

divided into two classes. There is forced labour imposed by nature, the kind of work which God referred to when He told Adam that outside of paradise nature would yield bread only by the sweat of his brow. Then there is the labour that is forced on man by other men, such as slave owners and bankers, who declare from their high position that men shall not eat—not without nature's consent, but without their consent.

Work which is imposed on us by nature is necessary, natural and dignified. On the other hand, labour which is forced on man by other men is unnecessary, unnatural, artificial and degrading. One thing that many members of this house, as well as orthodox thinkers outside, refuse to recognize, or have done thus far, is that the condition of unemployment is the consequence of the tremendous advancement of technology. We have yet to hear from these orthodox thinkers that it is the substitution of solar energy for human energy that has brought about the condition of unemployment. Also the orthodox thinkers refuse to acknowledge that because the machine has taken the place of manual labour it also takes away a man's job as well as his income. They refuse to recognize that, as a consequence of this, man is suffering, not from unemployment but from "unemployment", which is a vastly different thing. I hope to elaborate that point later. Just now I should like to give a few statistics indicating the extent to which solar energy has been substituted for human energy, as a reason for the condition of unemployment that prevailed before the war and that certainly will prevail after the war unless changes are made. On previous occasions in speaking on this question in the house I have submitted quite elaborate statistics indicating the extent to which machinery has displaced human labour. I do not intend to go to the length I have gone in the past, but I wish to submit a few figures to substantiate my argument. Most of the figures I am submitting were given by the president of the United States chamber of commerce several years ago.

In the shoemaking industry one machine operated by two men can produce a thousand pairs of shoes in one day. I would ask hon. members who suggest that the duty of industry is to provide jobs, how they are going to find jobs in industry for all those who desire to make shoes when two men with one machine can make a thousand pairs of shoes a day. It has been estimated that sufficient shoes for a whole year for every man, woman and child in the whole United States could

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be manufactured in sixteen days. What are the workers to do for the rest of the year if they are obliged to earn their living by being employed?

Again one man with one bottle-making machine displaces fifty-four men. Two men with one coal-conveyer displace fifty men. One man with one window-glass making machine replaces twenty men. One machine produces 525 light bulbs per minute.

Here is an interesting item on the question of public works. We have heard again and again suggestions on the part of hon. members, particularly the hon. member for Davenport (Mr. MacNicol), that public works is one way in which the unemployed can be and should be absorbed. In digging the Suez canal four thousand men dug a quantity of ground. Many years later in the construction of the Welland canal five men did the same amount of work, or five men doing as much work as four thousand did before. If we are to take advantage of technological advance and use machinery, which certainly should be a blessing instead of a curse, where shall we find jobs for all those who will be without jobs?

The same thing applies to agriculture. Here is one item. In 1820 fifty-seven man-hours of work were required to produce twenty bushels per acre; to-day it requires only eight man-hours. Where are the people going to find employment on the farms at that rate? Again, one planting machine sets twelve thousand plants an hour.

The substitution of solar energy for human energy has taken place not only in the agricultural world and the manufacturing world; it is also true in the white-collar occupations. One girl with one machine is able to deal with sixty thousand ledger entries in one hour, displacing sixty clerks. Where are the jobs coming from under those circumstances?

We have some interesting statistics that have arisen during the war, indicating the reduction in man-hours per unit of production. Here are some with reference to the production of guns. I quote from the *Financial Post*. The first two-pounder anti-tank gun required 1,219 man-hours of work; it now requires only 350. The first 6-pounder anti-tank gun required 930 hours of work; it now requires only 375. The first 40 mm. Bofors gun barrel required 186 man-hours of work; it now requires only 45. The constant trend is to the reduction of the number of man-hours required per unit of production.

An interesting item appeared in the February 27 issue of the *Financial Post* in reference to motor-car production. It stated that before