

LIGHTNING DATA CENTER

June 13, 2003

Minutes

St. Anthony Hospital

Denver, CO

www.stanthonyldc.org

Quote of the Month:

"I loved his lightning transitions of thought, his ability to detect pretentiousness and bombast..."

Sid Perelman speaking of Grouch Marx In Stefan Kanfer's book, Groucho, Vintage Books, 2001

1. Meeting began at 11:30 am and adjourned at 1:30 pm.
2. Members present: Barron, Benson, Bradley, Burrows, Cherington, Collier, Daale, Foley, Gift, Gil, Hodge, Keen, Krier, Lines, McDonough, Middleton, Morrissey, Olsen, Sanders, Staelin, Stewart, Wachtel, Wallace, Wallin, Yarnell.
3. I brought the following articles (abstracted in part here):

- a. Taylor RP. Order in Pollock's Chaos. Sci Amer. Dec. 2002;116-121.

"Computer analysis is helping to explain the appeal of Jackson Pollock's paintings. The artist's famous drips and swirls create fractal patterns, similar to those formed in nature by trees, clouds and coastlines...Fractal geometry developed from Benoit Mandelbrot's studies of complexity in the 1960s and 1970s. Mandelbrot coined the term 'fractal' from the Latin fractus [broken]...Fractals display self-similarity-that is, they have a similar appearance at any magnification...Most of nature's patterns obey statistical self-similarity, and so do Pollock's paintings."

- b. Cherington M, Olson S, Yarnell PR. Lightning and Lichtenberg figures. Injury 2003;34:367-371.

"The Lichtenberg figure (LF) also known as a ferning pattern is pathognomonic sign, found only in victims of lightning strikes...LFs are transient skin patterns...We report two lightning-strike patients who presented with classical LFs...In addition, to LFs in patients, we present examples of these complex fractal patterns that occur in nature (on the golf course) and in the laboratory (wood surface, on computer screen, and on X-ray film)."

- c. Montalto M, Ancarani F, Manna R, Gasbarrini G. Globus pharyngis: was it a stroke of lightning? Am J Gastroentero 2003;98:938.

"..a 51 yr-old woman..was admitted to our hospital for the recurrent sensation of 'something stuck in the throat,' beginning 10 yr earlier...She complained of frequent headaches..and was depressed. She experienced one significant life incident before the appearance of the symptoms: she was struck on the head by lightning when she was 13 yr old...Given electrical current's affinity for nerve fibers and blood vessels, it is not surprising that neurological, psychiatric, and neuropsychological sequelae...are abundant in victims of lightning injury.

5. Today, we inaugurate a new feature to our round table: topics sent to us by our out of state or out of country corresponding members. These topics are introduced here for our members to consider.

- a. Professor Earle Williams of MIT. Topic: Similarity of ELF spectra of the Earth's Schumann resonances and the human EEG (brain wave) frequency spectra. Earle points out that the Schumann resonances are maintained by lightning and have bathed all organisms on earth for millennia with the same frequency.

This is a most interesting subject. I suggest our members read a related article by Neil Cherry of New Zealand: "Schumann Resonances, a plausible biophysical mechanism for the human health effects of Solar/Geomagnetic Activity. It can be found on the internet: <http://www.centroenergea.it/Espectral/schumann.pdf>

b. Dr. James I. Moss of University of Florida Department of Medicine states that there are clinical similarities between some lightning complications and that seen in Gulf War syndrome. He raises the question of "post strike inflammation."

c. Professor Mikhail Shmatov of the Ioffe Institute in St. Petersburg, Russia reports that his improved model of ball lightning will soon be published. He has shown that the atmospheric pressure can stabilize it using quantitative estimates. He is interested in pursuing experiments measuring the electric fields corresponding to rising of human hair and the associated corona discharge.

7. Mike Foley told us that he watched a local TV reporter speak on lightning safety. The reporter gave advice that conflicted with the Lightning Safety Group's recommendations. The members suggested that we form a committee to disseminate lightning safety recommendations to appropriate media outlets. The committee will also bring to the attention of the media information that might improve their reports. Bob Wallace agreed that St. Anthony Hospital would Support LDC's efforts in this regard.

The committee was established: Mike Foley (Chairman), Gene Lines, Greg Stewart, and Bob Wallace.

8. Howard Wachtel was our speaker today. His topic: "Can Lightning Kill Without Leaving a Trace?" Howard's presentation was outstanding. He presented his provocative hypotheses. I cannot give a verbatim account his talk, but will give a copy from my written notes:

- a. Hypotheses: Low intensity atmospheric current can produce ventricular fibrillation (VF) or cardiac arrest without leaving a skin mark or even producing a visible lightning flash.
- b. The usual criteria for diagnosing cardiac arrest second to lightning include burns, ruptured tympanic membranes; eyewitness accounts; associated physical damage (e.g. in trees, ground).
- c. Threshold excitation for nerve and muscle cells is in order of milliamperes.
- d. How much current is needed to produce VF? 100 ma. The "cannot let go current" is 10 ma.
- e. 60 Hz is a most lethal frequency. Less at that frequency is dangerous. In VF muscle contracts in uncoordinated fashion.
- f. Temperature rise with currents enough to cause VF might not be enough to cause burns (therefore, no trace).
- g. Are there such currents? Is there invisible lightning? Sub-luminous current can cause VF if it happens at the vulnerable part of the cardiac cycle.
- h. George Hodge commented that NLDN can detect currents as low as 8 kiloamperes.
- i. The Empire State Building has been struck during storms at times without visible flashes.

9. Pam Daale described a mysterious phenomenon in the attic of her house during thunderstorms. She asked if the members might know the solution. During storms, there is a "crackling" above her ceiling simultaneous with lightning strikes. Mike Foley, Gene Lines, Bob Gift, and George Hodge raised questions about the grounding, telephone connections, something in the attic acting like an antenna, etc. George wondered if thermal ply insulation covered with aluminum foil could act like a large capacitor. Pam will have the attic checked and let us know when the problem is solved.

10. Many members have requested copies of our Roster that lists phone numbers and emails. They can communicate more easily with other members. We intend to distribute the roster if requested by the August meeting. If anyone wants their information "blinded" or removed please notify Sue Wiggins by the end of July 2003.

11. These minutes do not represent official positions of LDC members. They simply reflect the comments of the members.

12. Next meeting: Friday July 11, 2003 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital. There will be two presentations of about 30 minutes each.

A. George Hodge's topic: Positive lightning strokes: A case study.

B. Bob Wallace and Vicki Middleton will speak about St. Anthony Hospital's proposed International Conference on Lightning Matters.

Respectfully submitted,

Michael Cherington, MD