

The Western Mortgage Lifter.

BY PHILIP EASTMAN.

"Next in importance to the divine profusion of water, light and air, those three great physical facts which render existence possible, may be reckoned the universal beneficence of grass," said Senator John J. Ingalls. "Alfalfa, which came as an antidote for booms and drought in the Middle West, must be reckoned equally as lavish in beneficence as grass. It is the corner stone upon which is being built the unflinching prosperity of the Western farmer. With its never-failing four or five crops a year; its tonnage greater than that of any other forage plant; its wonderful fattening qualities for cattle and swine; its value as a feed for bees and poultry; its perennity, covering a quarter of a century; its ability to withstand drought and hot winds because of its roots, which bore down until they find water, it is the wonder of Western agriculture.

In the less productive regions of Western Kansas and Nebraska, Eastern Colorado, Wyoming and Arizona, land formerly thought to be suitable only for grazing has been given an agricultural value by reason of the large alfalfa yields. Already in many of the "short grass" counties of Western Kansas and Nebraska thousands of acres are being raised and fed to cattle, sheep and hogs with large profit. Many who have looked upon irrigation as the only means of putting such lands on a paying basis now say "alfalfa is the way out."

The rapid increase of alfalfa cultivation is probably unequalled by any other product of the soil. In less than half a century, and for the most part in the last decade, it has become a factor in agriculture and has been largely responsible for the upbuilding of the extensive dairy industry in the Middle West. In many localities the profits realized by turning alfalfa into beef and pork would read almost like the startling stories that came out of the Klondike a few years ago. Alfalfa butter is shipped to New York by the trainload; alfalfa-fed chickens and turkeys fill cars that go to Boston; the best chops on the breakfast table of the Philadelphian are alfalfa-fed.

At first farmers were disposed to look upon alfalfa as they had learned to look upon new-fangled "patent" windmills and lightning rods—a thing to be avoided. The general belief was that it was a new and untried product, but in reality it is older than the Christian era. It was grown in Greece as early as 450 B. C. Cincinnatus, the patrician farmer, may have been plowing for alfalfa in his fields across the Tiber when he was called upon to don his toga and become dictator. The horses of the Roman army were fed upon it, and it is still cultivated in Italy. The Latin races at first had a monopoly on the cultivation of it. From Italy it was introduced into Spain, then Southern France. The Spaniards carried it to South America and to Mexico. It was grown in many of the northern countries of Europe and was known in New York in 1820, but it did not gain a foothold in the United States until 1854, when it was introduced from Chili to California. Since then its march eastward across the country has been steady, until it is now grown, more or less extensively, in every state and territory in the Union.

Alfalfa has been the text of agricultural revivals. It has been preached and taught at the farmers' Grange meetings and at the agricultural colleges. Captain J. H.

Churchill, of Dodge City, Kansas, was given the title of "The Alfalfa King" because of his untiring efforts in spreading the gospel of the new forage plant. He had been a sailor on the Atlantic seaboard, and his experience as a farmer had been of a few years, yet he was one of the first to discover the adaptability of alfalfa to Kansas soil and to champion its cause among farmers with years of experience. He owns a ranch of 2000 acres and an extensive dairy, and his alfalfa-fed milch cows furnish the milk and cream used on a large part of the Santa Fe dining-car and eating-house system. When he was recently elected president of the Kansas State Board of Agriculture, in recognition of his services to the farming interests of his state, Kansas had nearly 400,000 acres of alfalfa, an increase of 350,000 acres in a dozen years.

It was not until the taking of the census in 1900 that the statisticians recognized alfalfa. This census gives the total acreage as 2,094,011 and the tonnage of the product as 5,522,671. The tonnage per acre for all the states ranged from 1.0 to 3.4, the lowest being in Rhode Island, where but two acres were raised, and the greatest being in Washington, where 35,166 acres were grown. The general average was 2.5 per acre.

