

Lightning Data Center
St. Anthony Central Hospital
May 11, 2001
Minutes

Quote of the Month:

"Benjamin Rush, Franklin's greatest admirer among Philadelphians, and a physician, attended his friend during the final days. 'The evening of his life was marked by the same activity of his moral and intellectual powers which distinguished its meridian,' Rush noted."

H.W. Brands in *The First American - The Life and Times of Benjamin Franklin*, Doubleday, 2000.

1. The meeting began at 11:30 am and adjourned at 1:15 pm.
2. Members present: Cherington, Collier, Dick, Glancy, Foley, Keen, Langford, McDonough, Molen, Mouchantat, Ryan, Weaver, Winograd.

3. I brought the following articles (abstracted here in part):

a) Pratley RE. A shocking case of diabetic neuropathy. *Lancet* 2000;355:1560.

"A man aged 43 years came to the diabetes clinic....His only complaint was of paresthesia in his hands and feet that he described as 'kind of like an electric shock'. He worried that these symptoms might be an early sign of diabetic nerve damage...he said "After all, I only get the tingling when I'm taking a shower. When I reach up and adjust the shower head, I feel it in my hand--and it feels like its coming out my feet.' 'You know, I've felt the same thing' volunteered his non-diabetic wife. The patient and his wife were immediately referred to a specialist -- an electrician--who found that the grounding of the electrical system in their house was dangerously faulty. The defect was promptly repaired and their symptoms completely resolved."

b.) Yarnell PR, Heit J, Hackett PH. High-altitude cerebral edema (HACE):
The Denver /Front range experience. *Semin Neurol* 2000;20:209-217.

HACE is a potentially fatal metabolic encephalopathy associated with a time-dependent exposure to the hypobaric hypoxia of altitude. Symptoms commonly are headache, ataxia and confusion progressing to stupor and coma....it is responsive to expeditious treatment with a successful outcome.

c.) Cherington M. Hazards of bicycling: from handlebars to lightning. *Semin Neurol* 2000;20:247-253

4. Guest speaker John Weaver, research meteorologist with NOAA specializing in the development of new techniques to improve warning and short range forecast accuracy. His topic: "Lightning as an Element of Storm Morphology."

John gave a superb presentation. I am unable to give justice to his presentation in these minutes. As has been my custom, I will share a few notes I took during his lecture.

Thunderstorms begin in cumulus clouds that always contain small water droplets.

Combination of water droplets and dust begin to freeze at -10 degrees Celsius.

Pure water droplets freeze at - 40 degrees Celsius. During updrafts and other events crystal particles and rime take on electrical charges (positive and negative, respectively) and separate in the cloud. Rime with a water coating is the most effective reflector for radar detection. {Rime = granular deposit of ice formed in clouds.}

5. Rich Keen brought samples of fulgarites found in New Hampshire at the base of utility pole. Rich defined fulgarites as "volcanic glass" formed when lightning hits sand or soil.

6. These minutes reflect the comments of those present and do not represent official positions of LDC.

7. Next meeting will be held at 11:30 am on Friday, June 8, 2001 in the Main Auditorium of St. Anthony Central Hospital.

Respectfully submitted,

Michael Cherington, MD
Chair, Scientific Committee, LDC