

preserved, and are sealed up within the wall of the public stairway leading to the Committee-rooms of the House of Commons; once every twenty years they are taken out and the copies, of which there are four sets, are checked against them. The primary standards for the Dominion in use until recently were procured, some in 1860 and some in 1869, and owing to improper use in the early history of weights and measures in New Zealand they have not presented a good appearance, and, moreover, some of them have become inaccurate. Consequently a complete set of new standards was ordered three years ago through the British Board of Trade; these arrived during the past year, and are now safely stored in the special standards-room of the Department. The whole of the local standards used by Inspectors throughout the Dominion are being verified and corrected. As an example of the extreme sensitiveness that is obtained by means of the appliances recently installed by the Department for testing purposes, it may be mentioned that one of the weighing instruments will disclose an error of 1 grain in the case of a 56 lb. weight—viz., 1 part in 392,000.

#### NIGHT BAKING.

As mentioned in my last annual report, a private member's Bill has been submitted to the New Zealand Parliament on several occasions proposing that the baking of bread should be prohibited between the hours of 5 p.m. and 8 a.m., with an exception to meet the cases where more than one day's bread is required; no overtime work was provided for. Subsequently a modified proposal was suggested by the New Zealand Association of Bakers (employees) that the prohibited hours should be 9 p.m. to 4 a.m., with earlier hours of work before Sundays, holidays, &c. The Labour Bills Committee decided, at the suggestion of the then Minister, to refer the proposal to another conference of the parties concerned; the conference was held in June 1928, but no agreement was reached. The Court of Arbitration has expressed itself in favour of the abolition of night baking, but, as it has no jurisdiction over bakehouses where there are no employees, it has not considered it reasonable to provide for the abolition in its awards. The International Labour Conferences have adopted a "Convention" on the subject, proposing that the signatory countries should abolish night baking, even in bakehouses without employees, between the hours of 11 p.m. and 5 a.m., with exceptions for special occasions.

#### LEAD POISONING.

Regular inspections have been continued during the year with a view to seeing that the Lead Process Regulations issued in 1925 have been complied with. The regulations prescribe precautionary measures, such as—

- (1) The prohibition of the use of any lead colour in painting, except in the form of a paste or paint ready for use (in order to forbid the use of paint in powder form).
- (2) The prohibition of dry rubbing down and scraping.
- (3) The provision of protective clothing, washing-facilities, and storage for clothing.
- (4) For dealing with persons thought to be suffering from lead poisoning, &c.
- (5) The labelling of containers of paint containing more than 5 per cent. soluble lead.

Provision was also made in the 1920 Health Act for the notification of cases of lead poisoning. The number of cases notified during the past year is five. Three of the cases occurred to workers employed in the manufacture of enamelled baths; the enamelling process consists of the application of a fine white powder containing lead to the bath when the latter is heated to a high temperature; special arrangements have been made at the instance of the Health Department and this Department for the installation of powerful fans to carry away the powder held in suspension in the air; it is considered that the danger of poisoning is largely removed by these means. The other two cases occurred to painters, and were not of a serious nature: in one case it is stated that the worker refused to take the usual precautionary measures and was dirty in his habits; in the other the worker had been engaged in painting the interior of a number of cottages with lead paint; on his consulting a medical practitioner symptoms of lead poisoning were discovered, and the worker was advised to seek other employment.

There has apparently been little or no progress abroad during the year in the movement for the prohibition of the use of white-lead; the controversy which raged in various countries over the subject a few years ago has quietened down; the Department has, however, carefully watched events in other countries and has obtained a considerable amount of useful information. The question of satisfactory substitutes for white-lead is also being closely followed; as mentioned in previous reports, intensive investigations have been conducted in England, France, and other countries into the question of suitable substitutes, but the information gathered from these investigations is not so far very conclusive. Zinc oxide or zinc sulphides, or a combination of the two, are substitutes most generally mentioned; normal lead sulphate ( $\text{PbSO}_4$ ) is also referred to. In my last year's report I mentioned tests that had been carried out in New Zealand on three houses at Hamilton to discover whether zinc is a satisfactory substitute for white-lead; the tests disclosed that white-lead (carbonate of lead) paint had proved more satisfactory for both decorative and protective purposes. Further tests are now being made by arrangement with the Railway Department on four dwellings at Ngaio; these dwellings were painted in May of last year. In addition to the above, the Department has arranged with the Railway Department to make a test of "normal sulphate of lead," manufactured in New Zealand; the compound is regarded as non-poisonous, although obtained from precisely the same source as carbonate of lead (which is poisonous), the difference being due to the treatment during the process of manufacture.

It has often been stated in New Zealand that the illness from which many painters suffer is due to the effects of fumes of liquids used as diluting mediums (turpentine in particular) rather than to lead poisoning. The report of the International Labour Office on white-lead, issued in 1927, confirms this view; it states, "During the discussion at the Conference held in 1921, when dealing with the