CORRESPONDENCE

Synthetic Pyrethrins

SIR,—We would like, on behalf of the pyrethrum industry, to comment on the article "Pyrethrin Prospects" (*Nature*, **233**, 441; 1971).

We cannot agree with your viewpoint that the pyrethrum industry will suffer a "fate" similar to certain natural products. Incidentally, the one you mention, quinine, is said to be doing extremely well.

It may be worthwhile to look at some facts about synthetic pyrethroids. Initially, Allethrin, which got off the ground in America as a strategic contingency measure, declined at the end of the war and survived in Japan only under a heavy discriminatory tariff against imported natural pyrethrum. This tariff being still in existence, it comes as no surprise that the new generation of synthetics being manufactured there are enjoying similar protection. To put the new synthetic products in a nutshell, what you get, at least for aerosols, is either an economic level which results in good kill with medium knockdown, or an uneconomic level which gives good knockdown and overkill: hardly an easy choice for the formulator.

The point about lower acute toxicity rates (rat) for synthetics is interesting academically, though it does not summarily relegate natural pyrethrins into a separate toxicity class. At least one synthetic pyrethroid sank without trace during its development stage, because of high mammalian toxicity. We do not know if the toxicity figures for synthetic products represent chemically pure specimens or the practical commercial materials, but believe that the manufacturers ought to state what solvents, aromatic or otherwise, are used. Again, no assay method exists for determining synthetics in the presence of aromatic solvents, pyrethrins and synergists.

We are rather surprised that natural pyrethrins should be labelled as causing sneezing, when for years aerosol formulators have known[1] that one or two commercially produced synergists are more indictable. Indeed, lately one of the new synergists, 'Tropital', has appeared on the market claiming specifically "non-sneezing" properties. We cannot agree that the prices which you quote for synthetics make them competitive with pyrethrins. All pyrethroids are certainly out of the class of organochlorides, and always have been, but this is a point hardly at issue these days. The new technique of ultra-low volume dispersement (ULV), especially by aircraft, opens up a huge range of uses for pyrethrins hitherto closed, due to the adverse economics of the quantities involved. In addition, interesting new repellency factors are being established about pyrethrum, which also offer new uses.

Where the synthetics *have* succeeded has been due to recent shortfalls in the production of natural pyrethrum. This was caused in East Africa by a switch-over to high content pyrethrum clones, which coincided with unusual drought conditions and led to the loss of many plants and a severe overall setback in production. The rationale of producing high content pyrethrum plants, however, is that, with no more effort, two or three times the quantity of pyrethrum can be produced from the same weight of dried flowers, and the economics of this are obvious.

Yours faithfully,

D. R. MACIVER
Director

The Pyrethrum Bureau,
PO Box 420,
Nakuru, Kenya, East Africa

[1] Zucker, A., "Investigation of Purified Pyrethrum Extracts", *Annals of Allergy*, **23** (1965) (vide *Pyrethrum Post*, **8** (3), 7–9).

Phosphate Detergents

SIR,—I think that the article by your Washington correspondent putting down the environmentalists ("Algae Better Than Burns", *Nature*, **233**, 229; 1971) was in itself somewhat hasty. The movement towards phasing out phosphates certainly did not occur overnight. And I find it hard to believe that the detergent manufacturers have really spent "millions of dollars" testing alternatives. I believe that he has simply quoted company rhetoric without verifying it, which is as reprehensible in an editorial as it would be in a scientific paper. After all, what is needed to perform a scientific test of a detergent's effectiveness but a washing machine and a few dirt-stained collars? This used to be proved nightly on television. The abuses to the environment (and thus to ourselves) can and will be stopped: the ecology movement is not going to go away. Once that is accepted, the priorities become clear. To have made a wrong move (if indeed it was) on the way to the right goal is not a tragedy. I think that the reason so many people have been jumping into ecology with both feet lately is that they have discovered the indescribable bliss that comes from ceasing to do something wrong.

Yours faithfully,

MARK WIRTH

10212 *Capitol View Avenue,*
Silver Spring, Maryland 20910

SIR,—In three recent issues of *Nature* (**233**, 229, 295, 362; 1971), you have discussed the dilemma over phosphates in detergents. But there is one question with which you have not concerned yourself: are phosphates necessary to get a wash clean? This, I believe, is a crucial question. Detergent manufacturers have claimed that everyone's wash will come out a tattletale-grey if we stop using detergents, whether these detergents contain phosphates or a phosphate-substitute. This is simply not true.

I tried an experiment where I put two extremely dirty laboratory coats in with my regular weekly laundry. I used only soap and washing soda. Both coats came out white. I will not deny that phosphates do help to get a wash clean, but I am convinced that a high percentage (40–60 per cent) is quite unnecessary. (Another point: high-phosphate washday products are invariably high priced.)

For these reasons I cannot go along with the Environmental Protection Agency's unreserved endorsement of phosphates. If they had endorsed low-phosphate (10–20 per cent) detergents only, I could understand that. But to say in effect that high-phosphate detergents are necessary for a clean wash, and that we have no choice but to put up with the pollution from them, is economic and ecologic nonsense.

Yours faithfully,

GRETCHEN LUEPKE

Office of Marine Geology,
US Geological Survey,
345 *Middlefield Road,*
Menlo Park, California 94025