to the editor

Human waste and agriculture

I was intrigued by the article (SN: 2/28, p. 223) on the potential use of human waste for our agriculture, and Dr. James E. Etzel's plan calling for pasteurization of the wastes. It is right that American law should bar the use of unsterilized human wastes for medical and esthetic reasons. This, notwithstanding the findings of the Bulgarian experiment (PLANT SCIENCE Vol. VI, No. 9, 1969), that although two days after irrigation, with unsterilized sewage, the soil was heavily polluted, yet by harvest time pathogens were gone from the field.

Our Army doctors in World War I were faced with the large incidence of soil-induced gas gangrene in war wounds. In THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR, Vol. VII, p. 1091, Col. Bailey K. Ashford pointed out that because Europe was fertilized with human excrement for many centuries, its soil contained multitudes of specific organisms of gas gangrene, the infection most common in neglected wounds. Indeed, he noted, scientists had been seeking to determine just what percentage of the outer crust of Europe was feces, and how much feces it actually contained.

In the American Expeditionary Force, 44.62 percent of those whose wounds developed gas gangrene died (THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR, Vol. XII, p. 267).

If we could pasteurize human wastes and obtain public acceptance for their use as fertilizer like cow's manure, their vital nutrients, instead of going to waste and polluting the environment, would revivify the soil from which they came. Science would then be farther along on what ought to be its ecological goal, (in the words of Falstaff) to "turn diseases to commodity."

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Highly experimental

Re your story "L-dopa as relaxant" (SN: 1/31, p. 127) on the report given by Dr. Meyer and me at the American Academy of Orthopedic Surgeons:

The crux of our paper was that L-dopa definitely loosens rigid parkinsonian muscles producing greater joint mobility. After optimal relaxation has occurred orthopedic reconstructive procedure can produce stable functional joints which will not later be distorted by progressive changes associated with the disease process.

A second point is that we have much to learn yet about parkinsonism and its modification by L-dopa. Some other extrapyramidal disorders have also been treated with the drug but this is highly experimental. Your statement: ". . . thereby opening up new avenues of treatment for certain other neurologic disorders" can only serve to falsely raise the hopes of thousands of patients suffering from many types of disorders with associated spasticity such as multiple sclerosis, cerebral palsy, etc. In the interest of fairness to these anxious people I hope you will clarify this situation.

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Lead and octane rating

Two points regarding the article "Getting the lead out," (SN: 2/14, p. 167):

- Where did the author get the quaint notion that "Tetraethyl lead changes the shape of the hydrocarbon molecule. . . ."
- Some mention should have been made of the fact that Amoco premium grade gasoline contains no tetraethyl lead, and incidentally, sells for the same prices as other premium gasolines.

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(In unleaded gasoline, it is possible to improve the octane rating of the gasoline by processing in more hydrocarbon molecules of the ring and branched types rather than straight chain molecules. Using tetraethyl lead in the engine eliminates the need for this severe processing because during combustion it inhibits the formation of intermediate compounds, which at high temperature and high pressure, would cause the premature combustion that constitutes knock. The exact mechanism by which lead does this is a mystery.

Actually the cost of Amoco premium gasoline is about a penny more per gallon than the price of other premium gasolines in many places. Ed.)

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