Jerusalem on a globe, it comes out on the other side in Fireplug!"

Officer Schmockworst indicated that we must be constantly on our guard. Old phenomena, such as cemetery vandalism, must be seen in the new light of Satanism that has been revealed to us. While we should respect the First Amendment right of free speech, we have to keep an eye on possible Satanists for the sake of our children, he said. "Find out who reads occult books and watches pornographic movies. Look for Satanic symbols at crime scenes. And, above all, remember that in years past we denied the abuse of children. Let's not now deny the threat of Satanism."

At this point, Robert Hicks emerged from his alter ego to present the same lecture in a different light and a somewhat more rational manner. Reviewing all the slides that had illustrated Officer Schmockworst's talk, he pointed out the obvious fallacies and misconceptions, and emphasized that similar slides are used by the so-called experts who lecture on Satanic cults. Hicks indicated that such experts "make their living off scare tactics...with the intent of making money, making converts, or solidifying their congregation." Indeed, there is often a strong Christian orientation to the lectures, with an emphasis that "spiritually equipped" law enforcement officers are best suited to handle such cases.

Books presented as Satanist works at cult seminars are often nothing of the sort, the lecturers never having bothered to read them. Satanic imagery is seen everywhere, because what is looked for is often found, whether in magazines, graffiti, or acts of vandalism. When "definitive" cases of Satanism are described, a careful examination of the evidence causes them to fall apart. A day-care center abuser turns out to be a dwarf doctor riding a motorcycle on the Saturday morning cartoons. The "tunnels" underneath the McMartin day-care center in California where Satanic ritu-

als were allegedly performed turn out to be ditches from an old stable. Animal carcasses described as Satanic sacrifices turn out to be roadkill or trapper discards. A Christian magazine effectively debunks *Satan's Underground*, but not until it has sold 2.5 million copies. The Matamoros, Mexico, cult murder turns out to be a drug-running crime with media hype thrown in. A "straight arrow" boy who commits a murder due to Satanic influences finally admits he was just a bad kid. The beat goes on, but *where is the evidence?*

Cult seminars are usually well-organized meetings with limited critical thinking. It becomes un-American (or un-Christian) to question the speaker. The audience is asked to suspend its disbelief and not deny the problem. Examples of youthful behavior that differs from the norms of older generations (such as heavy metal music) is linked to Satanic practices. Hysteria and fear prevail.

Does all this sound familiar? Think of the communism scares of the 1950s, or the Blood Libel against the Jews throughout the centuries. Think of the witch trials of Salem, and those of Europe. There's nothing new, and the result is the same: abridgement of human rights and the miscarriage of justice.

According to Hicks, when a crime is committed, officials investigate it and prosecute it. Cries of "Satanism!" just confuse the issue. The smokescreen thrown up by accusations of Satanism can result in illegal searches or other abuses that may lead to a case being thrown out of court.

The next speaker, Dr. Randy Lockwood, described the lack of evidence for ritualistic animal sacrifice carried out by Satanist cult groups. In his job overseeing field operations of the Humane Society, he receives reports of unusual animal killings and works with local authorities to investigate. He has seen no evidence of the claimed 20–30 million animal sacrifices of dogs and cats each year. "Perhaps the 20 million dogs are being fed to the 60,000 children who are supposedly sacrificed," said Lockwood. While animal cruelty does occur, 90 percent of the time it is neglect. Of the remaining cases, which represent blatant cruelty and mutilation, there are very few with trappings of Satanism and none has been traced to a formal Satanic cult.

Cultures throughout history have sacrificed animals to deal with an uncontrollable world and to appease deities. Currently, tens of thousands of animals, mostly chickens, goats, and turtles (not dogs or cats) are ritually slaughtered each year in the practice of the *santería* religion. A syncretic religion, *santería* combines beliefs from several sources and honors tribal gods that are described as Catholic saints. The sacrifices are meant to gain power, seek protection, divine the future, or propitiate the gods. The Humane Society has

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protested against the sacrifices based on the living conditions of the animals, the emotional effect on children, and the health and safety aspects of disposal of the remains. There is evidence that the religion is currently evolving away from animal sacrifice. But *santería* is not Satanism.

Lockwood pointed out that while animal cruelty is a crime that must be taken seriously, cult cops and religious groups are painting a simple continuity that starts with playing Dungeons and Dragons and listening to heavy metal music, proceeds through conducting animal sacrifice, and ends with practicing human sacrifice. The evidence does not exist to substantiate those claims. While it is true that almost all serial killers abused animals, a minuscule number of animal abusers become serial killers. Most cases of cruelty to animals involve adolescent or young adult men younger than 25. Motives include seeking power over an easily controlled victim or attempting rebellion against societal norms of parents and teachers who preach, "Be kind to animals." Animal abuse is an easy way to show rebellion or to victimize someone. An example is the Wicked Witch of the West in *The Wizard of Oz*: "I'll get you and your little dog too!"

Animal abuse is often part of initiation into peer groups. As Lockwood remarked, if he proceeded to bite the head off a hamster as part of his presentation, he would definitely succeed in intimidating the audience. After all, if he could do that, who knows what else he might be capable of? Many animal abusers were also abused children. Satanic dabblers are often adolescent boys who are rebelling and seek to shock their peers and their parents. Since sex and rock 'n' roll don't scare parents today (many once participated in those activities themselves), youths use Satan to terrify them instead.

Attempts to tie avowed Satanist Anton LaVey and *The Satanic Bible* into animal sacrifice are badly misplaced. Lockwood has met this writer several times and found him to be an animal lover, an excellent musician, bright, and a bit of a recluse. LaVey does not believe in an entity called Satan, and in *The Satanic Bible* he says that under no circumstances would a Satanist sacrifice an animal or baby. Indeed, he acts as an adviser to humane societies that are investigating animal cruelty and keeps detailed files on animal cruelty and religious crimes. He believes the only

human sacrifices should be those of animal abusers (including hunters).

