

## INVENTIVE PROGRESS

(Being Chapter IX. of "Land-Value Policy"\* by J. Dundas White, M.A., LL.D.; reprinted by permission of the Author.)

The history of material progress is the record of Man's increasing ability to use the free gifts of Nature for the satisfaction of his desires. From a precarious subsistence on wild fruits and wild animals he has progressed to pastoral life and agriculture. From the use of natural substances as he found them, he has learned to quarry the stone, to mould and bake the clay, and to extract the minerals from the ore. From the use of primitive appliances, he has evolved elaborate machinery, and has harnessed the natural sources of energy to drive it. By these, and by a thousand other advances in the arts and sciences, he has been able to increase production, to accumulate wealth, and to enlarge the possibilities of life beyond the dreams of the past.

### INEQUALITIES OF DISTRIBUTION

But though the production of wealth has increased steadily, the distribution of wealth has remained very unequal, and the great mass of the people have not had anything like an adequate share in the advantages of progress. Whatever other causes have been at work, the principal cause of the unequal distribution of wealth is, and always has been, the unfair appropriation of the natural sources from which it is obtained. If, even under primitive conditions, a small section of the community can appropriate the land and treat it as if it were practically their own, they can, in one way or another, secure a large share of the produce for themselves, leaving comparatively little to those who are actually engaged in production. If Nature were so bountiful as to make two blades of grass grow where only one grew before, and to double the return to every effort, the resulting benefits could still be realized only through the land, and the landowners would still have the same ascendancy over the landless. Nor are these results limited to production on the surface of the earth. The ownership of land includes the ownership of its contents; of the stone, clay, slate, coal, ironstone, metallic ores, and countless other substances; the landowners can quarry and mine them, but other people may not quarry or mine them except on the landowners' terms.

### BENEFITS OF INVENTION

The invention of water-wheels, which were used to turn corn-mills that had previously been operated by hand, gave the poet Antipater, some two thousand years ago, a vision of how the natural forces might be used to lighten human drudgery, and moved him to say, in beautiful Greek verse, that the women who were grinding at the mill would be enabled to take their ease, because the nymphs of the water would dance on the water-wheel and make it turn the mill for them.† But the results were otherwise. Those who possessed the land possessed the water-power and the women who had been toiling at the mill had to toil at something else instead. The invention of the windmill made it possible to use the power of the wind; but when wind-driven sawmills were first set up in this country, they aroused the antagonism of the sawyers, who realised that they might have to seek some other means of livelihood.‡ In the same way, at a later date, the substitution of machinery for hand-work led to a series of riots. Nor was the opposition to these inventions unreasonable. Several

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† GREEK ANTHOLOGY, Bk. ix, No. 418. Further references to this poem, and to some early uses of mechanical power, may be found in the present writer's pamphlet, *THE NATURAL SOURCES OF ENERGY* (1919).

‡ Beckmann's *HISTORY OF INVENTIONS*, chapter on "Sawmills."

centuries before Antipater, Aristotle had said that "if every instrument could accomplish its own work, if the shuttle could weave and the plectrum touch the lyre without a hand to guide them, chief workmen would not want servants, nor masters slaves."\* With the development of what was almost automatic machinery going on before their eyes, it needed no great stretch of imagination for wage-workers of a later age to anticipate that many of them might find their occupations gone.

### THE OBJECT-LESSON

If inventive progress *alone* could improve the general condition of labour, the invention of the steam-engine, the spinning-jenny, and the power-loom should have brought the millennium. It brought misery. In considering the actual circumstances we should bear in mind that almost uncontrolled landlordism was denying the great majority of the people their rights to the land, making it difficult for them to get a livelihood, and enabling the new capitalism to exploit them. The results would have been even worse than they were if the home market had been the only market for the manufactured goods, as in that case the demand could not have kept pace with the increasing efficiency of the machines. Such advantages as followed were largely due to the manufactured goods being exported in exchange for food-stuffs and other products from distant lands, which were thus laid under contribution to relieve the pressure here. Even so, the reconstruction of industrialism redounded to the benefit of the few. The owners of the coal and iron and the proprietors of the factories amassed fortunes; many other people did well for themselves; but the great majority of the workers had to work for long hours at low wages, and under the appalling conditions which necessitated the Factory Acts. Reviewing the situation, John Stuart Mill wrote this memorable passage:—

"Hitherto it is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being. They have enabled a greater population to live the same life of drudgery and imprisonment, and an increased number of manufacturers and others to make fortunes. They have increased the comforts of the middle classes. But they have not yet begun to effect those great changes in human destiny, which it is in their nature and in their futurity to accomplish."†