The census gave Colorado first place with 455,237 acres, California second with 598,898 acres, Utah third with 268,229 acres, Kansas fourth with 267,378 acres, Idaho fifth with 160,029 acres, Nebraska sixth with 115,141 acres, Nevada seventh with 96,725 acres, Wyoming eighth with 74,688 acres, Montana ninth with 68,959 acres, and Arizona tenth with 62,585 acres. Since the compiling of the census the acreage has been greatly increased, and in 1903 it is safe to say that Kansas will have 400,000 acres. In Nebraska the acreage has been increased annually by 10,000 to 12,000 acres, and in Colorado the demand for hay as a winter feed for cattle and sheep has been an incentive for the sowing of thousands of acres each year.

As a feed for the dairy cow it has no superior. Dairymen in the West say that in the future the alfalfa-fed cow will set the price for butter for the entire country. The quality of butter produced from it is superior. Herds of cattle cannot be turned into the fields to graze, as there is danger of what the farmers call "bloat," and cattle, after eating the green, rank growth too freely, have died in a few hours. It can be safely fed from the stack. The stock and dairy men have talked for years of the much-sought-after "balanced ration." Alfalfa solves the problem, for stock will eat just enough of it along with grain. Analyses of bran and alfalfa have shown that they have a composition nearly the same. Horses pastured on the fields in the spring and summer and fed the hay in the winter keep in the best of condition. Hogs thrive in the fields, and experiments have shown a ton of the hay to make 868 pounds of pork. Lambs can be fattened for the market in less time and with greater profit on alfalfa than on any other feed. It is an excellent feed for beef cattle and adds weight quickly and cheaply.

At Kearney, the center of the industry in Nebraska, Mr. H. D. Watson, one of the recognized authorities on the subject, owns an alfalfa farm of 2500 acres where the plant grows as rank as weeds. The roadsides are lined with it. Mr. Watson took ground which had been planted to corn for years and years until it was "worn out." He sowed it to alfalfa. He proved to the farmers that the value of the rotation of crops was not a theory

but a fact. From land that had become worthless for corn he harvested three tons of alfalfa the second year. He had faith in alfalfa, and he saved the farmers in the vicinity of Kearney, who had lost heart because their worn-out land would not yield corn. A Western boom had broken and left its effect. A half-dozen years ago a farmer who was ready to give up took Mr. Watson's advice. He sowed twenty-two and one-half acres to alfalfa. In 1902 he sold 1000 bushels of seed for \$1000 and the hay for \$350. At Kearney the people call alfalfa "the greatest income-producer, mortgage-lifter and debt-paying crop grown."

William Scully, of Washington, D. C., who owns 200,000 acres of farm land in Missouri, Kansas, Nebraska and Illinois, requires in his leases that the tenants on his farms raise a fair acreage of alfalfa. He believes in the crop and feels certain that by raising it his tenants will not only improve his lands but that his rents will be forthcoming. Frank Rockefeller, the Cleveland millionaire, has 500 acres of alfalfa on his ranch in Kiowa county, Kansas.

Alfalfa, or lucern, is one of the plants belonging to the order of Leguminosae. Botanically it is known as *Medicago sativa*. The same order includes peas, beans, clover and vetch. It has been demonstrated that in association with bacterial organisms, alfalfa has the power of utilizing the nitrogen of the air, a most important element in plant food, easily exhausted from the soil and difficult to replace. It requires three years for the plant to reach its prime, and twenty-five years, with three to five cuttings annually, have left the fields in excellent condition, although the decline may be expected in ten years.

