

a circumstance which that observer ascribes to a difference in power of osmosis and consequent greater delay in elimination of the synthetic article. Charteris' noted in experiments upon rabbits that the artificial acid, administered in much smaller doses than the natural product, was badly borne, and continued for any considerable time produced death in the animals. Undoubtedly, the untoward effects which have been frequently observed after the administration of the salicylates, are due in many cases to toxic substances such as hydrochloric acid, and—of more importance and frequency—carbolic acid derivatives (paracresotic and orthocresotic acids), which have not been fully eliminated in the evolution of the drug. There should under no circumstance be any suggestion of the odor of phenol, nor should any residue remain when the therapeutic article is heated on platinum foil.

*Solubility.*—Salicylic acid is soluble in 2.4 parts of alcohol; in 450 parts of water at 59 deg. F. Its solubility in water is greatly increased by the addition of the phosphates (10 per cent.), citrates and acetates of the alkalis, or 8 per cent. of borax. It may also be dissolved in 2 parts olive oil (hot), or in 30 parts sweet spirits of nitre.

#### PHYSIOLOGICAL ACTION.

*Local Action.*—Salicylic acid has practically the same effects as the salicylates and salicin when administered to animals, except that it is much more irritant to the skin and mucous membranes. Not infrequently it causes irritation of the mouth and throat when taken internally as a powder, and congestion and erosion of the gastric mucosa have been noted in rare cases. In dilute solution, it is largely free from these injurious qualities; although anorexia, indigestion and nausea are not infrequent attendants upon its use, in either way of exhibition. These effects have been ascribed to the direct interference of the drug with the action of the digestive ferments upon food. It has produced albumen in the urine and hematuria by irritation. Insufflated, salicylic acid is decidedly irritant to the respiratory passages, exciting coughing and sneezing. Applied locally to the skin, swelling of the epidermis occurs, followed, if the contact is prolonged, by desquamation, exfoliation, and eventually, by edema and necrosis. It is also anhidrotic, checking local perspiration when locally applied.

*Absorption and Elimination.*—Local absorption of salicylic acid when applied as an aqueous solution, an ointment, or as