LETTERS

Amaranth: Use as Food

Regarding the article in which cultivation and consumption of plants of the genus *Amaranthus* are discussed (Research News, 7 Oct., p. 40), we would like to point out that at least one of the pigweeds, *A. retroflexus*, is considered to be poisonous to swine (*1*, *2*), cattle (*1*, *3*–*5*), and probably to other species (*5*). The plant is apparently a nitrate accumulator (*4*, *6*), and its oxalate content may be as high as 30 percent (*7*). These toxicants, however, may not be primarily responsible for the plant's nephrotoxicity (*1*, *2*, *5*), as other effects include hyperkalemia and elevated levels of blood urea nitrogen and serum creatinine (*1*). The usual symptoms in swine are ataxia, posterior paralysis, collapse, and death. The most prominent abnormality found at autopsy is perirenal edema, and coagulation necrosis of both the proximal and distal convoluted tubules has been observed microscopically (*1*, *5*). More recently, β-D-galactose pyranosyl, a lectin with possible mitogenic activity, has been found in *A. caudatus* (Inca wheat) (*8*).

While the article does not specify *A. retroflexus*, one of the common pigweeds of North America and elsewhere, it is important to realize that at least one member of the genus is associated with livestock intoxication. Furthermore, it would seem wise to ascertain whether or not this and other species of *Amaranthus* are toxic to humans before encouraging people to cultivate them for use as food.

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Style and Science

Can form be separated from content, even in the writings of scientists [see R. Grantham (Letters, 14 Oct., p. 124)]?

The first qualification of a writer, is a perfect knowledge of the subject which he undertakes to treat; since we cannot teach what we do not know, nor can properly undertake to instruct others while we are ourselves in want of instruction. The next requisite is, that he be master of the language in which he delivers his sentiments; if he treats of science and demonstration, that he has attained a style clear, pure, nervous, and expressive; if his topics be probable and persuasory, that he be able to recommend them by the superaddition of elegance and imagery, to display the colours of varied diction, and pour forth the music of modulated periods.

If it be again inquired, upon what principles any man shall conclude that he wants these powers, it may be readily answered, that no end is attained but by the proper means; he only can rationally presume that he understands a subject, who has read and compared the writers that have hitherto discussed it, familarized their arguments to himself by long meditation, consulted the foundations of different systems, and separated truth from error by a rigorous examination.

In like manner, he only has a right to suppose that he can express his thoughts, whatever they are, with perspicuity or elegance, who has carefully perused the best authors, accurately noted their diversities of style, diligently selected the best modes of diction, and familiarized them by long habits of attentive practice.

Apart from the first sentence, the above is not mine. It is from the pen of Samuel Johnson and appeared in the *Adventurer*, No. 115, on Tuesday, 11 December 1753.

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Research, Regulation, and the Public Interest

In fairness to those of us who seek to protect the public from the hazards of allowing toxic substances to endanger our air and water, I believe the remarks of Columbia University president William J. McGill (News and Comment, 21 October, p. 275) deserve a reply.

His quoted comments suggest that scientific activity should be singled out, in contrast to all other enterprises, to be immune from all regulation in the public interest. But unregulated recombinant DNA activity, for instance, whether practiced in a university or an industrial laboratory, could present hazards from which the public deserves protection.

The claim that we who seek reasonable controls to protect laboratory workers, their families, and their neighbors from the spread of disease are seeking to somehow inhibit scientific inquiry does not withstand scrutiny. At present there are no legal safeguards regarding laboratory safety and containment of microorganisms in recombinant DNA experiments. Legislation to safeguard the public, far from "interven[ing] in the administration of research," is no different from laws regulating other professions and activities—medicine, aviation, building construction—to ensure that standards of safety exist.

McGill's statement that "the adversary method for arriving at truth" is "not appropriate for arriving at sound public policy on scientific matters" implies that such decisions should be left solely to the "experts." Where the importance of these issues transcends the expertise of any one discipline and where the public must run the risks implicit in those decisions, the public must have a say in its own protection. It was public concern expressed to government which led to regulation of DDT, fluorocarbons, toxic substances, and other hazards. Had we relied on self-regulation alone we would still be exposed to these dangers.

As I see it, the needs of environmental protection and of scientific research are not antithetical. Both should be partners in seeking a healthier and better life for all of us.

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Nuclear Power Initiatives: the IEEE Position

In his article "IEEE: A policy challenge for big engineering society" (News and Comment, 19 Aug., p. 741), John Walsh discusses criticism of the Institute of Electrical and Electronics Engineers' nontechnical activities. In describing reaction to the IEEE's opposi-