2. That one plot, call it No. 1, be devoted for 60 years to the production of farm crops, and that the other, No. 2, be planted to trees to be harvested at 60 years.

3. That money be worth 5% per annum compounded annually to the owner of the lands.

4. That it is desired to adjust the taxation of the two plots so as to bear equally heavily on the production of the farm crops and the wood crop.

The problem: If $1.00 per year be the tax assessed on plot No. 1, devoted to the field crop, what should be the annua tax on the woodlot, plot No. 2?

The relative burden of tax rates on crops can best be discovered by finding in each case *the proportion the amount of the tax bears to the net value of the crop at the time of the harvesting of the crop.* This being so, tax rates on plots Nos. 1 and 2 must be so adjusted as to take an equal proportion of the net value of the crops on Nos. 1 and 2 at the time of harvesting. For example, a tax rate of $1.00 payable yearly on plot No. 1 would be equally burdensome to the owner as a tax of $60.00 payable at the end of every 60 years on plot No. 2. In each case the tax would amount to just 1-10 or 10% of the *net product* at the time of harvest.

Taxes, however, are usually paid annually whether the owner receives an annual or periodic return from his land. $60 payable at the end of every 60 years being the equitable tax rate for plot No. 2, it remains to be found how much would be required to be deposited annually at 5% compound interest to amount to the $60 at the end of 60 years. The equation is

$$\frac{\$60.00}{(1.05)^{60}-1} \times .05 = 17 \text{ cents.}$$

That is, a tax of 17 cents per year paid annually for 60 years on plot No. 2, money being worth 5% per annum, will at the end of the 60 years have amounted to $60, or 1-10 the value of the then maturing crop.

Hence, the conclusion that if money be worth 5% per annum to the farmer, and that it requires 60 years to mature his woodlot plantation—two assumptions which can hardly be doubted—*an equitable tax rate based on the value of the soil for producing purposes should be in the case of woodlands but 17-100 or 17% of the rate paid on neighboring lands of similar quality used for the production of farm crops.*

The amount of the unfairness of a *similar* annual tax for both plots may be seen by comparing the accumulated value of the tax rate up to the time of harvesting the crops. For this purpose, let the annual tax on each plot be $1.00.