

owing to other causes. These observations apply to plain unlacquered cans. Dissolution of tin from lacquered cans, in which 50% of canned fruits and vegetables are sold, is almost negligible.

Finally it must be stressed that, even at considerably higher levels than those quoted, metallic tin and its inorganic and organic salts when taken by mouth exhibit a very low order of toxicity. All this evidence suggests that little hazard to health would result from storage of food in opened cans. Nevertheless, in order to avoid a loss in acceptability and quality, canned foods should in general be removed from the can within 24 hours of opening.

REFERENCE

- ¹ Dickinson, D., and Raven, T. W., *Food Manufacture*, 1962, 37, 480.

Action of Phenylbutazone

Q.—*What is the mode of action of phenylbutazone in the treatment of osteoarthritis?*

A.—Phenylbutazone, a pyrazole derivative, acts mainly through its analgesic properties. It is claimed that the drug also has an anti-inflammatory action and its efficacy in superficial thrombophlebitis is cited as an example of this. In osteoarthritis its action is mostly analgesic, which is considerable. Phenylbutazone appears to have a specific action on pain due to bone and joint disease and is most marked on the spinal symptoms of ankylosing spondylitis.

Water from the Hot-water System

Q.—*Some people use water drawn from the hot-water system for making tea, cooking vegetables, etc. Can this use of water which has been circulating for some time in the hot-water system, though first boiled, be injurious to health, and, if so, in what way?*

A.—The chemical condition of water circulating in a hot-water system depends to a great extent upon the chemical composition of the feed water, the types of metals used in the circulating pipework, tanks, cylinders, boilers and taps, the temperature of the water, and period of contact before draw-off. Most hot-water systems have a fairly heavy draw-off rate during the day-time, and unless there is very marked corrosion appreciable chemical pollution is unlikely.

Boiling the water, either in the system or after drawing-off, will not affect the corrosion content. Lead pipework is not suitable but is hardly ever used in hot-water systems, and so the possibility of lead poisoning is remote. As a rule, I think there is little danger from ingesting water—in tea or in cooked vegetables—which has been circulating in a well-used hot-water system, but generally speaking I would recommend against such a practice. It must be remembered, however, that hot-water systems are served by storage tanks which are frequently uncovered and inadequately protected against contamination—e.g., by dead birds and mice. It is therefore unwise to drink water which is drawn direct from the hot-water system.

Dermatoglyphics of Thalidomide Babies

Q.—*Has anyone taken the finger or toe prints of thalidomide babies, and, if so, were the prints normal?*

A.—No published data on the dermatoglyphics of thalidomide babies are available. All deformities of limbs are associated with abnormal ridge arrangement.¹ Dermal prints of young babies are extremely difficult to take not only because of the fineness of the ridges but owing to the moist condition of the skin in early life. Dental wax has been used to make impressions of palms, and it is claimed that a dry method of taking prints can be used on very young infants. Methods involving the use of printers' ink or inkless solutions are not usually satisfactory on babies of under 1 year.

REFERENCE

- ¹ MacKenzie, H. J., and Penrose, L. S., *Ann. Eugen. (Lond.)*, 1951, 16, 88.

Proctalgia

Q.—*A man aged 66 has almost incapacitating proctalgia for hours after every bowel action. There is no detectable organic lesion. What may be done to afford relief? Extra-dural anaesthesia and anodal current have been tried in vain.*

A.—The duration of the pain clearly excludes proctalgia fugax. We are not informed about the period over which this man has suffered. If the complaint is of fairly recent onset it suggests that the case may be of like nature to those (10 males) described by Bolen¹ which were associated with prostatic enlargement and engorgement of the rectal mucosa. Since the pain in the case in question is stated to last for several hours, the first step should be to carry out a sigmoidoscope examination during an attack.

REFERENCE

- ¹ Bolen, H. L., *New Engl. J. Med.*, 1943, 228, 564.

Fumes from Copper Refinery

Q.—*I understand that zinc oxide and sulphur dioxide are present in the fumes from a copper refinery which uses scrap metal for the recovery of copper, etc. Is this probable, and also what other toxic substances are likely to be present? What are the regulations controlling such operations? What tests could be carried out to detect these impurities in the atmosphere?*

A.—It is difficult to give precise answers to questions related to a specific industrial situation without having inspected the installation in order to ascertain details of materials processed and plant. If the scrap used includes zinc-galvanized metal or brass it is possible for zinc oxide to be present in the fumes. There may also be fumes from cadmium, beryllium, and lead, etc., according to the type of scrap. If scrap cable is used from which the insulation has not been completely removed organic substances such as phenols and aldehydes may be emitted.

Sulphur dioxide emission is usually associated with the smelting of copper ore, in which the copper is mainly present in the form of copper sulphides, rather than with refining. Sulphur compounds present in the scrap would give rise to sulphur dioxide. This gas may also be present in the products of combustion of the heating fuel.

The Factories Act, 1961, section 63, deals with the contamination of air inside the factory, and the Alkali, etc., Works Regulation Act, 1906, and subsequent Orders, and the Public Health Act, 1936, relate to the emission of noxious or offensive substances.

There are a number of portable devices for measuring sulphur dioxide involving the use of a hand-operated pump to draw a sample of the gas through a detector tube, in which a colour change or stain is produced. Calibration charts or colours are provided so that an assessment of the atmospheric concentration may be made. The "Drager" (Shandon Scientific Co. Ltd.), "Kitagawa" (The Minerva Detector Co. Ltd.), and "M.S.A." (The Mine Safety Appliances Co. Ltd.) detector kits are instruments of this kind marketed in the U.K. Determination of the other substances referred to will probably require more elaborate air-sampling apparatus and subsequent chemical analysis. A Ministry of Labour publication¹ gives details of organizations able to undertake such tests within factories.

REFERENCE

- ¹ *Industrial Hygiene Services*, 1961, Ministry of Labour, Form 2081.

Correction.—In "Any Questions?" (February 2, p. 319) the para-acetamidobenzoic acid salt of 2-dimethylaminoethanol was mistakenly identified with the anaesthetic procaine. Procaine is in fact 2-diethylaminoethyl para-aminobenzoate and the answer given refers to this substance. The para-acetamidobenzoic acid salt of 2-dimethylaminoethanol ("deaner") has been discussed in "To-day's Drugs" (July 21, 1962, p. 184).