Many cases of claimed Satanic influence in crimes fall apart upon close examination. In the 1987 Newberry murder case in Joplin, Missouri, much of the evidence for Satanism consisted of a heavy metal record collection, which included some albums that Lockwood has in his own collection. In fact, parental abuse and drug use were the primary causative factors. Other cases include:

▶The discovery of the mutilated bodies of dogs in Lynchburg, Virginia, initially cited as evidence of Satanic ritual, and finally discovered to be those of coyotes used in a biology experiment on decomposition.

▶A castrated and dehorned goat found near Pontiac, Michigan, which turned out to be the victim of a dog attack rather than of a Satanic sacrifice.

▶Bodies of sixty-seven cats found mutilated with "surgical precision" and "completely drained of blood," which were found to be victims not of Satanic sacrifice but of coyote teeth which, being as sharp as surgical instruments, can bisect a cat with one bite and afterwards, lick up the blood.

▶The carcasses of animals piled on a makeshift altar in Allentown, New Hampshire, which turned out to be roadkills stacked up by highway workers.



"What we have here is either an example of declining literacy in our schools or a cult of bizarre fabric worshippers."

Based on an actual case cited by Randy Lockwood. By Mike Epstein, with apologies to Gary Larson.

Both speakers made the final point that the best way to investigate a homicide or case of animal mutilation with Satanic trappings is to investigate the crime and ignore the trappings. Take Satanism to be the sign of disturbed youth or aberrant behavior, not of a Satanic cult conspiracy. So many of these stories gain the status of fact by the retelling. The real fact is that Satanic seminars are just bad law enforcement. □

As If They Didn't Have Enough Problems Already...

The political break-up of the Soviet Union, struggling economies, food shortages: you'd think people in the former Soviet republics would have enough to worry about. Just in case they don't, there's this report from Siberia, relayed by Reuters news service (*Chicago Tribune*, November 21, 1991): "Residents in a remote Siberian village have reported a giant green snake with the head of a sheep patrolling their local lake." Reuters quoted the Tass news agency as stating that "dozens of people have seen this green monster, which has the girth of a large tree trunk and is around 6 or 7 yards long. One of them even managed to take a photograph of it. It swims along with its head high in the air." The tracks of the beast, which resemble the marks left by sleigh runners, are said to have been seen along the lakeshore near the village of Sharipovo. □



A Skeptic's Response

This feature of the Skeptical Eye is designed to provide skeptics with brief, logical answers to questions that may arise in conversation. Do you have a question--or a response--that should be shared with other skeptics? Send it to the Eye.

Scientific Creationism

By Steven N. Shore

In 1859, Darwin described the origin of species and provided the critical theoretical tool, natural selection, with which the diversity of life can be understood. In 1991, it is still obligatory in many school systems in the United States to teach the individuality of species and the principle of special creation along with evolution in high school biology classes. The intervening years have seen the tide of many efforts, all with an anti-evolutionary or theologically fundamentalist slant, ebb and flow over American public opinion. In this note, I will review some of the basic tenets of the most recent of these movements, "scientific creationism"—the most sophisticated and successful of all attempts to subvert science in the classroom.

Evolution, specifically biological evolution, has one basic principle: all things change. In the mid nineteenth century, discoveries in thermodynamics and technology pointed to the existence of a fundamental process. In the operation of any physical mechanism not all of the energy put into a system can be recovered as work. Some is lost in the form of heat and radiation, a quantity dubbed "entropy" by the German physicist Clausius (d. 1888). The existence of this often small quantity of lost energy defines an "arrow of time," a direction for the flow of natural processes. In effect, it states that all closed systems—those with limited energy supplies—must inevitably run down. At least this is how the concept of entropy is taught in science classes today and how the general public understands it. Entropy implies that all systems must change, and especially that the ability of a living system to continue is only the result of its constantly receiving nourishment (energy) from its environment. Aging is a variety of this process, and so is speciation.

Darwin realized that diversity can be thought of as an expression of the continuous process of slow selection of different paths by a living population. While the precise mechanism for such differentiation and diversity was not immediately apparent, competition and limited resources would provide a powerful selection agent. Natural selection, named by analogy to the breeding programs of farmers and pigeon fanciers, could readily account for the comparatively small differences that were magnified by isolation to produce unique, separate species.

Darwin and his successors reasoned that time was the final element in the universal equation that distinguished the process involved with human agency from that operating in undomesticated nature. Time was essential. It allowed separated variants to develop into species, and allowed species to separate into genera. Time was the element that, given small entropic increments, could alter the basic taxonomic composition of life on Earth. In fact, as Huxley was the first to argue forcefully, time could be a potent enough agent that species as similar as apes and humans could eventually separate. Humans have a line of descent, he argued, and it stretches back in time through the apes to an epoch when life, in some extremely simple form, first began.

This realization, though supported only by the tools of zoology rather than by those the chemist or physicist has available in the laboratory, was and is one of the foremost steps in the history of thought. It is also the root of the anti-evolutionary reaction. The immediate consequence of Huxley's and Darwin's writings was the appearance of a powerful religious reaction. Man must, as a divine creation, have a special place in nature. Given dominion over the planet by divine gift, humans were apart from the rest of nature. The line of descent stopped at the Garden of Eden. That such views were expressed in the debate between Bishop Wilberforce and T. H. Huxley in the 1860s does not, I think, strike anyone now as strange. Evolution was, and in many ways still is, a completely counterintuitive, indeed alien, concept. Placed side by side, a lizard and a bird seem to have nothing at all in common, at least superficially. The sight of an ape may cause a shock of recognition in the human viewer, but apes are obviously dumb and brute (at least, that was the argument).

It is easy to dismiss this anti-evolutionary reaction as naive or stupid. It is neither. The scientific method is a tool for the elucidation of process in spite of its counterintuitiveness. The enormity of the age of the cosmos is something completely lost on a populace whose collective concept of time is last week's football game. That counterintuitiveness is precisely what the creationists capitalize on. The facts of evolution are most clearly seen in the physical rather than the biological domain. The lines of descent, *clines* as morphologists call them, are best determined historically through the application of radiometric dating methods and

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geological stratification. Neither of these, nor the application of molecular clocks, can stand independently and obviously as proof of the process.

