

**THE STRENGTH AND DECAY
OF NATIONS. I. - FORESTRY.
II. - BRITISH FORESTRY. BEING
TWO ESSAYS WITH NOTES**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649274802

The strength and decay of nations. I. - Forestry. II. - British Forestry. Being two essays with notes by Giles Andrew Daubeny

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Cover @ 2017

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GILES ANDREW DAUBENY

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"I agree with you upon the very great importance of the subject of Forestry, and shall be very glad if you can induce our countrymen to give it an increased attention."—W. E. GLADSTONE.

THE
Strength and Decay of Nations

I.—FORESTRY.

II.—BRITISH FORESTRY.

BEING TWO ESSAYS WITH NOTES.

BY

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"TIMBER NEWS" OFFICES:

LIVERPOOL, 19, SOUTH JOHN ST. LONDON, 30, FLEET ST., E.C.

LONDON:

SIMPKIN, MARSHALL, HAMILTON, KENT, & CO., LTD

PRICE ONE SHILLING.

1899.

PREFACE.

I.—FORESTRY.

II.—BRITISH FORESTRY.

These two articles were written without any intention of their appearing together; there is some repetition in the second, which it has been thought best to let remain. The greater part of the first paper appeared in "Nature Notes," the magazine of the Selborne Society, during the months of October and November last: it was dated August 24th, 1898, before the day of Omdurman and the Fashoda incident.

G. A. D.

March, 1899.

"The tree of the field is man's life."

I.

FORESTRY.

PRACTICAL forestry has been defined by Mr. Michie as signifying the growing of the greatest quantity of the most valuable wood or timber upon the smallest piece of ground in the shortest period of time. This may suffice very well for forestry as practised in Scotland; but when we consider the manner in which the science is applied in countries nearer the sun, some addition becomes necessary. The full practice of forestry then further implies the maintenance in a given country of the proportion of woodland suitable to that country, that there may be the best climate obtainable in that country for the maintenance and reproduction of animal and plant life conformably with the wants and enjoyments of man. It may be added that forestry, so carried out, amongst other benefits, regulates the rainfall, prevents to a large degree violent storms

and drought, and diminishes disaster and discomfort by floods and drifting sand.

The *science* of forestry, however, has only been known for some two hundred years, yet its great importance is seen when we consider what takes place in every country as it becomes civilised.

Whilst in barbarous times men are content to live upon the wild fruits of the forests and plains, the spoils of the chase, the food to be obtained by trapping and fishing, and what can be wrested from neighbouring tribes or travellers by force of arms; as soon as they gain ideas of civilisation they clear a space amidst the trees of the forest to build a collection of dwellings and to grow corn and other food and provender in greater quantity than can be conveniently gathered in the wild state. Wood, moreover, is required for firing, to build houses, boats, and for many other purposes; so it comes to pass that the area around the settlement denuded of trees becomes greater and greater.

Where a civilised invading force occupies a land covered with primeval forest, then, of course, the cutting down of trees goes on at a much accelerated pace.

One result of civilisation generally, then, is the gradual but steadily increasing disappearance of trees, a few remaining, and man planting some fruit and other trees that he sees will be of use to him: the forests are destroyed with most disastrous results, involving the ruin of climate favourable to life, and so the impoverishment and eventual downfall of once powerful nations.

Such has been, and is still, in too many cases, the usual course of events. Most, however, of the nations of Europe have learnt the value of forestry, and some of them practise it so thoroughly that a proper proportion of their land is kept covered by trees; so that there are equable seasons, and agricultural operations can be performed with the greatest possible success.

Now let me take the case of a country completely, or almost completely, denuded of trees, say a *hilly* portion of the interior of the Sahara desert—for that region is by no means a flat expanse of sand, as we were told not so many years ago. I will suppose that a large body of cloud, containing sufficient moisture to produce abundant rain in England, approaches this piece of almost rainless desert:

the heat radiated from the surface of this hot locality, and the heated air rising from it, will carry the cloud upwards into attenuated atmosphere and dissipate it into such fine vapour that there will be no rainfall; and this is what usually happens during the greater part of the year.

Next let it be supposed that the cloud is driven towards a hilly desert region so situated, say near the sea, that rain falls on it less rarely than in the former case, for the land is not so much heated as the more central desert, and when the clouds are very heavily charged they will resist the smaller upward pressure of less heated air. The rain falls violently on the hills, a little of it soaks in, to be evaporated directly the cloud is gone, by the sun's rays, whilst the greater part runs from the sides of the hills as from the roof of a house, fills the hitherto dry water-courses with raging torrents, and floods the valleys and plains in its impetuous rush towards the sea.

Lastly, I will take the case where the cloud comes to a land with the hillsides covered with their natural clothing of trees, but where, in the lower parts of the valleys, and in the plains, the forest has been cleared away and

the greater part is under cultivation : there are plantations here and there where the ground is unsuitable for grass or tillage ; and orchards of fruit trees and pleasant gardens abound. Such a country has running streams and rivers, and though the cultivated ground has been artificially drained by man, there is sufficient moisture everywhere for the maintenance of life in trees and plants : water is retained in the forests, and from them, from the rivers, ponds, and streams, as well as from every square foot of ground, arises continually more or less watery vapour. The approaching cloud meets this ascending vapour, it meets the trees on the hills, it encounters the cool sides of the hills—there is a downfall of rain. Then the water, instead of rushing violently down the hills, is to a large extent retained upon them amidst the trees, their roots, and the undergrowth, and the trees protecting the earth from the rays of the sun, the soil acts as a sponge, and the water remaining in the woods on the hills, is given off gradually to the streams and rivers. Here is a perfect system, here is Nature modified to suit the wants of man.

I have read many times that trees *bring* rain, but how they do so is but imperfectly