

would like to inform your readers that this same problem has been overcome in the School of [Exact and Natural] Sciences of the University of Buenos Aires. This School, one of the ten comprising the University of Buenos Aires, one of the largest universities of the Latin world (with an enrollment of over 50,000), deals with teaching and research in the basic sciences and includes at present six large departments (physics; inorganic, analytical, and physical chemistry; biological chemistry; meteorology; biology; and geology) plus partnership in the School of Engineering of the Department of Industries.

The impact of science and technology in the development of the huge natural resources of Latin America within an imperatively short period is obvious. The leaders in overhauling methods in the School of Sciences have been aware of this, as well as of the problem raised by Hardin. Hence, all students of the School (including, of course, the ever more numerous students of mathematics and physics) are required to take a short but intensive course in biology. One of the arguments for establishing this requirement was that no student of the sciences can utterly ignore one of the main fields of science. Insofar as the "other" sciences are concerned, the curriculum establishes also at least two full semesters of physics and two of chemistry for all students of the School.

Notwithstanding the fact that the overhaul mentioned has been partially based on the university system that has found great favor in the United States, the obligatory courses that I have pointed out give students of all branches a broader view of science in toto.

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Statue of Claude Bernard

C. D. Leake [*Science* 134, 2069 (1961)] was quite right in his statement, which appeared under the excellent photograph of a bronze memorial of the celebrated physiologist Claude Bernard (1813-78), that this statue was melted by Germans who occupied Paris during World War II. It may interest readers to know that in 1946 a



Fig. 1. The new statue of Claude Bernard. [E. Fauré-Fremiet, Collège de France]

new monument, in stone, was erected on the same spot in front of the Collège de France (Fig. 1). Bernard's pose is different in this second statue, although the memorial is approximately of the same size.

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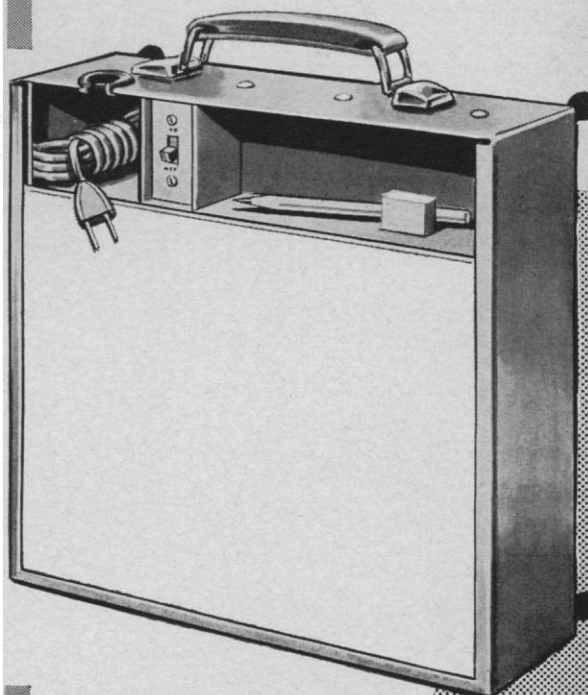
Sparing Action of Folic Acid by Thymidine

The article by Grossowicz and Mandelbaum (1) was commented on by Bolinder (2). In reply, Grossowicz (3) stated that thymidine produced growth in our experiments but not in his system. However, we pointed out (4) that our results showed that although thymidine by itself was ineffective in promoting growth, it significantly reduced the requirement of *Leuconostoc citrovorum* for "citrovorum factor."

The current state of biochemical research in folic acid coenzymes has reached a degree of sophistication not discussed or expressed in the article by Grossowicz and Mandelbaum. Studies by Friedkin (5) indicate that the thymidylate synthetase reaction includes transfer of the 5,10-CH₂- group and dehydrogenation of 5,10-methylene tetrahydrofolic acid to dihydrofolic acid. The reduction of dihydrofolic acid

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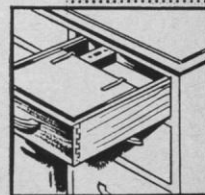
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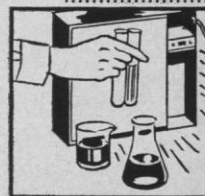
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to tetrahydrofolic acid is a step in the renewal of the supply of 5,10-methylene tetrahydrofolic acid. This reduction is presumably not carried out readily by *L. citrovorum*, as shown by its defective response to folic acid and dihydrofolic acid as contrasted with its ready response to tetrahydrofolic acid (6). The addition of preformed thymidine would lessen the requirement for 5,10-methylene tetrahydrofolic acid. Although this evidence is inferential, it could account for the well-established sparing action of thymidine on the "citrovorum factor" requirement of *L. citrovorum* (4, 7).

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Messages from Other Worlds

The article by S. von Hoerner [*Science* **134**, 1839 (1961)] gave us very interesting estimates of the probabilities of radio communication with other civilizations in space.

A small thought of my own is that notice of the existence, location, and communication system of such a civilization might reach us by means other than direct radio transmission. If an earlier civilization was as egocentric as our own, it would probably want to leave a record of its existence and communicate its knowledge to successor civilizations. It would need, for this purpose, objects that would be maintenance-free, would attract attention, and would carry much information in a small space for millions of years.

If such a speculation has any merit, one might want to take a new look at meteorites, comets, and other space travelers for possible messages. Might the organic compounds in meteorites contain coded information? Also, could one intercept comets to obtain material for analysis?

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