Thus a second and more plausible hypothesis regarding the boy's behavior would attribute the temporary "acute mania" to the injury in the region of Broca's area. Such an injury would especially account for his linguistic disabilities. The distance of Burghersdorp from Grahamstown, and the fact that there is no mention of the baboon incident in the hospital records, would likewise seem to discount the existence of a "feral" period in Lucas' life.

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FREEZING OF HOT AND COLD WATER

PROFESSOR THOMPSON[1] and his reply[2] to Professors Sanford, Lyon and Wakeham[3] stimulated an interesting discussion on the basis for the belief that hot water freezes more quickly than cold. Additional variables have occurred to me which I believe would have a considerable bearing on the explanation of this problem, in addition to the thermal factors mentioned in the above articles.

The freezing rates of liquids depend not only on temperature and rates of heat transfer and mass, but also on the freezing-points of the liquids.

Heating certain samples of water expels dissolved gases, decomposes bicarbonates, precipitates compounds whose solubilities decrease with increase in temperature, etc. This lowers the concentration of dissolved matter, and consequently raises the freezing-point.

Then, if the external temperature is between the freezing-points of the heated and unheated samples, the "hot" water will not only freeze first, but will be the only one to freeze, regardless of all other circumstances. These conditions could have been fulfilled unwittingly many times by kettles of water (alike or unlike) and by hot and cold water in pipes.

Many of us have observed a similar phenomenon in opening a bottle of carbonated beverage which had been outdoors in freezing weather. The liquid is not frozen and doesn't freeze on shaking (probably not supercooled), yet when the cap is removed, the liquid may suddenly freeze solid or become mushy with ice crystals. The temperature of the liquid was between the freezing-points of the liquid with and without the CO_2 lost by removing the cap.

Of course, even if the external temperature should be below the freezing-points of both the heated and unheated samples, occasional combinations of circumstances still might permit the heated sample to freeze first.

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I READ with great interest the letters in SCIENCE of April 19 under the title, "Roger Bacon Was Mistaken," and also Professor Thompson's recent letter. Whether it was Roger or Francis, here was a challenge:

> The belief that hot water does freeze more quickly seems to be firmly ingrained in the public mind so that many persons believe if hot water is placed in the ice-cube compartment of an electric refrigerator it will freeze faster than if cold water is placed therein. Perhaps it will if a large portion of it is lost through evaporation.

I went so far as to try the experiment myself. I report my results without explanation, not in order to confuse but to illustrate how seldom we know all about any experiment. I reserve my explanation so as to present this picture-puzzle. What is wrong with it?

A liter of water at 0° C was placed in the usual aluminum tray of the refrigerator and left to freeze without interruption for 60 minutes. The water left unfrozen was then poured out and measured. The volume was 720 cc. Apparently 280 cc of water had been frozen at 0°.

Then I heated to boiling another liter of water, put it into the same aluminum tray and into the same refrigerator compartment and left it also undisturbed for 60 minutes. Then I removed it and found only about 600 cc of liquid water and 400 grams of ice, which I thawed out and measured. In other words, the hot water had frozen faster.

Was Bacon really mistaken?

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SCIENTIFIC BOOKS

THE HYPOTHALAMUS

The Hypothalamus and Central Levels of Autonomic Function. Research Publications of the Association for Research in Nervous and Mental Disease, vol 20. Edited by JOHN F. FULTON, S. WALTER RANSON and ANGUS M. FRANTZ. xxx + 980 pp., 35 tables, 319 illustrations. Baltimore: Williams and Wilkins Company. $10.00.

THE pituitary body, or hypophysis, has been termed the master gland of internal secretion. It is attached to a small eminence at the base of the brain, and these two structures comprise the hypothalamus. In the brain of a fish or a salamander this part may be much more than a thirtieth of the total bulk of the brain, but in a man it is only one tenth of that. This is

[1] SCIENCE, March 29.
[2] SCIENCE, May 24.
[3] SCIENCE, April 19.