

SCIENCE NEWS®

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Incorporating Science News Letter

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COVER: According to the theory of plate tectonics, continents are mobile rafts that float atop the earth's plastic layer—the asthenosphere. A major scientific challenge is to reconstruct as accurately as possible the original alignment of the continental plates. In a departure from conventional wisdom, several authors propose a novel rearrangement that places Madagascar (the small unlabeled island in the cover photo) in a controversial location, along the southern African coast. The fit is made at the 2,000-meter level of the continental shelves (gray area). See p. 370. (From E.J. Barron, C.G.A. Harrison and W.W. Hay)

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LETTERS

Hazards of smoking prevention

Stanley Schachter's research concerning the "psychobiological machine within every smoker" (SN: 5/7/77, p. 297) holds promise for those wishing to end their smoking habits. However, you may want to publish the following precautions for those do-it-yourselfers who try to lower their own urine acid levels. The use of Alka Seltzer or bicarbonate as suggested in the article will result in the ingestion of a considerable amount of salt, as this is the resulting product from the neutralization of stomach acid by such methods. Those who should be on low-salt diets or individuals with high blood pressure should consider this fact. Others who attempt to maintain high pH levels with large doses of bicarbonate, for example, may make their stomachs so alkali as to trigger stomach acid production, thereby undoing what they had set out to accomplish in the first place.

In addition, many antibiotics are not effective in an alkali medium.

For these and other reasons, any attempt to lower, or maintain low urine acid levels, should be made in consultation with a physician.

*John P. Dworetzky, Ph.D.
Department of Psychology
Glendale Community College
Glendale, Ariz.*

On the face of it, Stanley Schachter's proposal to redesign the cigarette (SN: 5/7/77, p. 297) reminds me of the fabled answer of the Irish ditchdigger of an earlier generation when asked what he would do with a million dollars if it were his. "Begorra," he said, "oi'd have me a shovel with a longer handle."

Is it not possible to feel the effects of nicotine unless it is inhaled? If other means of ingestion were available, it could be made possible for the smoker to quit in two stages, dealing first with the habit and later with the addiction. If he found it impossible to shake the addiction, he could continue with the nicotine and still be home free from the ill effects of the smoke and tar.

Schachter's important findings therefore carry a clear indication of further work, possibly financed by somebody other than a cigarette manufacturer, to make available a form of nicotine or an adequate substitute that can be taken without the smoke.

Let me add a word in appreciation of SCIENCE NEWS, which I find of indispensable interest and value.

*Frederick J. Hooven
Professor of Engineering
Dartmouth College
Hanover, N.H.*

I was pleased to see the advance in knowledge made by Stanley Schachter, et al., in the area of tobacco addiction. However, his "advocating the construction of a 'sane' cigarette" is understandably more in line with the aspirations of Philip Morris (who supplied the research funds) than with the interests of the majority of people. I refer to the nonsmokers, who, in addition to having to foot their share of the tax bills set aside for known hospitalization effects of tobacco smoke on smokers, are still (in spite of a few progressive by-laws to the contrary) being subjected to the "ill winds" of second-hand smoke: Both the mainstream smoke exhaled by the smoker and, probably more important, the sidestream smoke coming off the burning end of the cigarette.

*Hans Hvermann
Weston, Ontario
Canada*

New potentials of X-rays

Your article "Into the X-Ray Microcosm" (SN: 3/12/77, p. 171) and the cover photograph were most interesting. This is a fascinating and rapidly expanding application for soft X-ray emission. As I understand it this is indeed a specific requirement for soft X-radiation in the 5-50 angstrom spectral region, which was not pointed out specifically. Also, to your comment that appropriate intense X-ray sources are not easily obtained, I would add that active research is continuing towards developing soft X-ray lasers, with wavelengths in the 500 Å region now considered a reality for the not too distant future and 10 Å within the realm of present understanding of processes and pump sources [PROC. IEEE 64, 1059 (1976)]. A useful forecast of the potential for X-ray lasers for this application is provided in a recent report (No. PD-LJ-76-132) by Physical Dynamics, Inc., of La Jolla, Calif.

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