recommended, on the basis of its scientific studies, gradual increases in the quota as the vessels have fished farther offshore and caught fish that were underutilized a few years ago. The staff zealously monitors the fishery to detect signs of overfishing; if such signs occurred, the staff would recommend stricter regulations.

The Inter-American Tropical Tuna Commission cannot be a perfect answer to the conservation of tunas in the eastern Pacific Ocean, as many aspects of the life histories and population dynamics of these fish are yet not well understood. However, international cooperation, based on scientific studies, is clearly the most rational way to prevent disastrous overfishing of these important food fish.

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Reference

1. *Annual Report, 1973* (Inter-American Tropical Tuna Commission, La Jolla, Calif., 1973).

Keith Brouillard, head of the division of International Fisheries Analysis, National Marine Fisheries Service, was my authority for reporting that there already has been an "over catch" of yellowfin tuna this year. But Brouillard now concedes that it may well be true, as Joseph contends, that the total catch for the year will be within the established quota or will not exceed it significantly.—L.J.C.

Optical Brighteners and Social Responsibility

In response to Deborah Shapley's article (News and Comment, 12 October 1973, p. 145) about me and my activities in Sweden as an environmentalist and scientist, my colleagues Kilbey and Zetterberg (Letters, 1 March, p. 798) comment on optical brighteners, which are added to detergents, body soaps, paper, and so forth. It is suspected that these compounds cause genetic defects and it is well documented that brighteners have been the cause of allergies (*1*, *2*). However, Kilbey and Zetterberg claim that they have not been able to repeat my experiments (*2*) indicating mutagenic effects of certain brighteners in yeast.

Kilbey and Zetterberg also say, "At a meeting in Stockholm at which one of us reviewed the genetic activities of optical brighteners, Gillberg himself admitted that he is now unable to obtain positive results with these compounds." However, I also mentioned at that meeting that, after publishing my paper about brighteners in 1971, I discovered that only the original samples of brighteners that I had obtained from detergent producers induced mutations in yeast, while samples of the same brighteners obtained later did not induce mutations. This appears to indicate that the brightener producers either modified the brightener in question or that some kind of impurity now and then occurs in the brighteners that might induce mutations in yeast.

I also reported at the Stockholm meeting that I had discovered that the samples of brighteners that induced mutations in 1970 in several trials did not do so when tested 2 years later. I said that this might indicate that the factor in the brighteners that induced mutations in my early experiments was maybe not very stable and might have been inactivated because of the long storage period (at least 3 years from the time of production).

Kilbey and Zetterberg state, "If we startle the public too many times with sensational claims that are later retracted, we run a real risk of loosing our most valuable ally if and when a real crisis comes." I agree completely with Kilbey and Zetterberg. However, I have not made any sensational claims about brighteners; the only thing I say in my paper (*2*) is that I consider it of importance to carry on with genetic studies of brighteners against the background of my results. Research has now begun in other laboratories that should have been undertaken before the brighteners were released on the market. The benefits of a product must of course always be weighed against the risks it may create. In such a situation I prefer not to give the product the benefit of the doubt if there are some questions raised. Questions have been raised about these compounds, and I believe that it is my social responsibility to tell my fellow citizens about them.

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2. B. O. Gillberg and J. Aman, *Mutat. Res.* **13**, 149 (1971).