

or body wall. In that case the advantage of "insoluble" over "soluble" copper compounds in mollusc control would lie in greater persistency and greater availability to bottom-living creatures, rather than in a different mode of action. It would seem to make little difference what the source of sparingly soluble copper is.

This assumption would also explain the differences in the toxicity of SCS to fish found by Deschiens et al.^a and ourselves. At pH 6.5 there might be insufficient soluble copper available to affect free-swimming fish, while the bottom-living and bottom-feeding snails would take up enough to be killed. At the low pH employed by us there is sufficient copper ion in solution to kill both.

The practical significance of these results requires confirmation under field conditions. It is possible that marginal differences in solubility and pH-sensitivity are of great importance. Judging from laboratory findings only, it would appear that the choice between different copper compounds of low solubility for mollusc control is largely a matter of formulation, availability and price.

* * *

We are indebted to the World Health Organization for a grant under research contract; to Fisons Pest Control Ltd for samples of Blitox and technical copper oxychloride; to Plant Protection Ltd for a sample of Perenox; and to McKechnie Brothers Ltd

for samples of the copper powders mentioned in the last tabulation.

Postscript, 24 June 1963

Since writing the above, we have examined the toxicity of solutions of cupric sulfate, Perenox and SCS at pH 5.5 and pH 8.5 after standing for 4 days and then centrifuging, exposing the snails in nylon bags for 24 hours. There was better correlation between the measurements of copper ions and snail mortality after 5 days' recovery, indicating that the lack of correlation obtained previously was probably due to the differential ingestion and/or direct contact with undissolved particles and supporting the theory that toxicity is a function of ion concentration.

It is likely that the cuprous ion has been oxidized to the cupric ion in solution, which would account for Perenox and SCS giving the same order of diffusion current as CuSO₄.

	pH	Diffusion current (arbitrary units) *	Cu by colorimetry (p.p.m.) **	Approximate LC ₅₀ (120 hours' recovery)
CuSO ₄	5.5	14.6	4.5	<0.1
Perenox	5.5	15.8	4.3	0.1
SCS	5.5	10.6	3.5	0.2
CuSO ₄	8.5	—***	<0.1	>5.0
Perenox	8.5	—***	0.21	2.0
SCS	8.5	—***	0.13	5.0

* Corrected for dilution by acid fuchsin solution.

** Theoretical maximum 5 p.p.m.

*** Not measurable.

CORRIGENDA

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The Control of *Simulium damnosum* at Abuja, Northern Nigeria, 1955-60

Page 494, left-hand column, line 26

Delete 165 mm
Insert 1650 mm

Page 507, left-hand column, line 13

Delete 9/8d.
Insert 9.8d.

A Survey of *Simulium* Control in Africa

Page 518, left-hand column, 4th line from the bottom

Delete 10/-
Insert 10d.