Comments and Communications

Precedence of Modern Plant Names Over Names Based on Fossils

Comment regarding my proposal (*Science*, April 2, pp. 344–345) to use modern material for nomenclatural typification whenever possible, even though a congeneric fossil group was named first, seems to be generally favorable. Dr. C. A. Arnold has called attention, however, to the possibility of a conflicting interpretation regarding the later-homonym rule (Art. 61), if the original wording should be adopted. The writer relied chiefly on Article 61 to avoid any displacement of fossil-plant names by inadvertence, such as those instances to which E. L. Little (*Wash. Acad. Sci. J.*, 1943, 33, 8–11, 130–135) called attention and renamed as later homonyms of fossils. Consideration of this, and other constructive suggestions by Drs. W. H. Camp and Theodor Just, leads me to suggest alteration of the wording as originally proposed and the addition of a note, to be inserted under Article 18 in the Rules of Botanical Nomenclature or as a part of Appendix I, "Regulations for Determining Types," and to read as follows:

Names based on types derived from modern material always take nomenclatural precedence over names based on fossil or subfossil specimens, if the groups are congeneric.

NOTE: *Names based on fossil types cannot be used again for modern plants in violation of the rule excluding later homonyms* (see Art. 61).

The effects of adopting the present proposal—in the same sense that it is now reworded—were discussed in the writer's previous note (*Science*, April 2) with reference to *Metasequoia* and a few similar nomenclatural examples. Since that time Drs. Hu and Cheng have published the name *Metasequoia glytostroboides* for the living species (*Fan Mem. Inst. Biol. Bull.*, 1948, 1, 153–161). It is of interest, therefore, to re-examine the nomenclatural situation as of the present date.

According to the existing regulation, the type species of the genus *Metasequoia* Miki is *Sequoia disticha* Heer (*K. Svenska Vetensk.-Akad. Handl.*, 1876, 14, 63), and some one of the specimens illustrated by Heer might be regarded as the ultimate holotype. In instances of this sort, according to the new proposal, names based on modern types would always take precedence. Therefore, *M. glytostroboides* Hu and Cheng would become the type species, with its type specimen (holotype), as cited by Hu and Cheng, "C. J. Hsueh No. 5, in flowers and cones" (February 20, 1946), and the additional reference sheets taken in different developmental stages from the same tree. The inherent great advantage in utilizing this modern type material for reference in identification, over any fossil type illustrated by Heer, is obvious.

In my estimation some question still remains whether the living species is best named as "*Metasequoia.*" If the living species is the type of the genus, as it would be under the new proposal, the genus apparently should be cited for type reference as *Metasequoia* Hu and Cheng, *non* Miki.

Unrelated to the above proposal, but pertinent to *Metasequoia*, the writer also wishes to record that, through the generosity of Dr. Just, a copy of S. Miki's rare publication ("On the change of flora in eastern Asia since Tertiary period (1). The clay or lignite beds flora in Japan with special reference to the *Pinus trifolia* beds in central Hondo." *Jap. J. Bot.*, 1941, 11, 237–303) is available for consultation by American paleobotanists at the paleobotanical library of the U. S. Geological Survey in Washington.

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A Point Regarding 2,4-D Penetration

In the article by C. L. Hamner and Kiang Chi-Kien (*Science*, May 28, pp. 572–573) the statement is made that possibly Geon 31X latex may act by sealing in the *vapors* of the salt of 2,4-D. To my knowledge there are no vapors of 2,4-D (granted some slight odor from a bottle of pure 2,4-D), and especially would this be true of the salt, although in the plant this may be converted back to the acid to some extent. The m. p. of the salt is about 225° C (melting block determination of prepared salt), whereas the acid melts at 138° C. Therefore, the vapor pressure is low at normal temperatures. Since the solutions of 2,4-D are usually extremely dilute (less than a gamma/cc), it would be assumed that any effect due to the vapor pressure of the salt would be ruled out.

The probable explanation lies in the fact that by decreasing the local evaporation of moisture, Geon 31X may cause better entry of 2,4-D in solution. One might have suspected that a decrease in the gas exchange—if this is what Geon 31X does—would interfere with the photosynthetic and respiratory metabolism, but the authors report no effect of the Geon 31X when applied alone.

In general it might be surmised that anything which normally either decreases the concentration of 2,4-D or prevents its effective entry is partly or wholly prevented by Geon 31X. The observations reported are interesting and may prove of value from both a practical and a theoretical mechanistic point of view.

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Significance of Clearance Variations in the Rat

While I am very much interested by the attempt of S. E. Dicker (*Science*, July 2, p. 12) to reconcile some of the different results for glomerular filtration rate in the rat, there are several additional factors to remember which negate the reconciliation.