Since I have emphasized that time is an essential ingredient of all evolutionary processes, what are the basic observations that demonstrate the antiquity of the universe and the Earth? First, and most obvious is the expansion of the universe, the so-called "Hubble flow." The creationists point to the uncertainty in the rate of this expansion, given by the Hubble constant, in order to dismiss it entirely. While the rate is still uncertain, and very difficult to measure with any precision, there is no doubt that it exists.* Then there is the age of the Earth, determined by radiometric dating using isotopes of the uranium decay chain. The age of the Galaxy can be dated using similar methods with different chemical species, those produced in supernova explosions (specifically ruthenium and osmium, but others are also available). The chemical evolution of the Galaxy itself is demonstrated by the fact that the oldest stars are those least abundant in heavy elements, and there is approximate agreement between the rate of stellar evolution and star formation, and the increase in the metal content of the stellar population. (Pollution in the interstellar medium leads to high metal content in the most recently formed stars.) I should add that this too is a manifestation of the action of entropy: the formation of the elements is the result of stellar death driven by energy losses from the stellar interior to space.

Perhaps the most striking confirmation of evolutionary thinking is the detection of neutrinos from the collapse of a star that formed Supernova 1987A in a neighboring galaxy, the Large Magellanic Cloud. (Here I ask readers' indulgence: I am after all an astrophysicist.) The prediction that these neutrinos should be emitted when a star collapses to form a neutron star with the attendant explosion of its surrounding envelope dates back to the mid 1960s. The neutrinos were accidentally observed independently in February 1987 by two experiments, one in Japan and one in the United States. Both observations took place within a fraction of a second of one another and at a time that preceded the optical appearance of the supernova. In addition, during the expansion of the ejecta from the explosion, the decay of cobalt—synthesized during the explosion in the deep interior of the star by the passage of a shock wave after the collapse—was directly observed. Finally, the details of the

evolutionary history of the progenitor star have been explored, and the state of the stellar interior as revealed by the increasing transparency of the now ejected envelope matches the observations. In effect, the supernova peels away the history of nuclear processing in the star in the same way that the Colorado River revealed the evolution of the North American continent as it stripped bare the walls of the Grand Canyon.

Modern creationists have several key arguments, some of which are related to these mechanisms. First, they appeal to the notion that the complexity of the world cannot be the product of countless "mistakes." In this, they exaggerate the colorful popular descriptions of the process of mutation by T. H. Morgan and the early geneticists. They argue that, as Duane Gish of the Institute for Creation Research (ICR) has put it, imagining the creation of man by the accumulation of replication mistakes is like trying to imagine a tornado sweeping through a junkyard and assembling a Boeing 747 jetliner from the junk. Well, in one sense they are right: both are equally hard to picture. But that alone does not make either one impossible. In fact, the argument is nonsense, because the two hypothetical cases are not parallel. There is nothing determining direction in the assembly of junk into a jet, while chemical processes and environment and time all serve as agents to direct the evolutionary change. It would be better to describe the process as being like all of the molecules in a room taking a sudden jump of one centimeter to the left, wildly improbable but not impossible—and calculable.

The Austrian physicist Ludwig Boltzmann (d. 1906) introduced the statistical understanding of entropy nearly 30 years after Clausius's discovery by demonstrating that it can be thought of as a measure of order. Again, the creationists capitalize on this image by saying that the order observed in the human body violates the law of increase of entropy. Ilya Prigogine and the Brussels school of physicists, again among many others, have shown that an increase in local order can result from a system being open, and that the order is the result of the increase of the available energy reservoir. For instance, the energy of the Sun is derived from nuclear fusion reactions deep in the solar core that release binding energy and build heavy elements. The Sun is held together by gravity, an attractive force, which drives the reactions and regulates the central temperature, while the loss of energy through the surface to space regulates the rate of the reactions. This energy is then available over a very long time to a relatively isolated system, the Earth. It maintains the temperature of the system; geological processes, such as plate tectonics and atmospheric change, even climate, moderate the influence of this external energy source. Life flourishes and differentiates precisely because local factors are at work as well as global ones!

Catastrophism is one of the centerpieces of creationism, specifically flood geology. The creationists argue that there

*Yes, there is a recent (1991) book by Eric Lerner called *The Big Bang Never Happened*, and astronomer Halton Arp has long harped about noncosmological redshifts, but they represent a fringe element that uses the same tactics as the creationists: Contradiction, no matter how obtained or in what context presented, is considered enough to trash an otherwise well-supported picture. By the way, the anti-Big-Bang arguments are now showing up in creationist literature.

are many indications of the flood: trees standing upright through geologic strata in Yellowstone, inverted geologic columns in Nevada, and even the stratification of the Grand Canyon. They have mounted "expeditions" to the site of the Mount St. Helen's eruption to demonstrate the recovery of the Earth after the flood. And the ICR has undertaken several attempted climbs of Mount Ararat in Turkey to find what is reported to be the remnant of Noah's ark (these expeditions are always failures for one or another reason but never without promise of future success). The founding work of modern creationism, *The Genesis Flood* by Whitcomb and Morris, depends on the veracity of the flood story and on a young Earth for all of its refutations of evolution—in effect assuming the answer before examining the evidence—and the discovery of the ark is exceedingly important to some believers. Although in the past few years it has become an increasing embarrassment for "scientific" creationists to highlight the biblical roots of their beliefs, the ICR and other creationists continue to exploit the importance of the ark to converted audiences in homilies and revival gatherings of like-minded believers.

Other geological anomalies are trotted out as needed. The variation in the Earth's magnetic field is another favorite of ICR spokespersons, following a little tract by Thomas Barnes, an ICR board member, that purports to demonstrate that the secular change (decrease) in the field strength means that there must be a young Earth. In fact, they always show only part of the data, those for the past 150 years only, ignoring the fact that there have been many recorded reversals of the field throughout geological time. These known reversals are well enough coordinated worldwide to form an alternative timekeeper for the geologic column. Plate tectonics, the most successful global unification of the earth sciences, has been demonstrated by such diverse observations as the distribution of volcanic and seismic zones and direct measurement of plate spreading using intercontinental radio observations of astronomical sources. The timescale required for the evolution of the continents is completely supported by these and related results, some of which actually depend on the variations of the polarity and orientation of the magnetic field, but these are dismissed summarily by the creationists. The cycles of growth and subsidence of the matter on the surface, the variation of the ocean boundaries, the ice ages, all speak of the many processes that shape the structure of the Earth.

