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Conversion of Dithranol in Ointments and Pastes

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Patch tests were performed with dithranol in different vehicles; some of these ointments had been prepared freshly, others were one or more days old.

By comparison of 0.1% dithranol in petrolatum with the same percentage of dithranol in zinc paste, both ointments being more than one month old, the patch tests with the former ointment were generally positive and with the latter negative. Moreover, the latter ointment had a brown colour. A conversion of the dithranol in the latter ointment, therefore, seemed to be possible.

In a further experiment the patch test with 0.1% dithranol in zinc paste appeared to become negative after standing the ointment for three days. Moreover, it appeared to be possible to observe the same phenomenon in petrolatum as a vehicle, provided the ointment was allowed to remain for three days, smeared in a thin layer, on a piece of cotton. It proved to be impossible to induce this phenomenon by ultraviolet irradiation.

In petrolatum containing 10% water, 0.1% dithranol took on a brown colour after standing for one week. The patch tests with this ointment, however, remained positive, also after the colour had turned to brown. If this brown ointment was allowed to remain for one day, after smearing in a thin layer on a piece of cotton, the patch test became negative.

At the moment it is still uncertain by which process the discoloration and the loss of activity in the patch test of the dithranol is caused. Probably oxidation plays an important role; it is also still uncertain what the consequences are of this for therapy with dithranol, but it is clear that unexpected irritation by dithranol is possible by using a freshly prepared ointment immediately after the use of an older ointment, especially if the vehicle is zinc paste.

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