

## WOOD AS FUEL.

Editor Conservative:

The renewed interest in groves for shelter and for fuel may perhaps justify the following article: Careful observation by many parties indicate that at the present time there is more timber growing in the eastern counties of the state than thirty years ago. Where protected from forest fires, the native groves have been able to creep out into the bottoms and over adjacent bluffs. The average Nebraska farmer has not been attracted to lumbering and is only from necessity a wood-chopper. The abundant crops of corn usually grown have often times furnished the thrifty farmer as many cobs as he could conveniently use for fuel, and the fact that he had them on his premises has led to their free use as fuel rather than the distasteful work of cutting trees for fuel, even when he had them on his own land. While cobs are not as satisfactory fuel to use in a cook stove in the respect that they need to be fed frequently, yet probably four-fifths of the farmers of the state use them whenever they have secured a corn crop. The corn shipped out of the state is shelled before it is shipped and the cobs resulting from the shelling are sold in all the minor villages at from \$1.40 to \$2.50 per ton.

January 8, 1872, the writer purchased of the Burlington Railroad Company, receiving fifteen years' time, and contracting to plant 100 acres of orchard and timber on land purchased. In addition to this planting, the writer carefully protected all the native trees which came within the limits of the land purchased and lying on both sides of the Blue, and also the trees which spread up into the ravines and over the adjacent bluffs. A portion of this timber is now being cut and marketed as fuel and fence posts. In determining the comparative value of the different kinds of wood, one with another, Dr. Bessey, of the state university was consulted. Dr. Sargent, in his extended work on the forest trees of America, gives the relative fuel value of nearly all varieties of trees found growing in North America. Comparing these, one with another, it is found that using the well known soft maple, now selling in country towns at \$4.50 per cord, composed of three stove ricks, each rick four feet high and eight feet long, as a basis of value, we have the following values per cord: Hickory, \$7.18; oak, \$6.40; honey locust \$6.22; ash, \$6.05; sugar maple, \$5.87; apple, \$5.87; elm, \$5.53; walnut, \$5.19; willow, \$3.89; catalpa, \$3.53; cottonwood, \$3.28.

It is interesting to notice in this connection that in the discussion of this subject by highest scientific

authorities wood has value as fuel very nearly in proportion to its specific gravity. That is, a pound of pine has very nearly the same heating value as a pound of hickory. On the other hand, a cord of seasoned hickory weighs 4,200 pounds, while a cord of pine or willow weighs only about 2,000 pounds. In New England, during the writer's boyhood, each industrious farmer always planned to cut enough wood each winter and to store it away under shelter where it could be seasoned before use. Only a shiftless provider would be found guilty of supplying his wife with green wood as fuel. The importance of this is evident when it is understood that each 100 per cent of water or moisture in the wood detracts 12 per cent from its value as fuel. In the discussion of fuel value of wood as compared with good soft coal, it is to be understood that the comparisons following are made on the basis of dry wood. Knowing that our professors in the state university had given considerable attention to the subject of fuel value of wood, and that of corn as compared with coal, the writer secured some interesting figures from Prof. O. V. P. Stout and from Prof. Chatburn of the state university. In this discussion it should be borne in mind that while a cord of wood nominally 4x4x8 contains 128 cubic feet; actually according to official determinations in Prussia, and as quoted by United States Commissioner of Forestry B. E. Fernow, a cord of four-foot wood contains only about 75 cubic feet of solid wood. From various sources Professor Chatburn has deduced the following statement: Taking seventy-five cubic feet of solid wood for a cord, and using Rock Springs coal as a standard for comparison. Dry ash, weighing 3,000 pounds per cord, is equal in heating value to 2,000 pounds of Rock Springs coal. A cord of elm, weighing 2,550 pounds per cord, is equal to 1,680 of Rock Springs coal. A cord of hickory, weighing 4,200 pounds, has the same fuel value as 2,720 pounds of Rock Springs coal. Changing this comparison to a money value, one cord of ash equals one ton of Rock Springs coal, selling in most markets at \$7, and in some at \$7.50 per ton. Using this as a standard of comparison, a four foot cord of elm is worth \$5.88; a cord of oak, \$7.40; a cord of hickory, \$9.50; a cord of willow, \$4.65; a cord of apple, \$6.37; a cord of soft maple, \$5.20; and a cord of cottonwood, \$3.80, that is, wherever the consumer pays \$7 a ton for Rock Springs coal, he can afford to pay the above noted prices per cord for wood, less the expense of sawing and splitting the wood and getting it convenient to burn.

The usual contract price of outting

standing timber and making it into stove wood is \$1.50 per cord of three stove ricks, or 50 cents per stove rick of 4x8 feet. Contractors saw four-foot cord wood into stove lengths at 50 cents per four-foot cord.

Dr. Bessey will presently publish a paper giving the results of his careful observations of the amounts of fuel that can be grown per acre in ten, fifteen and twenty year periods. When we consider the value of the grove in its influence on climate and that it may have great value as a shelter and of the above uses and its value as fuel there should be a revival of interest in forest planting for shelter and fuel.

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## TRUTH.

That which is true or certain concerning any matter or subject, or, generally on all subjects, is called truth. Some facts are self-evident, needing no proof. Generally, that which needs much proof, or apology, is not fact. Generally, verity is like a highway, so plain that even a fool may not err therein.

No one ever denied the golden rule. I never heard of any one trying to prove it. It is fundamental law. All men agree that fundamental truth is eternal. The facts of nature are as simple as, one and one and one are three. When a proposition is hard to understand, either it is false, or the reasonings are false.

When we think of telegraphing across the Atlantic, it seems mysterious. But if we begin right, the mystery soon unravels; it is as plain as dropping pebbles into the water. Drop a small pebble; it makes small waves which do not reach the shore. If we could drop a large enough stone, the waves would cross the Atlantic. When we halloo, we produce waves in a lighter element than water. If our lungs were strong enough, we might be heard on the other shore.

The telegrapher has succeeded in transmitting waves in a lighter element across the Atlantic with sufficient force to affect an instrument on this side. The instrument simply produces waves, as the pebble, but in a higher element. Thus it is with all verified fact and all successful mechanism, the elements of simplicity.

Men have tried to invent a machine to run perpetually without power. We know that there is perpetual motion; we see it in the movements of the planets and suns. On the earth there is friction to overcome, hence, the necessity for power. Ever since Darwin wrote, men have been trying to discover the origin of species. Any theory that needs so much proving, is false. Among many wise, and otherwise, sayings of Solomon, we find, "there is nothing new." No one has ever disproved it. It is true, Truth never was "crushed to