against the bill when it was before Congress" (News in Brief, 21 July, p. 287). The NSMR has frequently voiced its favor of high standards, but consistently opposed legislation providing for meaningful enforcement. It has denied the existence of bad facilities and care (hearings on H.R. 1937 and H.R. 3557, 28–29 Sept. 1962, p. 317) until examples of these were made public. When it became clear that some sort of regulatory legislation was inevitable, it attempted to substitute nominal for real enforcement procedures.

Now the results of NSMR's own survey make it "questionable" whether most research institutions will "be in compliance with the law when it becomes effective. . . ." The survey results indicate that in about half of our research institutions conditions are below even the very modest minimum standards promulgated under the law. . . . Some research institutions already meet these standards. For others, it will mean an additional expenditure. These funds will be well spent if they result in facilities of which we need not feel ashamed. The need for enforcement by an impartial agency is clearer than ever. Of utmost importance at this time is an adequate appropriation by Congress for implementation of P.L. 89-544.

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## Sewage: A Rose by Another Name

It is not my intent to deprecate the efforts of Mateles and others (15 Sept., p. 1322) and those cited by the authors to produce single-cell protein (SCP) from hydrocarbons. In fact, fermentation may be more efficient than conventional agriculture in converting petroleum into protein. There are, however, other potential substrates for SCP that are now in the category of misplaced resources. They are domestic effluents and solid organic wastes (commonly known as sewage and garbage). Enormous sums of money are spent to degrade these by-products of our society and dilute them into air and water. For example, most of the present efforts of the Federal Water Pollution Control Administration appear to be directed toward dispersal by the usual, expensive methods of sanitary engineering. Yet, it is recognized that without additional tertiary treatment we are merely transferring problems and nuisances from one place to another.

Why cannot fermentation systems be designed to convert organic wastes into SCP? The problem of converting so-called nasty materials into an approved food has been solved in the case of fish protein concentrate. Why not turn some attention to sewage protein concentrate? Of course, this rose would have to be called by another name, but it could be just as nutritious as SCP, FPC, or filet mignon.

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## Vitamin D and Skin Pigments

Loomis points out that the white race evolved in Europe because pigmented individuals develop vitamin D deficiency during the sunless winter months ("Skin-pigment regulation of vitamin D biosynthesis in man," 4 Aug., p. 501). His argument loses force when he states that native Africans are black (melanin granules) and Orientals yellow (keratohyaline granules) because individuals without this pigmentation suffered overproduction of vitamin D in equatorial latitudes. Even in this age of bikinis, the only reported cases of hypervitaminosis D are due to oral ingestion, though the chronic effects of slightly elevated vitamin D probably deserve further investigation. A more likely explanation of why light-skinned peoples suffer in the tropics, now as well as when the races were evolving, is found in solar-dependent skin cancer and simple sunburn [see, for example, F. Daniels, *Med. Clin. No. Amer.* **49**, 565 (1965)]. Both these disorders are extremely common in Floridians of northern European extraction.

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In his article in the *Handbook of Physiology* (*1*), F. Daniels discusses the difficulties in viewing black skin as an adaptation to strong solar radiation. In particular, he says that Blum (*2*) has raised the question that must be answered and can be stated: "How can nondisabling sunburn, the mildly disfiguring effects of chronic solar exposure, and skin cancers occurring well past the reproductive years, have a genetic selection value?" Daniels then sug-

gests that black skin may be of value in the tropics for reasons wholly unrelated to solar radiation. It should be remembered in addition that severe sunburn is essentially a disease of this century when 2-week vacations and jet air travel to Florida render it common among the unwary, whereas it is almost unknown among the peasants of Europe today who tan gradually as the summertime approaches.

Although positive evidence for hypervitaminosis D among light-skinned peoples near the equator is lacking today, this is probably because (i) up to now there has been no reason to look for it; (ii) the well-known difficulties of assaying this vitamin; and (iii) of the habit of white men in the tropics of carefully avoiding direct sunlight by wearing clothes and pith helmets, and staying indoors when the sun is high to such an extent that they often are not even sunburned. These cultural substitutes for a black stratum corneum were not available, of course, when the races were evolving. Future confirmation of the hypervitaminosis D theory may come from reports of elevated serum levels of calcium and phosphate, kidney stones, and other symptoms of hypervitaminosis D in white persons living out-of-doors in Java, Kenya, and Peru.


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1. F. Daniels, Jr., in *Handbook of Physiology*, D. B. Dill, E. F. Adolph, C. G. Wilbur, Eds. (American Physiological Society, Washington, D.C., 1964), p. 969.
2. H. F. Blum, *Quart. Rev. Biol.* **36**, 50 (1961).


## UFO's: Ideal Space Inhabitants

Markowitz' article, "Physics and metaphysics of unidentified flying objects" (15 Sept., p. 1274), was very helpful and prompts the following thought. Aside from infrequent sightings prior to 1945, UFO's became a source of public concern at a time when exploration of space moved closer to reality. I suggest that man, confronted with stepping into space, finds it intolerable to perceive space as uninhabited. The "sophisticated anxiety" of modern man might be, in part, responsible for populating space with products of intelligent beings.


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