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COVER: Current interest in large and sudden changes during evolution has focused interest on developmental biology. Data being reexamined include the case of the tropical land frog that hatches from its egg not as a larva, but as a tiny adult. Photos show embryos from 24 days before hatching to the newly hatched frog. Magnification: x12. See p. 12. (Photos: W.G. Lynn, *Contributions to Embryology*, Carnegie Institution of Washington, 1942)

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LETTERS

Invalid spinal manipulation?

We were appalled that SCIENCE NEWS would carry an article such as "Spine Manipulation for Low Back Pain" (SN: 5/16/81, p. 311), which had been written on the results of tests conducted by, of all groups, allopaths.

Much clinical research has been conducted on this same area of the spine by physicians who have made an intensive life study of the spinal column and the nervous system. This clinical research has been repeatedly documented.

The manipulation technique you describe has little similarity to the precise adjusting techniques used by the modern chiropractic physician. Without proper analysis of the vertebrae involved and specific corrective techniques of adjusting, the described general manipulation would give only accidentally good (or bad) results.

To base the effectiveness of properly performed spinal manipulation on the results obtained from this type of study done by medical doctors is truly "stacking the deck" and decidedly unscientific. You might just as well ask a group of chiropractic physicians to research a new surgical technique. The results would be as valid.

Dr. Margarette B. Hines
Dr. Robert E. Hines
Chiropractic Physicians
Zephyrhills, Fla.

A man of few words

Your excellent coverage of the New Orleans symposium honoring P. A. M. Dirac (SN: 6/20/81, pp. 394, 396, 397) brings to mind an anecdote related to me years ago by Prof. Ernest Pollard, who directed my Ph.D. work in nuclear physics at Yale during the late 1930s. Pollard was a graduate of Cambridge and studied under Lord Rutherford and James Chadwick.

It seemed that after one of Dirac's rare seminar lectures to the graduate students at Cambridge the moderator stepped to the podium and said Prof. Dirac would be happy to entertain questions. Immediately a hand went up in the audience and the individual stated in a loud voice: "Prof. Dirac, I must say I don't understand Equation 4."

Everyone sat quietly anticipating a response from the eminent man, but none came. Dirac remained motionless in his chair staring straight ahead. After a full minute had passed, the moderator became noticeably nervous and inquired, "Prof. Dirac, would you care to answer the gentleman's question?"

"That was no question," replied Dirac dryly. "That was a simple statement of fact."

This serves to confirm the point in your coverage that P. A. M. Dirac was and still is a man of few words.

William L. Davidson
Dunedin, Fla.

Let the hobbyist beware

Your article "Beware the supplies of arts and crafts" (SN: 5/23/81, p. 325) brought to mind another hazard to the hobbyist that has taken its toll on a member of my family.

My mother-in-law is an enamelist. At age 50 she was diagnosed as having cataracts in both eyes, far more severe in the right than left. The right eye was recently operated on for the cataract condition. On investigation, it turned out that the probable cause of the cataracts (not common at her age) was the infrared exposure she suffered from her enamel kiln.

The right eye was more affected because she tended to approach the kiln right side forward. The condition has been stable since she stopped enameling professionally a couple of years ago.

Her ophthalmologist told her that cataract is quite common among glass blowers who are exposed to the heat from molten glass as a matter of course. Enamel kilns operate at the same temperature in order to melt the glass that makes up the enamel art work.

The danger seems to be quite remote for the occasional hobbyist, but it is quite real for the more serious enamel artist. The solution: welders goggles when placing and removing objects from the kiln.

By the way, I am very pleased with your magazine. My present subscription runs until November of 1982, and you can rely on my resubscribing upon receipt of the first notice.

Anthony Stein
New York, N.Y.

The coast that wasn't

In your article "Sea Seeps: It's a gas" (SN: 6/6/81, p. 359) you state "...above the East Pacific Rise near latitude 20 degrees South, off the coast of Bolivia." Bolivia has not had a sea coast since 1879 when Chile took the province of Atacama (now the province of Antofogasta) in the War of the Pacific. The original Bolivian sea coast extended from 22°S to 26°S.

Anthony F. Amos
Port Aransas, Tex.

It seems appropriate that the article "Sea seeps: It's a gas" carries a reference to "...the coast of Bolivia."

Such glitches add to my enjoyment of your excellent magazine.

Curtis E. McCann
Corvallis, Ore.

It's official (and pronounceable)

I thoroughly enjoyed your well-written article "Wy-oo-lee Rebound" by Linda Garmon (SN: 6/6/81, p. 365).

Possibly Guayule's official name, which was inadvertently omitted in the article, may be easier to pronounce, *Parthenium argentatum*.

Bob Burns
Los Angeles, Calif.

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