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Cover: Earthworms like the nightcrawlers shown are being investigated as a possible low-cost, low-energy solution to the nation's growing sewage-sludge disposal problems. See story on p. 13. (Photo: SUNY)

Editorial and Business Offices
1719 N Street, N.W.
Washington, D.C. 20036

Subscription Department
231 West Center Street
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LETTERS

More plausibilities

In regard to the article "The Plausibility of Pulsar Planets" (SN: 12/8/79, p. 388), it seems difficult to believe that a small planet could exist close enough to a pulsar to have a 3-year orbit.

Since the consensus of opinon is that a pulsar is a rotating neutron star, the remnant of a supernova, and since we have always been told that a supernova would vaporize its planets almost instantly, how could a planet of less than earth-mass survive the cataclysm, particularly that close?

May I suggest two possible explanations:

1. That the vapors of the destroyed planets re-condensed to form a new planet, after the supernova subsided.

2. That perhaps the vapors re-condensed to form not one but six new planets of about equal mass in about the same orbit, spaced 60 degrees apart at the familiar L-points. In that case, what was observed was not a single planet in a 3-year orbit, but a succession of planets in 18-year orbits. We would then find some difference in the cyclic variations as shown in the graph, if the planets were not of quite identical mass. There does indeed appear to be some variation in the graph.

Robert D. Smith
Swisher, Iowa

(It's a good question, and it occurred to us too. The authors of the paper being in Poland, there was not time to ask for their suggestions before our deadline. A simpler third alternative is that the pulsar could have captured a planet out of interstellar floating debris of some kind. —Ed.)

Many uses for artificial blood

I believe that the development of an artificial blood substitute that is suitable for use with human beings (SN: 12/8/79, p. 391) is a very significant step forward in the area of basic medical research and its practical application. The benefits and implications for all humanity are relatively obvious if an adequate and universally reliable blood substitute can be further developed and proven effective through actual use over an extended period of time.

Once this is accomplished, however, the use of artificial blood should not be limited to "emergency room or accident situations." I can conceive of two reasons that would make an artificial blood substitute vastly superior to real blood where transfusions are concerned. First of all, incompatibility with foreign blood groups would not be a factor when utilizing a blood substitute. The same formula could be administered to persons possessing different blood types, thus eliminating the possibility that a rare blood type will not be available if needed.

Secondly, the exact composition and degree of pureness would never be in question when using a substitute. As a result, the chances of a disease being transmitted through the use of impure blood in a transfusion would be greatly diminished. Furthermore, it would be easier to adjust the components of an artificial blood to meet the needs of each individual recipient than is currently the case with real blood.

In closing, I commend Dr. Anderson and his associate for their work in developing an artificial blood substitute. The importance of their research as well as that of others working in this area is unquestioned.

Aaron Wilson Hughey
Waverly, Tenn.

Chemotherapy and vitamin C

I write to point out that the article "Vitamin C not effective" (SN: 10/13/79, p. 249) misrepresents the situation. You report that a controlled study of Mayo Clinic patients with advanced cancer, published in the Sept. 27 NEW ENGLAND JOURNAL OF MEDICINE showed no evidence that large doses of vitamin C help.

This is indeed what was reported by the Mayo Clinic investigators. They themselves and the article in SCIENCE NEWS do not point out, however, that the population of cancer patients investigated in the Mayo Clinic was so different from that investigated by my associate Dr. Ewan Cameron in Vale of Leven Hospital, Loch Lomondside, Scotland, that the results cannot be considered to refute the results observed in the study in Scotland.

The chief investigator in the Mayo Clinic study wrote to me last year that he hoped to repeat Dr. Cameron's work as closely as possible. I then wrote to him, pointing out that cytotoxic chemotherapy damages the body's protective mechanisms to such an extent that subsequent treatment with vitamin C would not be expected to have much value, because vitamin C functions largely by potentiating these protective mechanisms.

I recommended strongly that only patients who had not received chemotherapy be used in the Mayo Clinic study. This recommendation, however, was ignored. Nearly all the patients in the Mayo Clinic had received courses of chemotherapy, whereas only 4 percent of those studied by Dr. Cameron had received chemotherapy.

The Vale of Leven study showed that large doses of vitamin C have great value for cancer patients who have not received chemotherapy. The Mayo Clinic study answers an important question in that it verifies that treatment with vitamin C is far less effective for patients whose immune systems have been damaged by courses of chemotherapy.

Linus Pauling
Menlo Park, Calif.

Address communications to Editor, Science News, 1719 N Street, N.W. Washington, D.C. 20036
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