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THIS WEEK

RESEARCH NOTES

ARTICLES

DEPARTMENTS

COVER: These decorative wood engravings were bored into American elm by the European elm bark beetle, which is the major carrier of Dutch elm disease. This insect is one of several bark beetle species that were responsible for killing millions of trees in North America last year. See p. 314. (Photo courtesy of Mark A. Philbrick/Brigham Young Univ.)

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LETTERS

Funding research: No tale

Letter writer Rick White tells a fine tale (SN: 3/10/82, p. 243), but his besotted boar bears no relation to the scientific enterprises of the last quarter of the twentieth century. White justly praises the Viking Fund, but those donations amount to only the tiniest fraction of a percent of what it takes to mount even the cheapest space mission.

While a rare lone scientist or inventor can still make discoveries, the day when private benefactors could support the bulk of basic research belongs to the last century, along with Rick White's Black Forest village. Most modern research involves teams of scientists, sophisticated laboratories, and expensive machines and computers.

The private industrial sector could support more research than can individuals, but one can hardly expect a company to invest in a planetary mission, which would not even reach its target and return data for a decade. After that, there may be some near-term economic returns, but most basic research uncovers principles of nature that require years to decades of synthesis before they result in practical application.

Unlike the Japanese, American investors now require companies to show a profit every year (or even each quarter) and it is impossible to contemplate private-sector financing of much long-term basic research. Unless funded by our society, through the government, it will not be funded at all, and we will live in an impoverished future.

But if Rick White has a mere $40 million to invest in planetary science — an amount which is less than 1 percent of the NASA budget — and if he has more foresight than the OMB, I have a suggestion: The community of planetary scientists could well use it to study the Voyager data next year, keep their laboratory experiments on moonrocks and meteorites going, and keep listening to our Pioneers still transmitting data from the farthest reaches of the solar system. I'll wait for Rick White's call, but I think public pressure on a potentially willing Congress will be more likely to save planetary exploration.

Clark R. Chapman
Tucson, Ariz.

Omission of a veteran

No mention was made of the U.S. Coast Guard Cutter *Glacier* in your article on the discovery of a fossilized mammal jaw in Antarctica (SN: 3/27/82, p. 213).

Glacier, on her 25th journey to the Antarctic in as many years, provided the support for this expedition. It is fitting that such a significant discovery was made possible in part by this veteran icebreaker and her crew on her Silver Anniversary. I suspect that *Glacier* will continue to provide support for a variety of polar research programs for many years to come.

Anthony F. Amos
Port Aransas, Tex.

Placing the blame

The environmental outlook of the Reagan administration has never been a secret. What is surprising is that the environmentalists' indictment of him (SN: 4/10/82, p. 246) rather than his appointees has taken so long.

Ronald Reagan appears to be simply an amiable boob who loves to tell stories and who rarely has his facts straight. He is perceived as harmless and even charming. This careful study reveals him to be an environmental villain of the first water; he should always have been recognized as such.

Wayne Fields
Newcastle, Calif.

β blockers and blood pressure

I enjoyed reading the article on hypertension by Deborah Franklin (SN: 4/10/82, p. 252). For the most part, it was enlightening as well as accurate.

There's just one thing. The mechanism by which β blockers lower BP is not interference "with the ability of neurotransmitters to bind to . . . β receptors." Blockade of the β receptors allows adrenergic effects to be mediated by the unaffected α receptors, the result of which would be vasoconstriction, not dilatation. Therefore, if β blockade were the essential action of these drugs, they would aggravate rather than reduce hypertension. God knows how they work but I don't!

Bruce Moe
Pasadena, Calif.

Not a matter of size

I read with some skepticism the article on RDS and chemically induced diabetes (SN: 4/10/82, p. 250) in which Dr. Ulane and his colleagues have used streptozotocin to induce chemical diabetes in the rat. The article states that streptozotocin was used due to the fact that it "is a large molecule and cannot cross the placenta." Streptozotocin (shown below) is not a large molecule (molecular weight = 265) and is well below the "size" of compounds known to cross the placenta (e.g. morphine or tetracycline, molecular weights = 285 and 444, respectively).

It may be more correct to postulate that the polar nature of streptozotocin excludes it from active transport across placental membranes. Due to the chemical structure of streptozotocin and its potential reactivity (as an N-methyl-N-nitrosamine) this active transport process may be severely diminished or totally impaired.

Brian D. Andresen, Ph.D.
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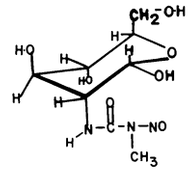

STREPTOZOTOCIN

In response to Andresen's letter, Ulane told SCIENCE NEWS, *"Actually, we did make a huge error letting our report go out saying, 'Streptozotocin is a large molecule.' What we meant to say is that it* acts *like a large molecule in that it does not cross the placenta. It is not due to its size, though, and yes, it probably does have something to do with its charge."*

Correction: In "And another squirting star" (SN: 4/3/82, p. 233), which described the discovery of a radio/optical jet associated with R Aquarii, the name of Minas Kafatos, one of the individuals responsible for the discovery, was omitted.