

toxin). Dumbacher *et al.* found the least amount of toxin in the stomach and stomach contents of the pitohuis, which makes the hypothesis of oral ingestion of the toxin somewhat less likely in these birds.

Microorganisms have been implicated as a source of exogenous toxin in pufferfish; cultured pufferfish do not produce tetrodotoxin until they are fed organs from wild fish (3), and several marine microorganisms able to produce tetrodotoxin have been isolated from wild fish (4).

David B. Berkowitz
Office of Biotechnology,
Food and Drug Administration,
Department of Health and
Human Services,
Rockville, MD 20857

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The Quality of Homoeosis

The Research News article "Gene research flowers in *Arabidopsis thaliana*" by Anne Simon Moffat (4 Dec., p. 1581) may have left readers with the misimpression that the *emf* mutation that my co-workers and I have isolated is in no sense "homoeotic." The *emf* mutant skips a step (the vegetative phase) in normal *Arabidopsis* development. The mutants can be considered homoeotic in the broad sense of the word, in that one body structure is replaced by another. However, in the narrow sense of homoeosis (one-for-one spatial replacement of structures), the *emf* mutant would not be classified as homoeotic because there is no change in position. Inflorescence meristem replaces vegetative meristem in the mutant. Both types of meristem occupy the shoot apical position, but at different times in development.

Because plant development takes place over the entire life cycle, temporal factors usually play a role in positional events. This means that, in plants, because of the confounding temporal factor, only the broad definition of homoeosis is applicable. We hypothesize in our report of 4 December (p. 1645) that the EMF gene acts as a developmental switch that simultaneously activates the vegetative and suppresses the reproductive state of the meristem and that, in the absence of EMF

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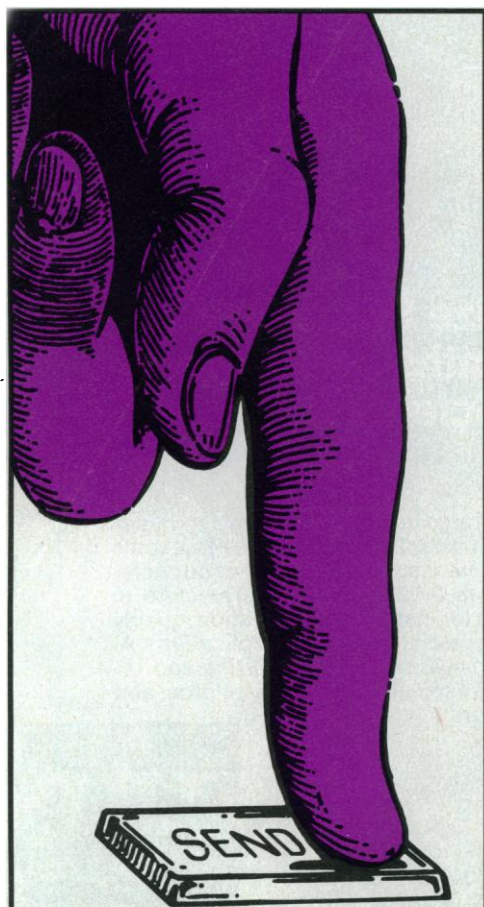
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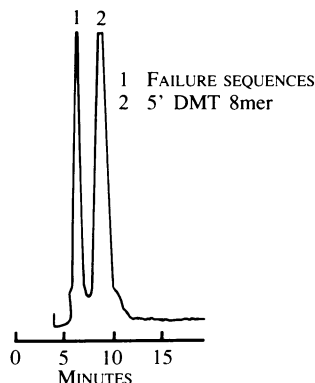
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function, the embryo produces an inflorescence meristem instead of a vegetative meristem. If this hypothesis is shown to be correct, then *emf* can be considered to be a homoeotic mutation.

Z. Renee Sung

Department of Plant Biology,
University of California,
111 Genetics and Plant Biology Building,
Berkeley, CA 94720

Splicer RNAs

In my 14 August Perspective "Splicing takes a Holliday" (p. 888), I inadvertently omitted reference to two highly relevant 1979 papers by Vincent Murray and Robin Holliday (1). These hypothesized—with prescient foresight—that small RNAs termed "splicer RNAs" [perhaps small nuclear RNAs (snRNAs)] might hybridize to intron sequences, to exon sequences, or to both intron and exon sequences at the 5' and 3' splice sites, bringing them together into a structure reminiscent of DNA recombination intermediates. In my Perspective, I summarized recent evidence that in the spliceosome, two such "splicer RNAs" are involved and that their identities are the U1 and U5 snRNAs. These snRNAs contribute to splice site identification and juxtaposition early in the splicing pathway; they do not appear to remain in the Holliday configuration at the time when intron cleavage and exon ligation occur (2). Moreover, current evidence supports a role for specific proteins, but not for specific snRNAs, in alternative splicing.

References to the original proposals of Holliday and Murray should most certainly have been included in my Perspective, and I apologize for their absence. Because of space constraints, I also omitted reference to two other specific proposals of Holliday-like RNA structures or exon bridging models for the action of snRNAs in splicing (3).

Joan A. Steitz

Department of Molecular Biophysics
and Biochemistry,
Howard Hughes Medical Institute,
Yale University School of Medicine,
New Haven, CT 06536-0812

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