

statement of O'Donovan concerning the striking discrepancy between the marked recent increase in the number of industrial dermatoses and dermatitis and the stationary number of industrial cutaneous cancers must be looked upon with a great deal of reservation for obvious reasons.

BIBLIOGRAPHY

GENERAL ANATOMICAL AND ETIOLOGICAL CONSIDERATIONS

O'DONOVAN, W. J., M. Press & Rec. suppl. XVII, 1938.

2. CHEMICAL AGENTS

A. INORGANIC CHEMICALS

a. ARSENIC—I. CHEMICAL AND TECHNOLOGICAL ASPECTS

The occurrence of arsenic in nature is widespread. It is found in the ores of numerous metals (antimony, cobalt, silver, bismuth, iron, zinc, tin, lead, nickel, gold, copper) either as an impurity in an elementary form, or as a sulfide, or in combination with iron. Arsenic represents, therefore, a by-product or waste product of the smelting process of these ores. Huge quantities of arsenic fumes may be generated during these operations. Often no attempt is made to remove the arsenic from the fumes prior to their release into the atmosphere. Where this is done, the fumes are condensed in order to recover the arsenic. The condensation apparatus consists either of an extensive system of canals and chambers, in which the fumes are cooled and the arsenious trioxide is precipitated, or of an electrical appliance which is capable of freeing the waste gases of arsenic, produced during the roasting of the ores ([method of Cottrell-Möller] Ullman, F.). The crude arsenic obtained then is purified by repeated sublimation in furnaces, followed by the recondensation of the vapors formed.

This purified arsenious trioxide (As_2O_3) represents the principal arsenical from which the many other arsenic compounds are developed for manifold uses in industry, medical therapeutics and other purposes.

Arsenious oxide is employed in the glass making industry for the clearing and purification of glass (removal of carbon particles and of color resulting from the presence of lower iron oxides). This compound serves as the basic substance in the production of the various arsenicals used: (a) in the form of *sodium arsenite* as sheep dip (against ticks), for grasshopper bait (in Russia, South Africa, North and South America) and as an agent to destroy plant life (between railroad ties in the tropics); (b) in the form of *lead arsenate*, *copper arsenate* and *calcium arsenate* as an insecticide, germicide, and vermicide (rat poison) in agriculture and forestry (fruit orchards, vineyards, truck gardens, and cotton plantations). It is used in the manufacture of enamel, pigments (realgar [As_2S_2] and orpiment [As_2S_3]), Scheele's green (CuHAsO_3), Schweinfurt green ($\text{Cu}[\text{C}_2\text{H}_3\text{O}_2]_2-3\text{Cu}[\text{AsO}_2]_2$) employed as coloring mat-