

4472. [Report of the Swiss Commission on Leaded Gasoline to the Federal Council on Their Activities during the Period 1947-60.] Bericht der Eidg. Bleibenzin-Kommission an den Bundesrat über ihre Tätigkeit im Zeitraum 1947-60. \**Mitt. Lebensm. u. Hyg.* (Bern) 52, (3) 135-244 (1961).

The various aspects of this report are discussed in several chapters by the several authors. The report is summarized as follows. At the same time that permission was given to add tetraethyl lead to petrol, or gasoline, in Switzerland on Apr. 11, 1947, a special Commission was appointed to follow the effects of its addition on public health. Preliminary investigations of the Comm. showed that (a) the quantity of lead in the exhaust gases from cars varies much and amounts to about 20-50% of the lead present originally in the gasoline. It consists mainly of inorganic lead salts with traces of volatile organic lead derivatives. It may reach much higher levels at higher motor speeds since the lead deposited in the exhaust pipe is then swept off by the gases. (b) The lead particles have a diam. which averages less than  $125 \mu$  and so behave practically like a gas. The few larger particles quickly fall out of the air. (c) The quantity of lead absorbed by the lungs averages 60% of the lead present in the air. The average city person, with no special exposure to leaded gasoline, takes up daily 20-30  $\mu\text{g}$ . of lead from the air by breathing. In considering reports of sickness cases allegedly caused by lead, the Comm. found that of the 65 cases reported, in decreasing numbers over 8 yrs., only 35 were proved to be related to gasoline. Of these 35 cases, 30 were caused by gasoline itself and only 5 by tetraethyl lead. In persons working with lead-containing gasoline, during 1955-56, the blood content was 22  $\mu\text{g}\%$  (range of 10-40  $\mu\text{g}\%$ ) against an average of 12  $\mu\text{g}\%$  (6-20  $\mu\text{g}\%$ ) in those who were not so occupied in 1955-6-7. Persons working in the manufacture of lead storage cells had a much higher content, 61  $\mu\text{g}\%$  (5-155  $\mu\text{g}\%$ ). A max. lead content of blood of 40  $\mu\text{g}$  may still be considered normal. In the streets of Zurich, with intense traffic, the lead content of the air was 1.4  $\mu\text{g}/\text{m}^3$  in 1949-50 with an increase to 4.5  $\mu\text{g}/\text{m}^3$  in 1960-61. These levels cannot be considered dangerous in view of the levels of 100-150  $\mu\text{g}/\text{m}^3$  established as limits for workers exposed to lead. In the dust of the streets the amount was higher, from 0.52 to 2.5  $\mu\text{g}$ . The quantity of lead ingested with food was about 0.2 to 0.3 mg./person/day in Switzerland and, under worst conditions, the air from the streets contributed 0.03 mg./person/day. These quantities are still to be considered as innocuous. It is concluded that tetraethyl lead in gasoline has not and is not currently endangering health, but that it might become a problem since the content in the air is increasing as traffic increases and since no substitute has yet been found for lead in the manufacture of gasoline. (LC)