Geological evolution, like any other type of evolution, is not steady, and the tempo of the processes varies with locale. It is not the evidentiary minutiae of evolution that make it so persuasive, it is their ubiquity.

Biologically, the most successful creationist argument is the lack of obvious transitional forms. Archeopteryx was contemporaneous with several Cretaceous birds of more modern form, and therefore (the creationists argue) it is not a transitional form. Besides, Sir Fred Hoyle and Chandra

Wickramasinghe have called the authenticity of the fossils into question. The australopithecenes are apelike in much of their morphology, therefore they are apes, according to creationists. But as Donald Johanson's work on the Hadar site in Africa proves, the australopithecenes were clearly protohuman in their leg, foot, and pelvic anatomy. Piltdown Man was a forgery—but need it be added that single instances of fraud do not invalidate entire disciplines? Nebraska Man was a misidentification of a pig's tooth as human, and Neanderthal is actually the same as modern humans, in contradiction of the "scientific" portrait of the "brute of the Ice Ages." The most frequently quoted paleontological "evidence" for creationism is that human footprints coexist with dinosaur tracks preserved in the Paluxy riverbed in Texas. One cast that is often shown is a forgery, and the others are the product of the irregularities in the footprint structure of camposaurs in the ancient, muddy trackway.

Astrophysicist and NCAS board member Steven N. Shore was a founding member of the Committees of Correspondence on Creation/Evolution and has publicly debated creationists around the country. His most recent debate was against Duane Gish of ICR, in Charlotte, North Carolina, in November 1991. This was his third appearance with Gish. □

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Reality Check in the Field of Dreams

By Don Oldenburg

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A fire-breathing dragon lurches at Jeremy Taylor. Terrified, he tries to flee but stops as soon as he realizes this is all a dream. He turns and confronts the monster.

"What are you doing in my dream?" he demands.

"I'm here because you called me," roars the dragon.

Taylor's feelings suddenly change. The dragon remains menacing, dangerous, but oddly Taylor feels affection for it, as if it were Puff the Magic Dragon rather than the Creature from the Black Lagoon.

The beast is an image of his cigarette habit, Taylor knows. Smoke begins to exude from its eye sockets, from under each scale, a horrible odor everywhere. He looks again at the dragon and now is filled with revulsion.

"I do not want you in my life," he commands, then awakens to the comforting twilight of his bedroom in San Rafael, Calif.

Jeremy Taylor says that night a few years ago changed his life. From the moment he awoke, his craving for nicotine was gone. The addiction was gone. "I stopped being victimized by smoking with that dream," he says.

A Unitarian minister and veteran dream educator, Taylor teaches courses in the San Francisco Bay area in "dream work," an all-purpose buzzword for the multidisciplinary and multidimensional study of the experience of one's dreams that lately has found enough popularity in this country to be labeled a "movement." Like hundreds of therapists, psychologists, educators and amateur dream "doers" who conscientiously investigate phantasma, he is adept at methods of dream interpretation, practiced in the art of lucid dreaming, can speak knowledgeably of the analytic leanings of Sigmund Freud and Carl Jung.

But central to the courses he teaches and to the key technique that unlocked his dragon dream is a dream-work approach as exotic and appealing as it is controversial. Named for the Malaysian aborigine tribe said to have created and ritualized it, Senoi dream theory is a set of beliefs and practices that has changed the way many people dream.

It was virtually unknown beyond academic circles before the early '70s. But, about the time the human potential movement adopted dreaming as one more altered state of con-

sciousness that could be used to improve our lives, stories of the remarkable Senoi began to appear. Based on the research and writings of a maverick American anthropologist named Kilton Stewart, who first visited the Senoi in 1935 and wrote of their practices for two decades afterward, portrayals of near utopia in Malaysia's mountainous jungles spread in popular dream literature and self-help books.

Happy and nonviolent, with no signs of mental illness, no history of war, no incidents of child abuse or brutality, the seasonally migratory Senoi harvested tapioca and manioc and hunted monkeys and squirrels with blowguns. Otherwise, according to Stewart's accounts, they spent inordinate time dreaming, educating their children about dreaming, and discussing their dreams openly.

The techniques they used were sensible, yet sophisticated by Western standards, mostly predicated on an ability to take conscious control in dreams. Senoi were said to be taught from an early age to confront and conquer dream enemies in nightmares, to demand gifts such as a song or picture from them, to kill them if necessary. Defeated dream enemies were transformed into dream allies for help in future dream adventures. Falling dreams were to be turned into flying dreams. Pleasure and sex in dreams was to be pursued and consummated.

In waking life, families discussed their dreams every morning at breakfast, the most intriguing of which were taken to larger communal gatherings for further discussion. And neighbors whose images appeared in one's dream were to be told, so that the positives or negatives of the dream interaction could be examined.

Almost overnight, "Senoi" became synonymous with the frontier of the dream world. Their dream feats inspired two novels--"The Kin of Ata Are Waiting for You" and "The Word for World Is Forest"--and a jazz album titled "Dream Theory in Malay," which was underscored with tribal rhythms. For those familiar with dream esoterica, the Senoi had become "noble savages" who masterfully weaved waking and sleeping realities with such good effect as to strike awe in civilized society.

Senoi dream theory seemed almost too good to be true. And most likely it was.

While questions concerning Kilton Stewart's Senoi research had surfaced by the late '70s, most only doubted his anthropological methodology. When Ann Faraday spent a lengthy visit with the Senoi in 1982, the British psychologist, whose 1974 book "The Dream Game" helped to popularize Senoi practices, reported back that, sadly, she could find little to substantiate the dream theory.

