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**Cover:** The natural ecology of Fire Island, N.Y., like that of many other splendid barrier beaches (islands and spits) skirting the Atlantic and Gulf coasts of North America, is being threatened by offroad vehicles, campers, condominiums and other inroads of civilization. Although ecologists and environmentalists are trying to save what's left of this ecology, it's a tossup over whether they can move fast enough to do so. See p. 10 (Photo: Robert Perron, New York City).

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# LETTERS

**Utilitarian pions**

As a graduate student doing research in the somewhat esoteric field of pion photoproduction on nuclei, it was gratifying to see your cover story devoted to pion cancer therapy (SN: 12/9/78, p. 410). Now, when curious students ask me, "But what are pions good for?" I can point to at least one application of pion research outside of the field itself. (My old response, that pions are the glue holding the nucleus together, often failed to impress.)

By the way, add my name to the list of sharp-eyed readers who wrote to tell you that the pion mass is about 140 MeV and not 273 MeV as stated in your article.

*Victor A. DeCarlo*  
*University Park, Pa.*

**The tune of a different tide**

I have seldom found a SCIENCE NEWS article of more interest than Susan West's report on the nautilus (SN: 12/16/78, p. 426). There is a special fascination to me in those cross-disciplinary studies that somehow tend to "tie it all together."

In this regard, there is a point — quite speculative — that I wish to make. The nautilus feeds largely on crabs, lobsters and other crustaceans, and these animals shed their shells with what regularity I really can't say. But back in Barnegat Bay (N.J.) where I grew up, the general belief held that the blue crab shedding was by far the heaviest around the time of the full moon. Science or not, all my data from hundreds of hours a season hunting soft-shelled crabs (that remain soft only a matter of hours after the molt) as a boy tended to substantiate this idea. (There is, of course, the influence of extreme tides on where the crabs will be and how readily they can be found.) The soft-shelled crab, lobster, or crayfish is unarmed and unarmored, incapable of fast flight, and just about one hundred percent edible. Since the nautilus is not purely benthic — occurring at 20- to 1,000-foot depths according to the single source I investigated — and since even for a deep dweller, his prey might migrate in and out of the tidal zone, might not the biorhythm of the nautilus well beat to the tune of the tide?

*Marvin E. Kahn*  
*Germantown, Md.*

**Defining schizophrenia**

The apparent contradictions in the treatment of "schizophrenia," as revealed by your reader's letter (SN: 12/9/78, p. 403), reveals the need for further understanding of the meaning of this word. It has been used as a label for many dissimilar kinds of behavior: catatonia, paranoia, apparent loss of emotions, hallucinations, and the list goes on. Such a broad range of indicators, which to date have never been

shown to be simultaneously present in any given patient, can only lead to the conclusion that we are dealing with more than one disease, possibly several different diseases, with different cures.

Until biochemists and other researchers can find specific objective evidence (biochemical markers) that correlate with specific symptoms, then these necessarily different afflictions will continue to remain a mystery under one obscuring title.

The American Psychiatric Association can be of immense service to itself and to all of us seeking to understand "schizophrenia" by leading an effort to abolish this word and the concomitant confusion it causes. (The APA has already taken a step in this direction by the abolishment of "neurosis.")

Precise as possible reporting of patient symptoms will be the ultimate key to isolating and eventually understanding each affliction in its own light. It is this kind of reporting that has made SCIENCE NEWS a source of gratification in the search for answers to all sorts of questions.

I sincerely look forward to future articles on the subject of "mental illness" for clues to the answer to this old mystery, which is becoming less a mystery all the time.

*Gary J. Cook*  
*Portland, Mich.*

**Non-natural prevention**

According to the interesting news-of-the-week article "Natural prevention of genetic defects" (SN: 11/25/78, p. 379), Ernest Hook failed to take into account a plausible non-natural cause for the higher incidence of spontaneous abortion among the twenty-one pregnancies in which women knew they were carrying a child afflicted with Down's syndrome. A woman who elects to have amniocentesis is worried about the state of her child. If she does so under doctor's orders, she knows she has reason to be worried. If as a result she is told that her child is defective, it is difficult to believe that her emotional outlook and resultant self-care would be the same as it would have been if she had been reassured that everything seemed o.k.

A control subpopulation that could be checked for last-half term spontaneous abortion rate that might allow for a psychological factor would be women who bear children strongly against their will. These could include those denied abortions on religious, legal, or economic grounds. Another source could be anonymously compiled data from "typical" Ob's. It seems reasonable that most experienced obstetricians can make fairly accurate guesses about their patients' overall attitudes about being pregnant and having a child. If the spontaneous abortion rate in the latter half of pregnancy is no higher for this subpopulation than it is for the total, then Hook is probably justified in attributing the higher incidence in his study to Mother Nature's effort to eliminate defects. If, on the other hand, it is higher, then the study would provide little reassurance to those who are over 40 and expecting.

*Fran Tabor*  
*Kalispell, Mont.*

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