Alfalfa sends its roots to where there is no drought. An eighty-year-old plant, in a stiff "hard-pan" subsoil, has been followed for a depth of ten feet without the end of the tap root being found. Many instances have been recorded of the roots penetrating thirty-eight feet and sixty-six feet. A mining tunnel was excavated in Nevada one hundred and twenty-nine feet below an alfalfa field, and the roots of the plants were found in the roof of the opening. The searching roots not only obtain food far below the shallow feeding plants, but when the large boring roots decay they leave their own fertilizing ingredients and openings for air and water to penetrate. Alfalfa thrives best in the sandy loams of the creek and river valleys in a warm climate with only a moderate rainfall, but it is grown successfully on the uplands and prairies. It grows in altitudes from 8000 feet down to sea level, but is affected by cold, wet winters. A plant eighteen years old, with three hundred and thirty-four stems growing from one root, with a height of fifty-two inches above the ground, is the product of a Kansas field. During 1901, an extremely dry year, five cuttings were made on an eleven-acre field in Montgomery county, of the same state. The five cuttings aggregated fourteen feet two inches in height and the average yield was seven and three-fourths tons per acre. The cuttings yielded as follows: First, May 11, two and one-half tons; second, June 24, two tons; third, July 21, one ton; fourth, August 27, one and one-half tons; fifth, October 19, three-fourths of a ton. Cutting helps alfalfa the same as plucking the blossoms increases the flowering of sweet pea vines.

An experiment made by the Nebraska experimental station at Lincoln, to show the comparative yields of forage plants and tame grasses, proved that the yield of one cutting of alfalfa was from four to six times

greater than the others. The experiment gave the yields per acre as follows: June clover, 2365 pounds; Mammoth clover, 2375 pounds; Alsike clover, 2065 pounds; alfalfa (first cutting), 4080 pounds; blue grass, 2875 pounds; orchard grass, 2390 pounds; timothy grass, 2800 pounds; red top grass, 2350 pounds; meadow fescue, 1875 pounds; tall meadow oat grass, 3000 pounds; timothy, orchard grass and blue grass together, 1015 pounds. This gave alfalfa first place by 1080 pounds over its nearest competitor, the oat grass, but this was only the first cutting for the alfalfa field, and two more cuttings followed, while the other fields were not cut the second time. With the three cuttings, and a fourth crop estimated at 1800 pounds, the alfalfa field yielded 12,720 pounds, or six and one-half tons per acre. The next best record was a ton and a half.

Bees make the best of honey from the nectar of the purple alfalfa blossoms. With the cultivation of the crop on the prairie farms came the apiaries. Bee hives are now to be found where a few years ago bees were unthought of. Some place the qualities of the blossoms as a feed for bees above the buckwheat, and red and white clover blossoms. In a country where the crop is ex-

tensively grown bees have been known to have a continual feed from May 10 to October 16. The flow is normally from June to October. Alfalfa is also considered an excellent feed for poultry. The leaves are valuable to color the yolk of eggs in winter.

In California alfalfa has been cultivated extensively for many more years than in the Middle States. Many wonderful stories are told of profits made in that state from the fields under irrigation. One is of a field of twenty-five acres which yielded over \$2000 worth of hay in one year. On the Pacific coast the first crop is often harvested in April and the last in November. In the San Joaquin valley the feeding of 350 cows on 500 acres has been claimed. California, Utah and Colorado are the only states where the crops are grown extensively under irrigation. In Colorado the winter feeding of sheep on alfalfa hay has become a gigantic industry.—Saturday Evening Post.

Desert Land, Final Proof. NOTICE FOR PUBLICATION.

U. S. Land Office, The Dalles, Oregon. April 27, 1903. Notice is hereby given that William N. Cobb, of Sisters, Oregon, has filed notice of intention to make proof on his desert-land claim No. 80, for the NE 1/4 sec 31, T. 14, R. 11 E., W. M., before J. J. Smith, County Clerk, at Prineville, Oregon, on Friday, the 12th day of June, 1903. He claims the following witnesses to prove the complete irrigation and reclamation of said land: Henry Carlin, E. H. Sparks, John Taylor and M. M. Thomas, all of Sisters, Oregon. M8512 MICHAEL T. NOLAN, Register.

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