

Quote of the Month:

“The general theory of relativity is a complicated business. It is said that even by 1919 there were only two people who fully understood it: Einstein and Eddington. (This, let us hasten to add, is based on a quip of Eddington’s.) Even to this day, theorists are not completely united about what follows from Einstein’s theory, while in 1919 there was still substantial argument about what exactly should be expected. It was agreed, however, that according to both Newton and Einstein’s theories, a strong gravitational field should have an effect on light rays, but that the Einsteinian effect should be greater than the Newtonian effect... The gravitational field of the earth is far too small to have a measurable effect on light, but the sun’s field is much greater. The light coming from the stars should be bent as the rays pass through the sun’s gravitational field.”

Harry Collins and Trevor Pinch, 1998 in The Golem

1. Meeting began at 11:30 am and adjourned at 1:35 pm.
 2. Members present: Cherington, Clark, Collier, Foley, Gray, Hodge, Kamin, Kithil, Langford, Lines, Sellen, Swanson, Toler, H Wachtel.
 3. I brought the following articles (abstracted in part) to the meeting: {I call your attention to the following features:
 - In the first article, the patient suffered serious eye damage even though he was asleep during the lightning strike.
 - In the second article, the lightning strike is reported to have occurred in the month of January.}
- a. Espaillet A, Janigian R, To K. Cataracts, bilateral macular holes and rhegmatogenous retinal detachment induced by lightning. *Am J Ophthal* 1999;127:216-7.

“A 30 year old healthy man was asleep in a tent when his camp site was struck by lightning. The patient awoke with decreased vision in both eyes...Physical examination was unremarkable except for bilateral corneal abrasions for which he was treated with topical antibiotic ointment...One week after the lightning injury.. slit-lamp examination disclosed bilateral midperipheral anterior subcapsular cataracts with posterior subcapsular changes...This is a case of bilateral cataracts, posterior vitreous detachments, macular holes, and a unilateral retinal detachment associated with lightning.”
 - b. Yorkshire Branch, Annual Meeting. *Brit Med J* 1875;2:59.

This article was presented 124 years ago at the Medical School at Leeds.

“Mr. Ikin exhibited a case of temporary loss of vision, partial paralysis, etc., from lightning, in a staff-sargeant aged 48. During a storm of thunder and lightning in January, he was in a room, and, immediate after a vivid flash, he felt ‘dazed’, with violent pain down the left side of his head and arm and said that he was blind of his left eye; during the night he became delirious, and had all the symptoms of an apoplectic seizure. Under treatment, he was better in a week or ten days, but was ailing for two months. The sight of his left eye was now as good as ever, but he had not entirely recovered the nervous shock.”

I distributed a.) photographs taken by Dr. Elisabeth Gourbiere and Rich Kithil at the June LDC meeting and dinner; b.) brochures on fire and electrical safety that Dr. Gourbiere sent to us; and c.) an article from the Denver Post on noctilucent ice clouds that were witnessed by Rich Keen. These silver-blue clouds are rare at this latitude. Rich, according to the article, had seen these clouds before in Alaska.

4. Rich Kithil has been performing experiments on lightning rods at the High Altitude Lightning Observatory Center of Colorado University. Rich brought the types of lightning rods that are stationed at the Center. These rods have different shapes: pointed (Benjamin Franklin type), flat (King George III type), bullet shaped, and round. Rich will make visual inspections to see how often a particular type is struck. There is a similar study being performed at New Mexico Tech where the flat and the sharp rods are being inspected. So far, the flat head rod has been struck 4 times more often than the pointed one.
5. Mike Foley brought an article from the Denver Post (7-3-99) that describes a new Holy Family High School built in Broomfield with cross towers that are 72 feet above the ground and double as a “lightning rod.” Rich Kithil and Carl Swanson commented about the danger to “bell ringers” in the past. Rich stated that in Europe over a 30 year period there were 70 casualties to church bell ringers.

Mike reported that he and Dr. Thomas Wachtel spoke on lightning casualties and damage at the Colorado Coroners Association Annual Meeting in Dillon, Colorado last month.

6. George Hodge reported that he taught a class on lightning damage to the State Farm Adjusters Association. His lecture included a section on “red flags” to look for in fraudulent claims.
7. Ken Langford announced that he can now be reached via email:
Kenneth.Langford@worldnet.att.net
Ken reported that on Friday he visited Elitch Garden Amusement Park in Denver as a storm approached from the west. The amusement rides were stopped on 2 occasions because of the threat of lightning. He estimated that lightning was 5

miles away (flash to bang method) at the time.

8. Steve Clark told us that he has changed jobs. He now works for CR Evans Associates.
9. Brian Gray commented on the Lightning Density charts (NLDN data) that Rich Kithil brought. Boulder receives less lightning than Nederland, the foothill mountain town, just to the west. Brian has been working as a meteorological consultant to a high school in Estes Park. They have been concerned about the threat of lightning during outdoor activities. Brian provides them with weather warning information.
10. Gene Lines has been called this summer because of several lightning strikes to houses in the Evergreen area. He has been impressed with the phenomena that several houses were damaged by single lightning strikes. Currents damaged well pumps and entered the home via water pipes, not through power lines or power sources. Appliances that were operating (air conditioning units, TVs, etc.) were damaged while others were not. George Hodge and Gene remarked that the soil conditions in Evergreen are characterized by high iron content, and (this year) high moisture content.
11. Jeff Sellen has contacted NFPA regarding minimum lightning protection requirements for houses and other structures. He will report back regarding these communications.
12. Carl Swanson and Ken Langford provided us with two remarkable slide presentations on Lichtenberg figures. Carl showed a pattern on the 9th Hole of the Aurora Hills Golf Course from a lightning strike on June 10, 1999 at 7:14 pm. Both a nearby tree and the flag pole were struck. The flag pole is made of fiberglass.

Ken showed slides of Lichtenberg patterns in different places including a river valley. Ken's definition of a Lichtenberg figure is that it is a dendritic pattern caused by electricity.

13. Howard Wachtel just returned from a meeting of the Society for Bioelectricity. There was a session on the possible health hazards from exposure to EMF. He stated that the evidence for this is sparse. The accumulated data does not support the idea that EMF cause cancer. He did state that the issue is complicated by other factors such as: legal matters, phobic concerns akin to the fear of radiation, etc.

Howard also commented on the value of magnets to treat pain. He pointed out that the evidence is weak, especially for the application of static magnets. Static magnets do not induce currents, unless there is a high gradient magnetic field. There is some evidence that pulse magnetic fields can induce currents that may

have some physiologic effects.

14. These minutes reflect the comments of members present and do not reflect positions of LDC.
15. Next meeting: 11:30 am Friday, August 13, 1999 in the Main Auditorium of St. Anthony Central Hospital.

Respectfully submitted,

Michael Cherington, MD
Chair, Scientific Committee, LDC