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# Letters

## **Terms for Temperatures**

The Appleman-Braham interchange of viewpoints on nomenclature for temperature reductions that go below a predetermined reference point [Science 129, 1296 (1959)] prompts me to observe that none of the terms suggested are as free of ambiguity as they might be, and that some of them can be misleading. The point of contention was the choice between sub, super, and under as a prefix to the verb cool for description of such temperature reductions.

My first point is that the verb itself can be improved. I have found the verb *chill* to be more descriptive in speaking of temperature drops considerably below ambient levels, admittedly not to the same degree that *heating* rather than *warming* distinguishes a substantial rise in temperature, but still enough to establish a suitable distinction in the mind of the reader. English does not provide a common verb that bears quite the same relationship to *cool* that *heat* does to *warm*.

The use of *under* as a prefix for either verb conveys to me an image exactly opposite to the one intended; a system which is "undercooled" means one that experienced a temperature drop *less* than the magnitude to be expected from the context. To a lesser extent, *sub* as a prefix suffers the same handicap.

On the other hand, the prefix super implies a marked deviation from the norm, which is not true necessarily for the downward departures from freezing points or saturation temperatures that are meaningful in the systems usually encountered. Over describes such a departure better, because it can connote any deviation, no matter how small. It also avoids Braham's objection—a valid one in my opinion—to mixing words of different derivation.

To say that water or a saturated solution is "overchilled" registers in my mind a sharp impression that the system is at temperatures near a critical point (not just "cool"), and that it is to some degree (not necessarily great), below this reference temperature.

H. LEROY THOMPSON Birmingham, Alabama

### European Degrees

I should like to support Seiden's opinion [Science 129, 933 (1959)] that it would be useful from the standpoint of international scientific contacts if some professional group would attempt to standardize the anglicization of continental degrees. May I suggest that it be considered whether the American Association for the Advancement of Science, representing if possible also the American Medical Association, American Institute of Biological Sciences, American Institute of Chemists, American Chemical Society, and other interested U.S. organizations, could undertake such an endeavor, specifically in collaboration or consultation with the analogous British societies.

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### Marine Fungi and Limnoria

The recent work by D. L. Ray and D. E. Stuntz [Science 129, 93 (1959)] contains some suggestions and implications concerning our beliefs that need to be corrected.

First, we have not claimed that "marine wood-boring animals do not attack wood or become established in it unless the wood is first invaded and 'conditioned' by marine fungi." However, certain of our studies referred to have indicated that a thorough examination of the role of marine fungi in the destruction of wood certainly is due.

Second, we have not made any statement or implication that "Limnoria is unable to attack sterilized wood." There are so many unknown factors in the evidence so far presented that any statement based on this concept would be drawing essentially unsubstantiated conclusions.

Third, we have not expressed a belief that "Limnoria will not attack wood until its surface has been 'conditioned'." This "conditioning," if it is of any effect, surely involves physical, chemical, and biological factors, none of which has yet been given adequate study.

A reasonably careful reading of our two articles would show clearly that we were presenting specific observations and results of experimentation concerning marine fungi and were calling attention to the need for careful studies of the interrelationships between the marine organisms which infest submerged wood. We do believe that deterioration is a composite process in which the contribution made by any organism involved in the biologic complex, at any stage in the process, should be given critical evaluation.

> Ernest S. Reynolds Samuel P. Meyers

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