

## THE PUBLIC HEALTH.

### INDUSTRIAL FATIGUE.

An experimental worker of the National Institute of Industrial Psychology gives to a special representative of *The Times* an interesting illustration of the psychological reaction of various operations of their work upon the workers. This was a case which has been directly under his observation, where workers in a jam factory can now "pick over" four 7-lb. baskets of fruit in the time previously found necessary for a single 14-lb. basket.

"On this occasion," he explained, "fruit was being issued to the girls in 14-lb. baskets, and the psychological effect of the presentation of so large a volume of work was to depress both the worker and her speed of working. The issue of the fruit in 7-lb. baskets resulted in the doubling of the rate of work." He stated further:

"Uncomfortable seating and inadequate elbow room are other factors which often reduce output. In an engineering workshop I have known an 18 per cent. improvement solely due to a rearrangement of the same material in the same space in such a way as to give greater freedom of movement.

"Sometimes the machines are not running at the correct speed for the workers. Waiting for the machine can be just as exhausting as working, since the rhythm is upset, but too high a speed may produce mistakes which more than absorb the attempted saving. Each worker has his own natural speed, and to secure the best average adjustment is a matter of fine experiment.

"Big savings," he continued, "can often be achieved by a series of minute adjustments to the time schedule of a complicated process. Output has been increased by more than a third when the individual changes in timing in no case exceeded a second.

"Rest pauses, if scientifically devised, may actually increase production in many types of labour. Their introduction in a tapestry works has resulted in a 10 per cent. increase of output, accompanied by a 25 per cent. decrease in the time lost through sickness.

"Pure physical fatigue is often mistaken for slackness. In a room where odd boots and shoes were being matched in pairs for colour, the girls were on one occasion reproved for chronic carelessness, when the real explanation was yellow fatigue of the retina. Confronted with a painful example of a red tan matched with a yellow, the worker could only plead 'Ten minutes ago they were a perfect match.' Her eyes were then tired, and the glaring yellow not accurately perceptible.

"Some people are by nature less fitted for such work than others, and I have even known a colour-blind man to be employed in a responsible position for matching colours. For years he was perfectly successful, judging by shades not colours, but in the end he made a serious mistake, involving his employers in heavy loss. Such a misfit as this can only be explained by inadequate testing when the job was first allocated."

### COMMENTARY ON TSETSE RESEARCH.

His Majesty's Eastern African Dependencies' Trade and Information Office has received the following unofficial but reliable information from Tanganyika Territory for the month of June, 1930:—

Commentary on Tsetse Research for the quarter ended 30th June, 1930.

1. At Kikore Entomological Station the programme of investigation into the behaviour of Tsetse in relation to season, game and vegetation was continued. The data agreed in general with that of the same period of the previous year, but the numbers of fly were extremely low, possibly owing to the phenomenal rains.

2. At Kikore Ecological Station the intensive study of Tsetse in relation to its environment has been continued. Attention is being paid to a fungus which has appeared on the Tsetse, and intensive study of puparia has been commenced.

3. The experimental formation of vegetation barriers to Tsetse at Itundwe Planting Station received considerable attention. The sowings and plantings of last season are already giving indications as to species likely to be of use. A new nursery was formed as the existing nursery was found to be insufficient. Experiments in working cattle in a fly area are in progress on this station in conjunction with the veterinary department.

4. The poisoning of vegetation has been at a standstill since May owing to the absence of the officer in charge of this work on vacation leave. It is intended to resume this work in full force on his return in October. Meanwhile the past work is being kept under observation.

### MINERAL OILS AND CANCER.

The Medical Officer of Health for Manchester, Dr. R. Veitch Clark, has issued to members of the Manchester Corporation a report on the work of the Manchester Committee on Cancer Research which has had particularly fruitful results in its investigations into the connection between tars and mineral oils and the causation of this disease. This work has been recognised in scientific and commercial journals, at home and abroad, as marking a distinct and practical advance in the problem of the cause and prevention of cancer. The special work at present being investigated by the committee is the investigation of the cancer-producing properties of mineral oils and the possibility of removing harmful compounds from them in such a manner that they can be used commercially without increasing their cost or diminishing their lubricating qualities. They have also investigated the cancer-producing properties of some animal and vegetable oils.

The Committee state, "Applying the standard experiment, we have found that samples of olive oil, neatsfoot oil, and sperm oil tested by us did not produce cancer. This is in keeping with the results obtained by various observers working with other animal and vegetable oils. The natural skin fat is an important factor in the prevention of experimental cancer. We have found that if lanolin (a natural animal fat) is applied to the skin in the interval between synthetic tar applications, the development of tumours is substantially delayed. In the case of shale oil lanolin has, in our experiments, given almost absolute protection when its applications are at least twice as frequent as those of shale oil. When alternate applications of shale oil and lanolin are given, the protection is much less marked."

The necessary accommodation for the scientific staff of the Cancer Committee is provided by the University of Manchester, and the research work on cancer done there is to be supervised by a consultative committee consisting of six members of the University and six members of the Committee on Cancer. Further funds are needed to extend the researches of the committee into the clinical study of cancer in all its forms.

The *British Medical Journal* has stated that this work at Manchester has apparently captured a key position in the struggle against cancer.

### MEDITERRANEAN FEVER.

The French Government has approved the acceptance by the Bouisson-Bertrand Institute at Montpellier of an annual grant of \$10,000 (£2,000) offered by the Rockefeller Foundation. The grant is to be spent upon research into the causes and cure of Mediterranean or Maltese fever. A special laboratory is to be equipped and experimental work will begin before the end of the year.

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