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Formulation of Polyethylene Glycol Oinment Bases Suitable for Tropical and Subtropical Climates I.

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Introduction

Temperature, humidity and sunlight are the major factors likely to affect the stability, spreadability and consistency of ointments used in tropical and subtropical areas. Systematic research is necessary to formulate stable ointment bases that will remain on the skin over a wide range of temperature without significant change in form or texture. Numerous investigations have been made on this subject, but no attempt was made to their application in tropical and subtropical climates [1—6]. *Regdon* et al. [1] studied the Hungarian Pharmacopoieal suppository bases composed of blends of polyethylene glycols to improve their consistency, and they suggested that, the pharmacopoieal polyethylene glycol should be by polyethylene glycol 1540 containing Span 61. *Gasim* and *Szepesy* [8] dealt with this problem using the B. P. ointment bases, and they concluded that their methode were not satisfactory for proper selection of ointment bases for tropical climates. On the other hand, *Ugri-Hunyadvári* and *Hadi* [7, 8], using different techniques, investigated some ointment bases that might be useful in tropical areas.

The purpose of the present work was to investigate the suitability of polyethylene glycol ointment bases for tropical and subtropical climates. The evaluation of the suggested ointment bases would be based on the physical characteristics of these bases.

Materials and methods

Polyethylene glycols 300, 400, 600, 2000, 4000 and 6000 were purchased from Fluka AG Chemische Fabrik (Buchs SG, Switzerland).

Drop point determinations were performed by Ubbelohde apparatus, as indicated in the S. P. [9]. Determination of congealing range was conducted by the Double-walled Zhuckov flask (Ph. Hg. VI.) [10]. Extrusion test were performed by the parallel plate method [11].

Results and Discussion

Drop Point Determination

Using the Ubbelohde apparatus [9], the drop point of prepared polyethylene glycol ointment bases was determinated, and the values obtained in these experiments were expressed as a function of solid content of the respective bases *(Table I)*.

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