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Not until William Domhoff patched together a comprehensive debunking of the theory in his 1985 book, "The Mystique of Dreams," did the Senoi become something of an academic nightmare for dream researchers. A professor of psychology and sociology at the University of California, Santa Cruz, Domhoff is better known for such down-to-earth books as "Who Rules America?" His scholarly standing in dream research comes as a social scientist who "holds to a cognitive theory of dreams," and not a dream experimenter. His first hints that something was amiss in Malaysia surfaced while he taught a general survey course on dream theories.

"I was as surprised as hell," says Domhoff, who still teaches about Senoi dream theory in his course but discredits its authenticity. His initial investigation discovered that no anthropological studies of the Senoi, other than Stewart's, mentioned the phenomenal dream practices supposedly engrained in Senoi daily life.

Further evidence indicated that Senoi did not talk excessively about dreams, teach their children dream techniques, or think in terms of controlling dreams. Instead of a dream life enriched with conquered enemies, magical gifts, friendship and sensuality, Domhoff contended that the fabric of Senoi dreams typically was sewn of frustration, failure, chases and falls, "just like the rest of us." His intellectual indictment: "What is totally bogus about this is that Senoi don't do it...in any way, shape or form."

When his investigation turned to the likely culprit of such an elaborate fabrication, Domhoff discovered the enigmatic Kilton Stewart, a rogue intellectual whose Senoi "research" gained greater currency after his death in 1965 than he probably ever imagined. (To assess Stewart's imaginative powers, however, may be a tricky undertaking. Both brilliant and bombastic, he was fond of saying such things as "an uninterpreted dream is like an unopened letter from God." Most accounts paralleled that of an anthropologist who knew him: "He was the kind of guy you like to go drinking with--a completely charming and completely irresponsible man.")

Domhoff believes Stewart was a "totally free spirit" who exaggerated a dream theory from the scant dream life he found among the Senoi. His motive? Perhaps, he speculates, Stewart's generosity and humanity led him to decide that what the troubled and violent Western world needed most was a shaman who could enter its dreamscape and restore health and balance. Indeed, to believe in Senoi dream theory is to believe in each individual's own shamanistic dream powers.

"Just one of those things where most people didn't question it," Domhoff says of the spurious research. "You kind of trust your fellow researchers." As for reaction, Domhoff confidently puts Senoi dream theory to rest "Most people," he says, "feel a little embarrassment over the whole episode and

just as soon let it go away."

But, the irony of Senoi dream theory--six years since the exposé--is that, like a recurrent dream, it hasn't gone away. If questions of its authenticity have been settled, questions of its validity haven't. In the dream-work movement, the line between reality and fantasy isn't always distinct. Nor does it always matter.

"I use the Senoi techniques regularly because they are tremendously functional and real and true," says Jeremy Taylor, whose 1983 book "Dream Work: Techniques for Discovering the Creative Power in Dreams" promoted Senoi practices. He believes the Senoi today aren't the dream people they once were, due mostly to government repression in Malaysia and the disruption of their traditional life. He believes data that trash the theory are skewed by political and economic circumstances. He hopes to "rehabilitate" Stewart's reputation. "All of the things that Stewart said the Senoi did actually do work," he says.

When people tell Taylor he appeared in their dreams in a negative way, for instance, he apologizes. "The Senoi say that the dream spirit of someone you know in waking life that hurts you in dream life has somehow attempted to hurt you in waking life," he explains. "That is 99 to 100 percent true in my experience. And it works. It not only changes the dream experience, it heals and transforms waking experience as well....These techniques are valid, not because Stewart...peddled them, but because nearly everybody who tries them discovers that they work."

Taylor isn't the last remaining practitioner of Senoi dream theory. Nor does his effort to reinstate its legitimacy fathom the larger-than-life legacy the discredited theory has passed on to today's dream-work movement.

"As far as hundreds and thousands of people are concerned, it is valid," contends Kilton Stewart's widow, Clara Stewart Flagg. "You might bear in mind when Margaret Mead died, all the hullabaloo that surrounded her work."

Flagg has been an outspoken defender of the practice and promise of her late husband's research. As his assistant, organizer, editor and, later, his wife, she worked side-by-side with Stewart for more than 20 years and helped to shape the theory from dissertation into a popular dream treatise. She says she traveled around the world nine times with him "studying dream theories of primitive groups," including spending months amid the Senoi, witnessing their dream practices herself.

Now living in Los Angeles and remarried, she and husband Allen Flagg conduct weekly "Dream Education Workshops," and schedule private dream-work sessions there and

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in New York--all based on the principles and techniques of Senoi dream theory. Flagge also is emphasizing the healing potential of dreams--a hot topic in dream work but scientifically unsubstantiated. Clients who've told her their dream work has relieved or eliminated such disorders as diabetes, arthritis and sexual problems are just further proof, she says, that Domhoff's rebuff is "nonsense." Besides, she says, "I was there. Domhoff was never there." Then, Flagge says something else that seems to echo from an altered reality where people change events to suit themselves. "Even if what Domhoff said were true, all the more credit to Kilton Stewart."

Lately, remnants of the theory are appearing, often unattributed to Stewart or the Senoi, in dream-work literature.

In a 1990 collection of articles by 28 dream researchers, titled "Dreamtime & Dreamwork: Decoding the Language of the Night," mention of Senoi is cautious. One chapter on nightmares gives an encouraging account of research on the "face and conquer" treatment that's akin to the Senoi principle. Another chapter on erotic dreams that discusses Senoi-like methods refers to them as a "school of thought" named after "a tribe that at one time was thought to have organized communal life around dream work."

Karen Paley, a Massachusetts social worker who wrote the erotic dream chapter, believes some Senoi techniques are practical. She's found them to be effective in helping with recovery from childhood sexual abuse and incest. "Their whole dream patterns change when they essentially stand up to perpetrators in their dreams," says Paley. "To me, that is back to Senoi stuff."

Stanley Krippner, the editor of "Dreamtime & Dreamwork" who says he never endorsed the theory, is rethinking his position. "That particular theory," says the psychologist at Saybrook Institute in San Francisco and the former director of the Dream Laboratory at Maimonides Medical Center in Brooklyn, "is an interesting example of something that is valid but not authentic."

