

Correspondence

New head-lice repellent

SIR, During a recent *in vitro* investigation of the activity of piperonal it was noted that human lice, *Pediculus humanus*, were reluctant to walk on material treated with the chemical. Piperonal (1,3-benzodioxol-5-carboxaldehyde) is widely used as a fragrance and flavouring agent. It was first reported to have pediculicidal activity by Moore in 1918¹ and later used in Australia for treatment of head lice,² but there was no mention of repellent activity at that time.

Some repellent activity against clothing lice has been reported previously for lavender oil, and a mixture of complex glycols showed some effect on crab lice,³ but hitherto no attempts have been made to use repellents against head lice. The activity of piperonal was detectable at low concentrations compared with other repellents, but initial tests, using simple solutions in alcohol, were inconsistent because piperonal is normally a solid when not in solution at temperatures below 37°C. Formulation of 2% piperonal in an aqueous base containing proprietary solubilizing agents and 30% alcohol (Rappell®) allows piperonal to be sprayed on to hair without crystallizing out. In the laboratory human hair treated at one end, and filter paper discs, treated on half their surface, consistently demonstrate a 90% or more inhibition of incursion of lice onto the treated area. Such a product could serve two purposes:

1. After treatment of head-lice infection with an appropriate insecticide lotion, application of piperonal formulation will protect from reinfection whilst contact tracing is being performed.
2. Anecdotal reports indicate that currently there is widespread use of insecticide products by the public in the hope that they will act prophylactically. The availability of a true repellent precludes any excuse for such misuse of insecticides.

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References

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- 2 Corlette CE. Heliotropine: the best pediculicide. *Med J Aust* 1925; 1: 185–6.
- 3 Spencer G. The control of human lice under war conditions. *Canadian Entomologist* 1941; 73: 20.