

agriculture, flora and fauna", and feral goats, which are on the increase and destroy numbers of plants. It would seem advisable to encourage unrestricted hunting of these animals; the fate of the Galapagos Islands, otherwise, will be similar to that of the Mexican island of Guadeloupe. Levêque emphasizes the mistake of prohibiting hunting of feral animals introduced to the Islands. The result is contrary to the objective pursued; the defenceless native fauna, the destruction of which does not require the

use of fire-arms, pays the consequences and serves as food for the settlers.

A number of sound recommendations conclude the survey: engagement of an experienced botanist to undertake methodical inventory of the plant species represented; careful study of the biology of the land tortoise, and, later, of both iguanas, *Amblyrhynchus* and *Conolophus*; efforts in the fields of oceanography and meteorology resulting in a marine research scheme and the establishment of climatological stations.

## INDUSTRIAL HEALTH

THE annual report of the Chief Inspector of Factories on Industrial Health in 1959 follows the pattern of the two previous separate reports, and this year includes a special chapter on "Dusts and Their Effects on the Lungs". The establishment at headquarters of the new pathological laboratory permitted a substantial increase in the number and variety of tests, and the combined chemical and pathological work has made possible the examination of an increasing number of workers. The Chief Inspector again emphasizes his anxiety to foster the liaison between the medical branch of the Inspectorate and members of the medical profession generally, which he regards as of great importance if due weight is to be given to significant occupational factors in the health of work people. The 532 cases of industrial poisoning or diseases, notified under the Factories Act, 1937, and the Lead Paint Act, included 64 non-fatal cases of lead poisoning, 6 cases (1 fatal) of anthrax and 25 non-fatal cases of aniline poisoning; 226 notified cases of epitheliomatous ulceration included 9 fatalities, and there were 192 cases of chrome ulceration, while 14 of the 206 gassing accidents were fatal.

The First Aid in Factories Order, 1938, was superseded by the First Aid Boxes in Factories Order,

1959, on January 1, 1960, which brings the contents more into line with modern practice than under the 1938 Order. Interdepartmental discussions on the general principles of first-aid treatment were attended by independent medical experts nominated by the Medical Research Council and members of the Advisory Panel in Ophthalmology were consulted on the first-aid treatment of eye injuries, while at the two meetings during the year of the Industrial Health Advisory Committee the possibility of developing and extending medical supervision in factories was the main subject discussed.

Publication of a new booklet, "Toxic Substances in Factory Atmospheres", was approved. The special chapter on dusts and their effects on the lungs points out that it is now becoming increasingly doubtful whether it is safe to assume that any finely divided dust is harmless if inhaled in sufficient quantity over a sufficient period. Certain dusts, too, may produce an acute inflammatory response in the lungs when they are breathed, and others, usually after many years, may bring about a cancerous development in some part of the respiratory tract. The chapter outlines some general principles on measures required to protect workers against inhaling injurious dusts as well as briefly summarizing existing knowledge about the action of particular classes of dusts.

\* Ministry of Labour. Annual Report of the Chief Inspector of Factories on Industrial Health, 1959. Pp. iii+60. (Cmd. 1137.) (London: H.M. Stationery Office.) 3s. 6d. net.

## X-RAY DIFFRACTION STUDIES OF THERMALLY DECOMPOSED PERMANGANATES

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THE thermal decomposition of crystals of silver<sup>1</sup>, potassium<sup>2</sup>, rubidium<sup>3</sup>, caesium<sup>4</sup> and barium<sup>5</sup> permanganates in high vacuum yield pressure-time plots which are sigmoid in form. The plots for the decomposition of crystals of potassium permanganate (13.6 mgm.) and silver permanganate (20.6 mgm.) at 217° C. and 110° C., respectively, are shown in Figs. 1 and 2. The acceleratory and decay portions of the curves for the above permanganates, except silver permanganate, are described by the Prout-Tompkins equation<sup>2</sup>:

$$\log [p/(p_f - p)] = kt + c$$

where  $p_f$  is the final pressure. The plots for the decomposition of silver permanganate obey a modified form of the equation<sup>1</sup>, namely:

$$\log [p/(p_f - p)] = k \log t + c$$

These equations follow if it is assumed that at the commencement of the acceleratory period strain exists in the crystal at the interface between the product formed prior to acceleration and the undecomposed material. This strain produces micro cracks in the reactant surface, and the reaction progresses inwards by a mechanism of branching planes of reaction. Mechanical disruption of the crystal, as in the case of potassium permanganate, is a consequence, not the cause, of branching. Silver permanganate, for example, does not disintegrate during reaction. It is of interest, therefore, to examine the Laue photographs of potassium permanganate and silver permanganate at different stages during decomposition when lattice distortion would be expected for both substances. Such distortion will be shown by asterism of the diffraction spots. Fig. 3, A, B, C, D, E, F, G were taken at 40 kV. and 20 m.amp. using