Patricia Garfield, whose 1974 bestseller "Creative Dreaming" contributed significantly in popularizing Senoi techniques, borrowed from the theory for her book on children's dreams and does so again in her upcoming book on healing and dreams. "It's almost as if we have empowered the dreamer," she says, "and then we put the shackles back on, saying, 'No, no, this might not be true.' People have to decide for themselves."

Robert Dentan, an anthropologist at the State University of New York, Buffalo, who has lived with the Senoi and knew Stewart, finds much of this amusing. It might be more accurate to rename it the "modified American dream theory,"

he says. His favorite of the pseudo-Senoi approached is Strepson Katlan Williams's 1980 "Jungian-Senoi Dreamwork Manual," which incorporates Stewart's techniques with theories of psychologist Carl Jung. "It makes no claim that the Senoi are real people, but rather that they're mythic people," says Dentan. Or, as Williams explained, the Senoi have become a "symbol for the intention of a community to make dream work the guiding basis for social, cultural and personal lives."

In fact, communal dream sharing appears to be the larger legacy of Kilton Stewart's work. Rita Dwyer leads a dream group in Vienna, Va., where members meet regularly to recount their dreams, go over the written entries in their dream journals, and experiment with dreams--not unlike the Senoi gatherings Stewart described.

"I don't really work with Senoi techniques," says Dwyer, who is also vice president of The Association for the Study of Dreams, an organization Domhoff describes as neutral meeting ground for professional sleep and dream researchers and dreamers. "Some of the things I work with may be squeezed into the Senoi theory, but it's just good dream work. Like sharing dreams is just good dream work."

Others see dream sharing as only part of the liberation of the Western dream world. "The old theory is that you have to go into therapy in order to do this kind of stuff with dreams," says Carol Warner, an Arlington social worker who has led dream groups and sometimes uses Senoi techniques in treating her clients. "But you can do this with yourself and your friends. It doesn't have to be with a therapist or a priest. Our dreams are accessible to ourselves. And that was one of the Senoi elements."

Charlottesville, dream researcher Robert Van Castle calls Senoi dream theory "a useful exaggeration with some marvelous fringe benefits." The professor of behavioral medicine in psychiatry at the University of Virginia credits Stewart, in part, with the proliferation of dream groups nationwide. "That it is everybody's birthright and everybody's heritage, that we all are going to have the same 100 minutes of dreaming every night...that we are going to benefit from dreams," says Van Castle, "all of that derives from a romantic rogue and marvelous storyteller who took liberties."

For Kilton Stewart to be praised for his subterfuge isn't bewildering to Domhoff. He doesn't dismiss the legacy as readily as he does the theory. "Senoi dream theory is an allegory about hopefulness and change," he says. "And I think that hopefulness is deeply ingrained in the American character. We can get better and better." He pauses before revealing his theory of the true origins of Senoi dream theory: "American can-do." □

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becoming a New Age Mecca. When interviewed by the *Virginian-Pilot*, many locals replied that they thought the New Ager's were "grave robbers." Dick Austin, curator of St. Luke's, which dates to 1632, said the church board did not authorize a vault dig there, because "we have no reason to believe there's anything of that nature here." Likewise, Peter Grover of Bacon's Castle, former home of colonist and rebellion leader Nathaniel Bacon (1642–76), said, "We're not going on a wild goose chase."

Meanwhile, both Marsha Middleton and Marie Bauer Hall returned to Williamsburg to search for the elusive vault. Because of a court order against them, Middleton and her followers stayed out of the Bruton Parish Churchyard. But they were highly visible as they stood around the colonial area, urging tourists to sign petitions for a dig. At other times, they held hands and stood in circles, praying and meditating.

Hall made the rounds on the lecture circuit, speaking at the Williamsburg Library, the Association for Research and Enlightenment, and the Marriott Inn in downtown Norfolk. She also continued to make even more outrageous claims, stating her belief that Francis Bacon was really the son of Queen Elizabeth I. And the *Virginian-Pilot* reported that when a television reporter asked her for concise proof of the vault's existence, during a press conference, she responded angrily, stamping her feet. "You reporters are wrong to ask that kind of stuff," she informed them. "Somebody should put you in your place when you do." She further claimed that she could prove her case, "historically, philosophically, religiously and then some." As evidence of this she indicated the Virginia state flag. The spear shown pointing downward is supposed to be a clue that the vault is buried in this state. She later baffled her audience by informing them that "we are sent here to serve our apprenticeship in this microcosmic solar business."

On October 29, a circuit court judge made permanent the court order preventing Middleton's group from trespassing on church property. The *Washington Post* (October 30) quoted Middleton as saying, "We had to leave it in God's hands," since her Ministry of the Children lacked money to hire a local attorney. Middleton later admitted that she and her companions conducted a second excavation on November 27, violating the court order, after the church ruled against allowing an archaeological dig. On December 2, according to the *Washington Post* (December 6), warrants were issued charging Middleton and her companions with two counts each of trespassing, and two counts of destruction of church property. The *Post* reported that the group had apparently left the state. On December 4, Middleton faxed an apology to Bruton Parish Church officials, stating that "we extend our humblest apologies for the inconveniences of the Mother Earth that was overturned in your churchyard

by the Ministry of the Children in quest for the Sir Francis Bacon Vault."

Ironically, the idea that Francis Bacon, an English philosopher and statesman who lived from 1561 to 1626, wrote the plays attributed to Shakespeare is no longer even a fashionable fringe belief. Those who attribute the writings of the Bard to someone other than the so called "man from Stratford" now favor the Earl of Oxford rather than Bacon.

Middleton, who first learned about the supposed vault 15 years ago, wanted to find it in 1991 because her reading of the Mayan calendar "revealed" that the age of materialism would end with 1991 and that the age of spirituality and enlightenment would begin on January 1, 1992. The Mayan calendar reference brings to mind the Harmonic Convergence, the New Age media sensation of 1987, in which people gathered in sacred places all over the world to meditate, chant, and what-have-you, in order to "align" the energies of the Earth. This endeavor was prompted by Jose Argueles's book *The Mayan Factor*. He supposedly had studied the cycles of the Mayan calendar and discovered that the great cycle ends in 2012. The last phase of that cycle was the time of the Harmonic Convergence, August 16, 1987. After that we were said to enter a new "resonant field paradigm" which is less rational, and by the summer of 1992 we enter the last phase of the great cycle. It would be interesting to determine how this fits with Middleton's belief system.

