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30 SEPTEMBER 1966

1593
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and more sensible to use in wartime because it requires less manpower." As a consequence of the suppression of the bulletin, the head of Brownlee's department, Professor Theodore William Schultz, resigned and joined the faculty of the University of Chicago, and, by March, 19 other faculty members had left Iowa College in protest. One of them, W. W. Wilcox, actually found refuge at the University of Wisconsin, where much of the work establishing the nutritious qualities of oleomargarine had been carried out by C. A. Elvehjem and his co-workers. In an article entitled "Vegetable fats equal butterfat in mixed rations," R. K. Boutwell, R. P. Geyer, C. A. Elvehjem, and E. B. Hart concluded, on the basis of their own research, that "butterfat is superior to vegetable fats when young animals are restricted to a diet made up almost entirely of milk, but not when the diet includes a mixture of such carbohydrates as starch, sucrose, and dextrose. These are supplied by such common foods as cereals, potatoes, sugar, and molasses" ("What's new in farm science." Bull 461, Ann. Rept. Agr. Exp. Sta., Univ. Wis., December 1943, p. 45). I sincerely regret the mistake, which might seem to impugn the distinguished work of the Wisconsin group. I further deplore that the same error was printed in my book Science and Ethical Values (Univ. of North Carolina Press, Chapel Hill, 1965, p. 92), in a more extended form of the essay printed in Science. To confuse the rescuer with the drowning man or the bystander with the thug may not be uncommon, but it is truly regrettable.

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"Bootlegging" in Research

Although Greenberg is perhaps strictly correct in stating in his article on "bootlegging" in research (News and Comment, 19 Aug., p. 848) that this problem has not been the subject of any published study or conference, it has, nevertheless, been aired and the discussion recorded. At the 12th National Conference on the Administration of Research, University of Denver, 1958, a participant asked how the willingness of research directors to tolerate "bootleg research" accorded with managerial efforts to program and direct research activities toward major objectives of the laboratory and parent organizations. The ensuing discussion revealed two opposing camps, one for "legalizing" and encouraging such efforts by specific allocation of discretionary budgeted funds for extracurricular exploratory studies, the other for excluding any effort not clearly a part of the approved program, on the basis that any "undercover" work is objectionable. The issue was not then and has not been settled but one should take note that there are two kinds of "bootlegging." One involves undercover or diversionary effort and the other, as Greenberg points out, involves clouding the real purposes of approved programs. Perhaps the latter is less harmful, particularly if the effort is not really a departure from the commitments of management and the researcher.


LESLIE B. WILLIAMS
Coordinator of Research,
University of Delaware, Newark

Calcium and Fluoride

D. M. Hajimarkos discussed the high content of fluoride in fish flour (Letters, 17 June) and called for studies to be undertaken regarding the effect of ingesting fish flour on dental caries and the degree of mottled enamel that might develop in children's teeth. In this letter he has omitted one important paragraph which is found in his reference report [J. Pediat. 65, 782 (1964)] as follows:

However, since the calcium content of fish flour is appreciable, it should be pointed out that experimental evidence has shown that absorption of fluoride from the intestinal tract is considerably depressed by the presence of high amounts of calcium.

My interest is merely to bring out this information, so that any judgment rendered by readers will also be based on this statement.

ROBERT F. ARMEIT
21 Trowbridge Road,
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Glass has several qualities that make it a choice encapsulant for electronic components. But to seal glass around a component, the glass must be heated to temperatures well above 600°C. Western Electric found that long exposure to these temperatures would damage sensitive components. In fact, ordinary glass required so much heat, applied for so long a time, that both damage and delay occurred in the sealing process.

Glassmakers have long struggled to keep glass free of contaminants, especially the oxides of iron.

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VOL. 153

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products of major metals; metallurgical by-products and co-products of the minor metals; milling by-products and co-products of the minor metals; individually mined minor metals; and minor metals without geologic limitations.

The chapter on "Supply conditions" shows a real understanding of the problems of minor metals, although it would have been still better if specific examples had been used to show how intertwined the milling and metallurgical recoveries of the minor metals are with the mixed mineral ores. The nature of these problems explains why many large firms already in nonferrous major metals or chemicals diversify into minor metals, and, conversely, why few new firms have successfully broken into the business. Other chapters covering "Location and scale of production," "Firms producing minor metals," "Sources and competition," and "strength of competition," supported by 20 tables, seven illustrations, and four appendices, round out the book.

The volume has excellent typography and editing. (The only error I found was the transposition of tables 1 and 2 on pp. 4 and 5.) Although in some places (pp. 13–31 in particular) the book reads like the graduate thesis it was, it is otherwise professional in every sense and will make rewarding reading not only for mineral and metal economists but also for marketing and planning people and, of course, exploration geologists.

FREDRICK C. KRUGER

International Minerals and Chemical Corporation,
Skokie, Illinois

Articles in Botany

Volume 2 of Advances in Botanical Research (Academic Press, New York, 1965. 394 pp., illus. $12), edited by R. D. Preston, continues a series of topical review papers generous in length and in number and quality of illustrations. It contains six articles: "Some phyletic implications of flagellar structure in plants" by Irene Manton; "Fundamental problems in numerical taxonomy" by W. T. Williams and M. B. Dale; "Ultrastructure of the wall in growing cells and its relation to the direction of growth" by P. A. Roelfsen; "The protein component of primary cell walls" by D. T. A. Lamport; "Embryology in relation to physiology and genetics" by P. Maheshwari and N. S. Rangaswamy; and "The soft rot fungi: their mode of action and significance in the degradation of wood" by John Levy.

These articles will be of interest and importance to workers in the pertinent areas; the nature of the coverage of course varies greatly among the topics and authors. Roelfsen's and Maheshwari and Rangaswamy's extensive articles survey in detail rather large bodies of literature, the former bringing the author's point of view up to date since the appearance of his 1959 monograph on the same subject, the latter reviewing in historical perspective an entire area, but with emphasis on the tissue-culture approach of the last couple of decades. Lamport's article on cell-wall protein is long not because of extensiveness of its subject but through inclusion of much previously unpublished tabular and graphic material, and liberal indulgence in discourse and speculation (including passages and quotations justifying the merits of speculation!). Although the paper on numerical taxonomy by Williams and Dale refers to the needs of "the newcomer to this field" in its introduction, for this reader as a newcomer the article gives, to transpose the words of Preston's description from the preface, a somewhat bewildering look to this new field; the writing seems to be directed to a class of specialists that in my guess will include but few taxonomists, important though the principles discussed no doubt are to taxonomy.

The book contains at least its share of errors, including a conspicuously garbled address for Lamport on the page before the preface, and the delightfully suggestive "Unexpected leaves" appearing prominently in Table X on page 177.

PETER M. RAY

Division of Natural Sciences, University of California, Santa Cruz

New Books

Biological and Medical Sciences


SCI:ENCE

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