

Lightning Data Center
Minutes
St. Anthony Hospital
October 12, 2001

Quote of the Month:

"Not everyone knows that in the 1740s Benjamin Franklin developed a musical instrument consisting of a set of thirty-five circular glasses arranged on a central rod, tuned to play three octaves...The inventor was Gluck, who once played a concerto on twenty-six drinking glasses and claimed he could play on them anything that could be performed by violin or harpsichord. Franklin first heard them in London and went on to refine the instrument."

Phil G. Goulding, Classical Music, 1992

1. Meeting began at 11:30 am and adjourned at 1:30 pm.
2. Members present: Bergschneider, Burrows, Cherington, Collier, Foley, Glancy, Kozak, Gray, Mains, McDonough, Molen, Olson, Rackley, Russon, Staelin, Wachtel, Wallace, Wallin, Weaver, Yarnell, Zajac.
3. I brought the following article from the literature (abstracted in part here):

Cherington M, Kurtzman R, Krider EP, Yarnell PR. Mountain medical mystery; unwitnessed death of a healthy young man, caused by lightning. *Am J Forens Med Path* 2001;22:296-298.

"A healthy 20-year-old man failed to return home after a jog in the Colorado mountains. His lifeless body was found the next day on an exposed mountain slope. The differential diagnosis in such mysterious, unwitnessed mountain deaths includes cardiac arrhythmia, cerebral hemorrhage, pulmonary embolism, seizures, trauma, high-altitude sickness, and hypothermia. The cause of death in this case was established on postmortem examination. The findings of ruptured tympanic membranes and a melted shoe established this as a case of lightning strike fatality. The National Lightning Detection Network can be a valuable resource in investigators by providing information on the location and date of lightning strikes in the vicinity of the victim."

4. I read an email sent by Elisabeth Gourbiere (regarding the terrorist attack of September 11) to "all the Lightning Center American Members - my deepest sympathy and complete solidarity."

Elisabeth also sent the current issue of *Energies Sante* (*Gaz de France - Electricite de France*).

5. Phil Yarnell presented a case of a woman who was struck by ball lightning while she was on a cordless phone. The sparks emanated from the base that was a few feet away.
6. Gil McDonough recently suggested that nurses attending LDC meetings receive CEU credit. For a long time physicians have been earning CME credits for attending our meetings. Sue Wiggins has taken Gil's suggestion to the Hospital Education Committee. Nurses can now earn credits for attending LDC meetings.
7. Mike Foley spoke about a lightning protection system called the charge transfer system (CTS). CTS resembles an umbrella as opposed to the Franklin rod. There has been some controversy related to this system. Mike will report back to us soon after actions are taken by NFPA.
8. Today's speakers: John Weaver, research meteorologist with NOAA specializing in the development of new techniques to improve warning and short range forecast accuracy; and Bard Zajac, Colorado State University- Cooperative Institute for Research in the Atmosphere.

Their topic: Lightning as an Element of the Thunderstorm's Lifecycle.

John and Bard gave a superb presentation. I cannot do justice to their talk by trying to summarize it here. As in the past, I will write from my notes that were taken in the dark auditorium.

Ice crystals play an important role in the formation of lightning. Graupel are small particles that are important for the electrification of clouds. During upward drafts, graupel collides with rising ice crystals. When graupel falls, there is a balance between gravity and particle size. Graupel -- negative charges -- on the bottom of the cloud. The anvil part of cloud is the source of powerful lightning charges (due in part to a) the large distance to ground; and b) positive charges emanate from the anvil).

Artificial clouds can be produced in chambers. At ice crystal stage there is no electrification. When graupel forms, electrical charges appear.

9. Next meeting: Friday, November 9, 2001 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital.

Speaker: Sheryl Olson, RN, BSN

Topic: Lightning and Aircraft: Flight Crew Air and Scene Safety.

Respectfully submitted,

Michael Cherington, MD