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hyperesthesia tends to persist in some patients, and the pain continues in spite of the therapeutic efforts.

In our patients suffering from the pain of herpes zoster, we were often able to give immediate relief by painting the lesions and the immediately surrounding area with flexible collodion. Reapplication of the collodion was necessary every 12 hours for prolonged results.

When applied to the skin, the ether of collodion evaporates and a transparent film is left. The adhesiveness and contractility of this film has a protective effect on the herpes zoster lesions, preventing irritation.

Flexible collodion contains at least 5% by weight of pyroxylin. It is colorless or slightly yellowish and has the odor of ether; on exposure to the air, a transparent, tenacious film forms.<sup>1</sup>

For years, collodion has been used topically for its mechanical properties and to hold some medications locally in contact with the skin. In the treatment of herpetic neuralgia, the use of flexible collodion successfully may resurrect a valuable therapeutic tool.<sup>2</sup>

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### Nail Damage Caused by Weed Killers and Insecticides

*To the Editor.*—The onychopathy described here, first noted by Samman and Johnston in 1969,<sup>1</sup> is not common but very characteristic.

On Feb 15, 1972, a 65-year-old white man used a phytosanitary product (Winter Volck Yellow, Sopra) for the treatment of fruit trees. He neglected the recommendation on the label and instead of mixing 1 liter of the product with 50 liters of water, he handled the chemical in a pure state for three hours.

After 15 days, he noticed some change in the color of his nails. Two months later, the nails appeared to be made up of two portions: the proximal third of the nail plate was yellow and the distal two thirds was pink. The cuticle was absent and there was a slight painless paronychia (Figure). Seven months later, edema of the proximal nail fold had not completely



Appearance of nails after two months.

disappeared. A whitish sebaceous-like material could be squeezed from it, which showed isolated or grouped keratinocytes under microscopical examination. There were no bacteria or fungi present. At this stage, the proximal yellow area made up about half the nail plate, indicating a slowing of the nail growth. The product used by our patient was 5% dinitro-ortho-cresol, which acts both as an insecticide and as a weed killer.

Our patient's condition resembled those of the patients who had handled diquat and paraquat, as described by Samman and Johnston. One of their patients had the same yellowish discoloration of the proximal part of his nails, whereas the two others had a whitish discoloration.

Possibly, damage and discoloration of the nails are caused by chemicals reaching the nail matrix by entering the proximal nail fold.

Clarck and Hurst<sup>2</sup> have studied the toxicity of diquat. A 20% solution can cause disturbance of nail growth when put in contact with the base of the nail for a few minutes. A white, opaque, area appears that gradually moves up with the growth of the nail until it is shed. On histologic examination, this focus of leukonychia consists of a collection of cells that have retained their nuclei.

Exposure to dilute solutions used for spraying may lead to harmful effects on the nail. Hearn and Keir<sup>3</sup> described nail damage in 55 out of 296 spray operators who were exposed daily to diluted paraquat while working on a sugar estate in Trinidad. Five grades of severity of nail damage were recognized:

Grade I: Localized discoloration or transverse band of white discoloration affecting nail plate only.

Grade II: Transverse bands of white discoloration affecting two or more nails (the commonest lesions).

Grade III: Nail deformity of the

nail surface; irregularity of surface; transverse ridging and furrowing.

Grade IV: Grossly irregular deformity of nail plate and/or loosening, and beginning onycholysis.

Grade V: Loss of nail.

The distribution of the nail lesions confirms that these are the result of a local action. The index, middle, and ring fingers of the right hand were predominantly affected and this could be ascribed to leakage from the knapsack sprayer. Eleven of the affected spray operators also showed minor nail damage affecting the toes. However, the only cases of toenail damage occurred in workers wearing gum boots, suggesting leakage from the sprayer down into the boots. Toenail damage has been encountered in barefoot sprayers on coffee plantations in Kenya.<sup>2</sup> These observations by Hearn and Keir<sup>3</sup> show that dilute solutions in repeated use can produce the same damages as the concentrated ones on brief contact.

Contact with weed and insect killers in concentrated solutions or on repeated usage of diluted solutions can produce a distinctive damage and discoloration of the nails. The proximal part of the nail plate becomes yellow or whitish. Deformity of the plate can lead to its loss.

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2. Clarck DG, Hurst EW: The toxicity of diquat. *Br J Ind Med* 27:51-55, 1970.

3. Hearn CED, Keir W: Nail damage in spray operators exposed to paraquat. *Br J Ind Med* 28:399-403, 1971.

### Need for Action

*To the Editor.*—The special editorial by Peyton Weary that appeared in the April issue of the ARCHIVES (109:499, 1974) contained some of the most important information for dermatologists that has appeared anywhere at any time.

It is essential that we, as physicians and dermatologists, cooperate with and work with the National Program for Dermatology because our future depends on our actions in a myriad of ways. We would read and reread this editorial to find out what we might and should do, and then, after reading it, do something about it.

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