

instalments towards the hire-purchase of clothes and furniture. The temptation to buy wardrobes is said to be strong on account of the lack of proper provision for hanging clothes in houses put up under recent schemes. One instance is quoted of instalments paid by the same family on three wardrobes in two years: two were removed owing to failure to continue the weekly payments. About three out of every four families investigated also paid regular premiums to meet the cost of burial, in some cases amounting to

more than 7s. a week. This is a serious drain on slender resources—enough to “pay for a funeral every year”.

Returning to the main theme of the inquiry, the writers suggest that, apart from education in regard to the value and preparation of different foods, much might be done to solve the diet deficiency problems raised in this study by a wide extension of communal feeding, of the national milk scheme, and of all social services relating to food.

USE OF GLASSES AS AN AID TO VISION

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AS part of an investigation to discover whether physical defects among children increase with age, M. V. Marshall organized a survey of the use of glasses by children attending school in a representative American city.¹ In all, the survey covers 8,204 children ranging in age from kindergarten to the twelfth grade; that is, 5–17 years. The results show an almost uninterrupted increase in the use of glasses, from 2.7 per cent among the youngest, to 15.7 per cent around the age of twelve, and 23.7 per cent by the time the pupils are leaving school. An additional proportion of the children, ranging between 2 per cent and 7.5 per cent, had been advised to wear glasses, but were not doing so.

Children do not take kindly to wearing glasses when they first begin to take an active part in school games, and when they become conscious of their own personal appearance. Allowing for such personal factors, there are unexplained checks in the use of glasses around the ages of ten and fifteen. Also,

personal factors alone can scarcely explain the wide discrepancy in the separate figures for boys and girls. Between the ages of twelve and seventeen the proportion of boys wearing glasses varies irregularly between 12 and 18 per cent, while for the same age-groups the girls show an increase from 17.7 to 32.8 per cent.

Altogether, the figures are striking enough. They show clearly that the need for glasses increases rapidly during a pupil's school life, so that by the age of sixteen about 1 in 7 of the boys, and 1 in 3 of the girls, are using artificial aids to vision. Even so, it is very probable that a still higher proportion of these children must be considered as having eyesight below normal. The figures revealed by this survey agree fairly well with those obtained by a smaller one which I carried out on boys attending a school in England. They give some measure of the magnitude of the problem of defective eyesight at the present time.

¹ *School and Society*, 53, No. 1375 (1941).

FATIGUE TESTS OF WELDED JOINTS

THE publication by the University of Illinois Engineering Experiment Station of the results and conclusions derived from an investigation carried out there on welded joints in structural steel plates is but the first instalment or progress report of the proceedings*.

The primary object of those responsible was to obtain reliable information on which to base specifications governing the design of welded structural members subjected to reversed or pulsating stresses. The lack of knowledge of the fatigue strength of welded joints has been the principal deterrent to their adoption in the fabrication of bridges, and it was clear that tests on the largest practicable scale would have to be made before this method of construction could be placed on a satisfactory and reliable basis. Realizing this, the Welding Research Committee of the Engineering Foundation organized

a special committee representative of all engineering interests to plan and carry out the work.

As used in this report, the term fatigue strength of a member refers to the maximum stress in the stress cycle which caused its failure at a stated number of cycles when the ratio of the minimum to the maximum stress had a stated value. While it is not possible to specify the stress which will cause failure at a predetermined number of cycles, it was practicable to estimate the stress cycle which would disrupt the specimen at the desired stage in the test. This was the procedure adopted and three kinds of cycle were used: (1) from a tensile stress to an equal compressive stress; (2) from zero stress to a maximum tensile stress; (3) from a maximum tensile stress to a minimum tensile stress of half the value. These gave ratios r , of -1 , 0 and $+0.5$ respectively, and for each value of r , seven identical specimens were tested: three so as to fail at 100,000 cycles, and three at 2,000,000 cycles, the seventh being a spare to be tested as desired after the other six tests had been completed.

* University of Illinois Engineering Experiment Station. Bulletin Series No. 327: Fatigue Tests of Welded Joints in Structural Steel Plates. By Wilbur M. Wilson, Walter H. Bruckner, John V. Coombe and Richard A. Wilde. Pp. 86. (Urbana, Ill.: University of Illinois Engineering Experiment Station, 1941.) 1 dollar.