Hall, the originator of the vault theory, is the widow of Manly Palmer Hall, who was the founder of the Philosophical Research Society and has been called one of the forefathers of the Christian New Age movement. He was also the author of *Secret Teachings of All Ages*. When she first announced the existence of the Bacon manuscripts in 1938, Hall claimed they were buried under the foundation of the first Bruton Parish Church, built in 1683. The present building was built in 1711, and the exact site of the original foundation was unknown. Hall claimed to have used clues from some of the tombstones and from the writings of Bacon and Shakespeare to find it. And although the original foundation was found nearby through a partial excavation, the Rockefeller family, who helped finance the renovation of Colonial Williamsburg, said that more digging was to be done only by professional archaeologists. So far, this has not happened. A 1978 book entitled *Weird America—A Guide to Places of Mystery in the United States* tells the story of Marie Hall's search.

Surface tests were done in 1985, 1986, and 1987, sponsored by Hall's Veritat Foundation and conducted by John V. Milewski of Santa Fe, a ceramic engineer with his own laboratory, SuperKinetic, Inc. These tests supposedly indicated that something big might be buried 20 feet below the

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original foundation. In a telephone interview the 62-year-old Milewski told the *Virginian-Pilot* that by shooting electricity into the ground in a series of 13 tests he discovered "something is down there causing an increased electrical resistance." That was at the depth of 10–20 feet. From his data Milewski claims it looks like a 10-foot cube. Because the area contains few rocks, he doubts that it could be a boulder.

Also interested in the vault is Tudor Graphics Systems, a "universal public relations consulting firm for any organization that is constructive with its intent to aid humanity in positive causes," according to member Fletcher Richmond of Williamsburg. He also told the *Virginian-Pilot* that besides the plays of Shakespeare the vault contained "the original King James version of the Bible that Sir Francis Bacon authored for King James I, the locations of all the Masonic vaults in America and around the world," and last, but hardly least, proof that a deceased person's soul takes on a different human body.

Just how Sir Francis Bacon came to be associated with such New Age nonsense is unknown. It has often been thought that he was some kind of occultist or a member of the Rosicrucian order, according to the *Encyclopedia Britannica*. But evidence for this is slim, as the encyclopedia points out. The "natural magic" he espoused was different from that of esoteric philosophies. Divine knowledge to him came from observation of nature, not abstract reasoning. He further thought that observations must be repeatable, and favored the use of methodological procedure against the use of individualism and intuition. As for Bacon's authorship of the King James Bible, James I employed 47 scholars to prepare the translation, during the years 1604–11, and Bacon wasn't one of them. Much of their work was derived from earlier English Bibles, especially the Tyndale translation of the New Testament.

The supposed vaults are said to be Masonic in origin, and no Masonic lodge in the United States predates 1730. The first Williamsburg lodge was established in 1750, nearly one hundred years after the original Bruton Parish Church was built. Furthermore, even though Freemasonry is descended from the medieval craft guilds, and the first nonstonemason members were accepted as early as 1600 in Scotland, the Grand Unified Lodge in London did not appear until 1717. One would imagine such unity would be needed to coordinate worldwide vault burying.

We might as well give Bacon the last words in the matter—fitting words, too, in the face of human nature, and that strange quantity known as belief. Bacon opined that "man prefers to believe what he prefers to be true." □

Reginald Scot: Sixteenth-Century Skeptic

By Richard A. Dengrove

Although Reginald Scot wrote his *Discovery of Witchcraft* in 1584, it is still quoted today. Keith Thomas quoted it both attributed and unattributed throughout his classic *Religion and the Decline of Magic* (1971). James Randi gave Scot nothing but praise in a videotape NCAS played recently. One reason is that Scot's book shows great intelligence. Another is that it shows such passion and outspokenness that it transcends his sixteenth-century vocabulary and spelling, and remains readable in the late twentieth century. A third reason Scot's book has survived is that Scot is so skeptical of his era's beliefs—an almost modern skeptic.

Was he a skeptic in the modern sense of a critical thinker? Not quite. Scot bridged the gap between modern skepticism and an older skepticism.

Could there be an older skepticism? Yes, there was. At times, these skeptics were hunted as heretics; at others they helped create the dogma of the Church. And a few doubts remained Church dogma, even through the witch craze of the sixteenth and seventeenth centuries. What could older skeptics believe? Just as modern skeptics doubt beliefs that contradict science, the pillar of our age's thought, older skeptics doubted beliefs that contradicted the Bible and the Church fathers, the pillars of their age's thought.

Scot certainly argues this way about witches and magicians. For him, since the powers attributed to them surpass those of Christ and God, belief in witches and magicians is impious. Scot was not alone in claiming this, either. Similar thinking caused Church dogma to doubt man-beast transformations—cases in which human beings were said to have turned into asses, birds, wolves, and so forth.

Also, Scot is an older skeptic because he believes that the Age of Miracles has ended. As his authority, Scot cites St. Augustine. For Scot, miracles are no longer needed to spread the faith, so saints no longer perform them. Therefore, Scot asks, how can poor old women and knaves perform wondrous feats?

Furthermore, Scot is an older skeptic because, for him, the Devil could not approach anyone and present a pact for a person to sign. Likewise, the Devil could not attend a witch's sabbath and have his followers pay him homage. He could only tempt and torment a person through that person's mind. In Scot's view, the only people who see the Devil like this are melancholics, who are deluding themselves. Among the authorities he cites is the canon law known as Canon Episcopi. Inserted into the body of canon law in the twelfth century, it denounced as illusory some women's belief that

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they fly at night with a goddesslike woman, who calls herself Herodias, Diana, or Noctiluca.

