

### THE COMMERCIAL SIDE OF GOVERNMENTAL AND PRIVATE FORESTRY.

The lovers of the American forest have been laboring over the forestry problem for a number of years. In the mean time, the owners of woodland have continued to solve the problem in their own way by converting trees into ready money. Only a few cases are on record, in which private individuals have practiced conservative forestry,—evidently not knowing what they were doing. If we investigate into the state of affairs driving those individuals towards a conservative use of their forest-holdings, we find a constellation of circumstances, under which conservative use of the forest yields larger returns than forest destruction.

The most striking examples of such "unconscious" forestry are reported from the Longleaf Pine Belt in the Southern U. S., a section where logging is practicable all the year round, where taxes on forest-holdings used to be low, and where the pine trees, clad in a fire-proof armor of bark, are well protected against destructive conflagrations.

#### Longleaf Pine Pictures.

Obviously as long as the gigantic trees of the primeval forests cannot be approached, as long as the expense of transporting the timber to the market surmounts the price obtainable for it, the owner of the forests cannot actually practice forestry. Later on, when the country has been opened up by railroads and navigation, the cost of marketing the trees is reduced and stumpage begins to command a price. From that moment on, it will pay to use the forest.—It will even pay to use it conservatively, provided that the facilities for logging are good; that the "second growth" is safe from fire; and that the accumulating taxes payable whilst the "second growth" is coming up, do not devour a large percentage of the gross returns obtainable from a "second growth."

#### Inducements at the Expense of the People.

If the government wants to encourage the movement towards conservative forestry on private holdings, it must see to it that these conditions are provided for at governmental expense. Then only forest-preservation is a safe and remunerative business.

When the government wants to have the system of railroads enlarged, it gives inducements to prospective railroad companies making railroad investments safe and remunerative. Why should government hesitate to follow a similar course when the development and the maintenance of our forest resources is at stake?

Obviously, the virgin-forest should not be preserved; the virgin-forest is unproductive; the annual production of

woody tissues is exactly offset by the annual death and decay of timber. If such were not the case, our virgin woods would get so dense in the course of the years, that neither deer nor man could penetrate them.

In the well managed forest, the mature trees are removed, and just that much timber is left on every acre as suffices to fully digest sunshine, rain and air,—the food of the forest.

Broadly speaking, the stumpage is cut back to that figure, at which the ratio between the annual accretion of woody tissue on the one hand and stumpage remaining on the other hand is a maximum. Where this maximal ratio prevails, the highest possible interest on the investment is derived.

#### Pictures—"Cutting at Biltmore."—Regulation of Waters.

Objecting to the proposition of skimming the forest by cutting its best trees, you will ask: "Does not such business forestry interfere with the role of the forest as a regulator of drainage and navigation? Does it not cause the huge water reservoir to leak, which the forest is said to form?"

The propriety of the question cannot be doubted. We should not forget, however, that any use of any natural resource is bound to leave it in a deteriorated condition. Besides, the vegetable litter and the lumberman's debris decaying on the ground—to a much higher degree than the trees—act as a hygroscopic sponge soaking up the falling precipitations and causing them to gradually percolate into the lower strata of mineral soil.

Remove the deep mould covering the foot of the trees—for instance by fire—and rapid surface-drainage will take the place of a slow underground-drainage. In road-building and road-maintaining, striking proof may be gathered of the inter-dependence between run-off and soil-cover. All other conditions being equal the road requires constant repairs, where it leads through abandoned clearings or through heavily burned timber tracts. True, the trees themselves contain a large amount of moisture. On an average 45 per cent of their weight is formed by water, and when burning a cord of green wood, you evaporate over 250 gallons of water.

Still, the amount of water contained in the trees fluctuates within narrow limits. In a period of drouth it may drop down to 40 per cent, and after continued rains it may rise to 50 per cent. What is that hygroscopicity of the trees compared to the soaking power of the vegetable carpet on the ground! Experiments have shown that the weight of the soil-cover after heavy rains is increased ten-fold!

#### Place of the Forestry.

Enthusiastic advocates of forestry

have often deplored the disappearance of the forest from the very land where they used to grow most luxuriously. I refer to the rich land along the river bottoms. To the cause of forestry, this enthusiasm has done more harm than good. Mere common sense prescribes the rule that every acre of ground shall be devoted to that production, under which it pays best. The most fertile land is justly claimed by agriculture and pasture; forestry must be properly relegated to land unfit for field crops or to a rough climate, where wheat and corn are apt to fail.

In Germany where forestry is certainly at home, agriculture and forestry are invariably interwoven, being considered "sister and brother." The famous Black-forest is far from being an unbroken wilderness. It is dotted with villages occupying the most fertile spots. During summer, the population works on the grass lands and in the fields; in winter, the forests claims all available labor.

In the Black-forest, the supplies for the logging camps are largely raised on the "forest-farm," and, obviously, the "forest-farm" finds a ready market for its bulky produce in the logging camp.

#### Black Forest Pictures.

In the Black-forest, a paternal government prevents irresponsible farmers from devoting absolute forest-soil to farming,—farming, of course, at a loss to the owner, and soon at a loss to the people, when the farm is found to be unproductive and is abandoned by its owner.

In this country, the immigrant cannot possibly foretell, what forest land, being of a truly agricultural character, should be cleared and used for farming, and what wooded tracts, under the prevailing conditions of soil, climate and means of communication, should be left to the production of timber. Some paternal supervision, some amicable foresight must be exercised by the government, and only such land—on the other hand all such land—must be delivered to the plough, on which farming pays better than a second growth of trees.

#### Forest Revenue.

The question will be asked: "Does forestry pay at all?" Pointing to European or to Indian experience, the forestry scholars used to prophesy, that large and rising returns can be safely expected from forestry. To the unprejudiced observer it seems strange, that the American wood owner, the lumberman, is far from sharing the scholars' opinion. The American lumberman, standing in the foremost rank of successful business men, proves by the very success of his business, that in this country—aside from exceptional conditions already cited—forest destruc-