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COVER: Djed-Hapi, mummified around 750 B.C., is part of a new show at the University of Pennsylvania Museum. "The Egyptian Mummy: Secrets and Science" demonstrates how research on mummies is revealing much about ancient Egyptian life and about the practice of mummification. See p. 362. (Photo: The University Museum, the University of Pennsylvania)

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LETTERS

Cancer-aging query

In "Cancer-aging link: No fault of repair" (SN: 10/11/80, p. 232) Richard B. Setlow estimates that a normal skin cell can repair damage due to ultraviolet light at a rate of 80,000 dimers per hour. He also says that because the Texas sun at noon can cause 50,000 dimers per cell per hour, skin cells often operate close to their maximal repair rate. What happens if the ultraviolet light is much stronger than strong sunlight? Is the repair system overwhelmed? Setlow calculates that normal skin cell repair ability decreases the cancer incidence from ultraviolet radiation by a factor of 10,000.

Tanning salons, where one hour of solar strength ultraviolet light is concentrated into a few minutes, are springing up around the nation. Could this lead to skin cancer in many users in five to 15 years?

Thomas Hagelthorn
Dearborn, Mich.

Setlow responds

At high ultraviolet levels the normal repair ability is not overwhelmed, it just lags a little behind the production of dimers, but since few of us stay out in the light, especially very strong sunlight, for long periods of time, most of the damage is almost always repaired. It is just the slight changes in the amount that is not repaired that may be thought of as giving rise to the initiating events in skin cancer. As far as one can tell, skin cancer does not result from single exposures, but seems to be the accumulative effect of many.

Insofar as tanning salons irradiate the people with the same wavelengths as in sunlight, they are probably carcinogenic. Estimates of risk from such devices cannot be made well unless there are estimates of their light output and the number of exposures per year, and the number of years for which such devices are used by an individual.

Since both the experimental and epidemiological evidence connecting UVB with human skin cancer is one of the strongest relating an environmental agent and cancer (there are approximately 400,000 new skin cancer cases per year in the United States), I believe that the indiscriminate use of tanning salons should be banned just as the indiscriminate use of cosmetics containing chemical carcinogens should be banned.

Richard B. Setlow
Upton, N.Y.

Mercury-related mishap

The article "Mercury exposure: A subtle test" (SN: 11/8/80, p. 296) rekindled memory of another mercury-related mishap in which your readers may be interested.

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A British medical journal has reported a case involving a youngster who swallowed a small battery, much like those used to power many watches. Naturally, his anxious parents hurried him to the doctor for examination. The physician, concerned about the contents of the battery, initiated a simple experiment. Incorporating his knowledge of the alkaline content of stomach fluid and some basic laboratory materials, the doctor simulated the conditions under which the ingested battery was resting. Incredibly enough, in about five hours the battery which he was testing began to disintegrate. The child was immediately admitted to the hospital for emergency abdominal surgery.

As the lead surgeon grasped the badly corroded battery, it crumbled under the mere pressure of his forceps. Luckily, however, the near tragedy was averted thanks to the professional skills of all the medical personnel involved, especially the family practitioner. Experts later said that if the battery had remained in the child's stomach for a longer time period, a fatal dose of mercury would have eventually been absorbed into his system!

Mark A. Chopper
Baltimore, Md.

Inconsistent coordinates

Although I have nothing but praise for SCIENCE NEWS, I would like to suggest you include celestial coordinates when reporting astronomical information, such as the item of a faint "new" member of our local group of galaxies LGS-3 (SN: 10/25/80, p. 263).

Those of your readers interested, as myself, can then locate the object on their star charts, an added benefit of reading SCIENCE NEWS.

M-33 is catalogued as 2.4 million light years away, four more distant than LGS-3 appears to be from the Milky Way. Why then should this new discovery be a part of that system?

Walter A. Singer
Keene, N.H.

(We have not been consistent in printing the coordinates of astronomical objects we mention. But if readers find the coordinates helpful, we can endeavor to print them consistently except for very well known objects that most people can quickly find. It was objected in the past that the coordinates confused more people [those who did not know how to read them] than they helped.)

The suggestion that LGS-3 may belong to the M33 system comes up because that system is the closest other one. Depending on the mass of M33, M33's gravitational field may be significantly binding at a much greater distance from M33 than the Milky Way's is from the Milky Way.

—Ed.)

Correction: In the article "Chemical clue to obesity found" (SN: 11/8/80, p. 295), as a function of the reduction of sodium-pump units and defect in ATPase activity there was an increase in intracellular sodium of 35 percent.

Correction: The name of researcher Anita V. Kak was misspelled in the article "How fast can you read this?" (SN: 11/8/80, p. 296).

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