### FIRST THINGS FIRST

If mechanical inventions are to "effect those great changes in human destiny, which it is in their nature and in their futurity to accomplish," we must first realize that their function is to enable us to utilize and develop the free gifts of Nature with less effort and to greater advantage than before, and that if people as a whole are to share in the general benefits of industrial progress, these free gifts of Nature must be treated as common property. This policy is as essential to the well-being of the workers in the most complex civilization as in the most primitive conditions. It is of the first importance in this country to-day. The special conditions of the time gave us the lead in modern industrialism. But other countries have also developed along the same lines; the war has dislocated international trade and the international exchanges, and the resulting condition of labour makes it imperative that we should enforce the rights of the people to the land at home, so as to open the natural opportunities for use and to promote their development.

### FUTURE INVENTIONS

These considerations apply not only to the inventions of the past, but also to the inventions that are developing

\* *POLITICS*, I, iv; trans. Jowett.

† *PRINCIPLES OF POLITICAL ECONOMY* (1848), 4, vi, 2.

now, and to the inventions of the future. The purpose of all inventions is to enable us to use the gifts of Nature to better advantage than before. The progress of science and art, by increasing the demand for various metals, has increased the value of the lands where these are to be found; the development of the steam-engine has increased the demand for coal and the value of the coal-fields; the invention of the internal-combustion engine has increased the demand for oil and the value of the oil-fields; and the new possibilities of utilizing certain plants for the mass production of power-alcohol may have similar effects on the value of the land where they grow. In all our present uses of the natural sources of energy we are making indirect use of solar radiation, which has raised the water, generated the wind, and made possible the growth of vegetation, both of the primeval forests that became the coal-measures and of the trees and plants of to-day. A new era will be opened when the progress of invention enables us to make direct use of solar radiation as a source of power. Speaking of an apparatus recently installed for cooking by sunlight at the astronomical station on Mount Wilson in California, the writer of a leading article in *THE TIMES* observed that the direct transformation of the sun's rays into mechanical energy on any large scale, though at present it appears visionary, may become an accomplished fact at some future time. "If that time comes," he proceeded to say, "there will be a revaluation of the surface of the earth, and areas will be coveted in proportion to the daily and annual radiation they receive."\* Thus, in other words, the advantages resulting from this great achievement would find expression in land-value. However much the progress of invention may enable us to utilize the free gifts of Nature, it will ever be of the first importance to treat these gifts as the common property of all her children.

**THE GREAT TRUSTEESHIP**

Whatever the stage of economic development, the common right to the land must be made effective. In this country, as matter of both history and law, all the land is held of the Crown as overlord. This overlordship should be regarded as a trusteeship for the people; and the public charges on landed properties should be reconstituted by basing them in the case of each property on the market value of the land, irrespective of the improvements on it. This policy, as we have seen, would prevent the withholding of land from use, would make it available for use on fair terms, and would give free scope for its development; and it would also do much towards equalizing the distribution of wealth and the general benefits of inventive progress.

\* *THE TIMES*, 11th August, 1921; see also the issues of 26th and 28th January and 2nd February, 1922. An interesting article on "When the Desert Blossoms," in Mr. Mee's *MY MAGAZINE*, January, 1924, suggests the possibilities of the Sahara sunshine as a source of power.

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**HAMPSTEAD HEATH**

743½ Acres = £577,000

In the final report of the Kenwood (London) Preservation Council (*THE TIMES*, 17th December) it is stated that although the entire estate had not been secured, 120 acres had been vested in the London County Council, and an additional 12 acres adequately protected from building. It was pointed out that the purchases now effected marked the completion of the saving of Hampstead Heath, which was begun in 1866 in an action to restrain enclosures of part of the common by the then Lord of the Manor, the late Sir T. M. Wilson. In 1871 the manorial rights, over 240½ acres, were purchased by the Metropolitan Board of Works for £45,000. During the years 1884-85, 267½ acres of Parliament Hill Fields were acquired at the cost of £300,000. Subsequently, in 1898, the picturesque park of Golders Hill, which extends to 36 acres, was achieved at a cost of £38,500 by the public-spirited action of the late Sir Henry Harben, Mr. T. J. Barratt, and Mr. Samuel Figgis while, in 1905, 80 acres were added to the Heath at a cost of £36,000 by the purchase of part of the Wyldes Farm estate. By the latest additions, Hampstead Heath has been increased in size to 743½ acres, which altogether had been secured for the public at a total cost of £577,000.

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