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COVER: After studying the effects of stress for decades, researchers are fairly certain that stress can cause illness in certain persons. Now, scientists are launching a new era of research—one in which they hope to discover exactly how the emotions can lead to physical disease. See p. 394. (Illustration by Ann Lunsford)

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LETTERS

Rutin's route

In your article, "Tobacco protein may lead to heart disease" (SN: 10/1/77, p. 214), you report that researchers at Cornell "have identified a small protein, rutin ... found in tobacco leaves and cigarette smoke" as well as "in several vegetables, including eggplant, green peppers, potatoes and tomatoes." The structure of rutin is a disaccharide derivative of pentahydroxyflavone, and in no way involves any peptide bonds.

The biosynthetic route leading to rutin is through the glycosylation of flavonoids, wherein quercetin-3-glycoside is formed enzymatically from uridine diphospho-D-glucose and quercetin, and rutin is subsequently formed from quercetin-3-glucoside and uridine diphospho-L-rhamnose. So rutin seems to be a flavonoid (as it has historically been named) and not "a small protein."

Setting this technicality aside, rutin is sold (presumably in concentrated form) as a food supplement (bioflavonoid or "vitamin" P). While such products clearly state that the "need for rutin in human nutrition is not established," it is claimed by enthusiasts that the substance is effective in the amelioration of such common physical annoyances as hemorrhoids and varicose veins. Whether such ameliorative effects of rutin dietary supplementation are factual remains to be proven, but to allay any misgivings of the weary consumer, it should be pointed out that presumably when ingested in this manner, the substance would be as innocuous to the human metabolic scheme as the Cornell people suspect it to be when consumed as part of the structure of the aforementioned plant foods.

Ronald M. Di Salvo, Ph.D.
Canoga Park, Calif.

How sweet it is

Enjoyed your article regarding Nebraska's production of alcohol from grain to be added to gasoline—gasohol (SN: 10/29/77, p. 280).

Alcohol from grain, wood, potatoes, etc. has one disadvantage: fuel must be burned to make the alcohol.

Brazil is way ahead of us. She has been making alcohol from molasses (a by-product of sugar made from cane) and is now making it directly from the cane juice. The squeezed sugar cane (bagasse) furnishes the fuel.

The State of Louisiana would do well to "moth ball" the cane sugar mills that the Carter administration is putting out of business. They'll be needed in the not too distant future.

F. Evans Farwell
New Orleans, La.

A rose by any other name

Your article, "Planetoid between Saturn and Uranus" (SN:11/12/77, p. 311), was most interesting; however, it raises an unnecessary and confusing question regarding the proper name to be affixed to this type of object. "It would be misleading to call it an asteroid," the article states, and later it asks, "But what is one to call it? A planetoid? 'That would be a nice name for it,' says Kowal, 'if only we could revive it.'"

Actually there should never have been any doubt as to what to call this object assuming that it is in fact a planet and not a comet *[a significant assumption — Ed.]* Planets are classified by size into two categories: major planets, of which there are nine known, and minor planets which may exceed 100,000 in number. The smallest major planet is Mercury, about 3,000 miles in diameter, and the largest minor planet is Ceres, about 600 miles across. If the new object were between 1,500 and 2,000 miles in diameter then it would be legitimate to argue about its classification. But since its size is estimated to be between 100 and 400 miles in diameter, it seems to me fairly obvious that this makes it a minor planet. The terms "asteroid" and "planetoid" are synonymous with minor planets and are somewhat less formal appellations.

It is simply not true, as some people have suggested, that the term minor planet, or asteroid, applies only to objects found in the region between Mars and Jupiter. For more than forty years now asteroids have been known that not only cross the orbit of Mars but even cross the orbit of the earth, and in one case, that of Icarus, the asteroid even crosses the orbit of Mercury.

Perhaps the most difficult aspect of classifying Kowal's new object is in determining whether it is in fact a minor planet or whether it is actually cometary in nature. Comets are usually recognized by the volatile material they emit, but some comets such as Periodic Comet Schwassmann-Wachmann (1) 1925 II may produce very little such material and at times appear stellar. This comet has a nearly circular orbit between Jupiter and Saturn. It is probably worth considering whether Kowal's object might not actually be a large comet with very little, or no volatile emission. Then the next question is whether the object should be called a minor planet or whether the term cometoid is more appropriate.

The term cometoid would then imply a particular genesis. This is not the case with the terms minor planet or asteroid. It may yet turn out that several objects hitherto classified as asteroids may, in fact, be cometoids.

Ronald A. Oriti
Los Angeles, Calif.

(The nature of Object Kowal is still in question, but its orbit is now well in hand. See p. 388. —Ed.)

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