Scot is not simply an older skeptic, however; he shows himself to be a modern skeptic in some ways. He advocates as a godly pursuit an approximation of what we call science; this he calls natural magic. He sees this as a pious pursuit, for from it, he proclaims, we can learn God's laws of nature. Scot differs in this from skeptics of his time like Agrippa Von Nettesheim. For them, the uncertainties of the world and the follies of man show that we should put our faith in God. In fact, Agrippa's last book is entitled *The Vanities of the Arts and Sciences*.

Scot's attitude more closely resembles that of Paracelsus, who also advocated the search for earthly knowledge. On the other hand, Paracelsus was an occultist, believer in magic, and mad visionary. He claimed that all manner of supernatural beings existed, including creatures of air, fire, and water, and ghosts. And he claimed as well that a man could survive by burying his feet in the soil, and soaking up nutrients like a plant.

Scot shows himself a modern skeptic in another way: he often doubts on the basis of experience as well as of logic and authorities. He disbelieves in many of the "virtues" claimed for gems, such as their healing properties (for example, that agate cures the scorpion's bite). He does this even though he has no theological reason. While he believes the blood of a murdered man will bleed in the presence of his enemy, he bases his conviction on the experience of a friend. Although not quite modern science, this is a step up from depending on ancient authorities.

Magic tricks fascinate Scot. He knows tricks using a bodkin, or small dagger, and tricks that use the tester and groat, coins of the realm. He knows tricks with special knives that can appear to slice through your head, and one with a special table on which someone can appear beheaded. He describes these and other tricks with boundless enthusiasm.

Yet, like many modern magicians, and modern skeptics, Scot fears these tricks: in a rogue's hands they convince the credulous of miracles. About images seen in a glass ball, Scot claims to know twelve ways to obtain one. He shows that much witchcraft, both black and white, is based on trickery, which he calls "cozening." For example, would-be witches often hide their voices and practice sleight of hand. Also, he enumerates five reasons milk will fail to churn, an issue that featured frequently in witch trials. These include the dishonesty of the milkmaid. Thus, like many modern magicians, Scot takes an active part in informing the public.

Before ending, I would like to go from a scientific point to a bibliographic one. If you ever decide to read Scot, be aware that a 1665 edition added a whole section on conjuring fairies, demons, and other spirits. This continues Scot's last section but, unlike Scot, its anonymous author presents the subject very unskeptically. Scot's book, in a way, cried out for interpolation, for at its end Scot promised a further section, never published in his lifetime. While this section has a worth all its own, skeptical readers should beware.

In sum, Scot's *Discovery of Witchcraft* straddles modern skepticism and an older variety—something that people should remember when they quote and cite him today.

Editor's note: A modern edition of Scot's *Discoverie of Witchcraft* was reprinted by Dover Publications in 1972. □

Dowsing Defined

Dowsing: "the use of a forked twig, brass rod, or other object to locate and obtain sources of money from individuals who believe that sources of water can be located and obtained through the use of a forked twig, brass rod, or other object" (Henry Beard and Roy McKie, *Gardening: A Gardener's Dictionary* [New York: Workman, 1982], p. 29). □

Time to Renew? Time to Join?

Check the date printed on the mailing label on this issue. If you are looking into a past-life, then it must be time to renew your membership in NCAS.

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The Last Word

An Eye on the Eye

By Lys Ann Shore

At the turn of a year or a decade, whether on the objective calendar that hangs by my desk or on my personal life calendar, I like to look back over where the world and I have been, and muse over where we may be heading. Recently I've been doing just that with the *Skeptical Eye*. When I became newsletter editor (somewhat reluctantly and with trepidation) a year ago, circumstances indicated some changes. Both the previous editor and designer had had to relinquish those tasks, due to the burden of other commitments. As editor, I hoped to see NCAS members contributing newsletter articles that would reflect the wealth of intelligence, education, and ingenuity that characterize this group. NCAS President Chip Denman, who took over the design of the newsletter, was eager to explore the graphic potential of desktop publishing and to exercise his considerable talent and creativity.

Now, a year later, we see the results:

▶ A continuing flow of well-researched, interestingly written, and highly relevant articles that has allowed us to increase the size of each issue from 12 to 16 pages (beginning with the Summer 1991 issue). Also, we have begun printing the newsletter on recycled paper.

▶ The resumption of the valuable "Skeptic's Response" column (beginning with the Winter 1990/91 issue), providing an in-depth and incisive treatment of key issues in pseudoscience.

▶ Regular reports from outside the Beltway, in the entertaining and informative "Remote Viewing" column by the *Eye's* Tidewater bureau chief, Elena M. Watson.

▶ Original research on topical issues--most notably, Seán O'Neill's memorable report on mass hysteria and the

Fairfax school faintings (Summer 1991); also, Walter Rowe's investigation of a Washington-area case involving a "psychic detective" (Fall 1991); and Elena Watson's report on the "New Age vault" in Williamsburg, Virginia, elsewhere in this issue.

To the writers mentioned here, and to all the other NCAS members who have contributed articles over the past year, my thanks: you have made the *Eye* a newsletter we can all be proud of. Thanks also to those who work behind the scenes: Grace Denman, NCAS treasurer, who reads the final proofs of each issue with an eagle eye (and pays the printer's bills); and Steve Shore, reference librarian and resident guru (every skeptic should have one).

To everyone else reading this issue who has thought of putting pen to paper, or fingers to keyboard, to write an article or letter for the *Skeptical Eye*: we look forward to hearing from you soon.

By contributing time, energy, and talent to writing and producing this newsletter, NCAS members have given the skeptical movement a distinctive and independent voice in the national capital area and the mid-Atlantic region. □

Keep Your Eye Open

Send your articles, letters, and original artwork for future publication in the *Skeptical Eye*. Contributions should be short (500-1000 words maximum, or two to four double-spaced pages) and typed, not handwritten. If you use a computer, please send hard copy along with your floppy disk (5.25" or 3.5", WordPerfect or ASCII). Please be sure to include your name, address, and telephone number. Send all contributions to *Skeptical Eye*, 8006 Valley Street, Silver Spring, MD 20910.

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