

FARM AND GARDEN.

MATTERS OF INTEREST TO AGRICULTURALISTS.

Some Up to Date Hints About Cultivation of the Soil and Yields Thereof—Horticulture Viticulture and Plant-culture.

Canalgre (Rumex Hymenosepalus).

ITS HISTORY AND DEVELOPMENT.

Bulletin seven of the Arizona agricultural station is devoted to the history, chemical analysis, botanical characteristics and cultivation of the canalgre plant. The report was made by Prof. C. B. Collingwood, chemist; Prof. J. W. Toumey, botanist; and Prof. F. A. Guley, director of the station. Relative to their investigations they say:

Soon after the organization of the Arizona experiment station the attention of the station staff was called to the canalgre as a plant worthy of investigation. Feeling assured that, if the plant was of commercial value, the available wild growth would soon be exhausted, and at most would hardly warrant its adoption by the trade unless a large and constant supply could be depended on, it was concluded that the investigation should include cultivation as well as determination of the properties of the plant in other ways. For the purpose of calling attention to the plant and securing all possible data to its geographical distribution and habits, a bulletin was issued in April, 1892, stating the object of the investigation. Chemical examination was begun in March, 1891, and the first roots were planted in July, 1891, since which time the work has been in progress. Members of the station staff have studied the growth and gathered roots from a large area of the country, embracing the Salt, Santa Cruz, Rillito River valleys, and many specimens have been secured from other places and from New Mexico and Texas for examination, and the wild growth and plantations set last fall near Deming, and in the Pecos valley, New Mexico, examined by a member of the staff quite recently. Soon after commencing the investigation we were led to believe that if the plant would respond to



[The above figure represents a plant from which a few of the leaves at the base have been stripped away. It shows the roots a little larger as compared with the rest of the plant, but otherwise normal. The thick short root is more than a year old, the other three of one year's growth.]

cultivation its production would rapidly develop into a large industry, and the investigations to date fully realize our expectations.

HISTORY.

Canalgre has been used for many years by the Mexicans both as a medicine and as a tanning material, but only in recent years has it attracted attention as an article of commerce. In 1868 a sample of the roots was sent from Texas to the agricultural department at Washington, but it was mislaid and the analysis was not made until 1878. In 1880 Prof. Henry Trimble published an article on canalgre, in which he gives its history to that time, and records some analysis made by himself and others. He states that Mr. Rudolph Velcker of Galveston, Texas, published an analysis of roots gathered in 1874, giving 23.16 per cent of tannic acid. Roots were exhibited at the New Orleans exposition labeled, "A New Tanning Material." Since then considerable attention has been given to this plant and a number of articles have been written, both in this country and abroad, in all of which it is agreed that canalgre is a valuable tanning material. So far as we can learn, the first effort made to establish the commercial value of canalgre as a tanning product was in the year 1882, when Col. J. C. Tiffany, then government agent for the Apache Indians, at San Carlos, Ari., shipped considerable quantities of the root from Deming, N. M., and El Paso, Texas, to New York city and also to Germany, Austria and Great Britain. The root was first shipped green, which caused it to ferment, and its use abroad in a fermented condition destroyed the leather to which it was applied, which temporarily brought it into disfavor; but subsequently, in the year 1884, the root was shipped by one of Col. Tiffany's sons, in a sliced and dried state, when it arrived abroad in good condition, was successfully used in all experiments made, and immediately met with great favor. Nothing resulted from the efforts of Col. Tiffany and his associates, for the reason that it was feared the root in its wild state could not be secured in quantities at a price which would enable it to be brought into general use, and its cultivation at that time was not thought of. Not long after this Thomas Fitch, Esq., organized a

wealthy company in San Francisco, Cal., for the same purpose, but the enterprise was abandoned by its projectors because sufficient canalgre could not be found to meet the demand which the company was organized to supply, the idea of cultivating the plant not having occurred.

EUROPEAN EXPERIMENTS.

The Canalgre Supply company, of Tucson, Ari., first as a partnership and subsequently as an incorporation, has devoted several years to and expended considerable capital in introducing canalgre to the trade. A number of small shipments were made to chemists and tanners in this country and Europe for experimental purposes. Large shipments followed to meet the demand which resulted from such experiments, the product having met with favor wherever used. This company claims to have procured letters patent for a certain process of manufacturing an extract from canalgre. Experiments made with this process are said to have determined the fact that an extract can be made from cultivated canalgre at a cost with which extracts of oak and hemlock can not compete. Mr. E. C. Denig of Deming, N. M., has taken an active part in calling attention to the merits of this plant, expending both time and money in getting tanners to test its merits in the manufacture of leather. He sent samples of roots in considerable quantity to Chicago and other places, and with the aid of chemists whom he employed, succeeded in making an extract of a high grade. The establishment of the tanning extract works at Deming is largely the result of Mr. Denig's labors.

DEMAND FOR CANALGRE.

Mr. R. J. Kerr, of Deming, N. M., who is engaged in gathering and shipping canalgre, has kindly furnished the following information. He says: "I shipped the first car load ever shipped from Tucson in February, 1887, to Martin & Miller, Glasgow, Scotland. It was shipped in the green state and arrived there in good order. After the trial they told me, while in Glasgow, that they alone could use ten thousand tons annually if it were possible to get it at \$8 (\$40) per ton in a sliced and dried state. In January, 1890, I shipped the first car load, sliced and dried, from here to Liverpool. In some unaccountable manner it got wet and, with the exception of four or five sacks, was ruined. I then made continuous shipments for the balance of the year with but slight loss." Among the articles which have appeared is one that deserves more than passing notice: "Canalgre, a New Tanning Material," by Prof. W. Eitner. Prof. Eitner is at the head of the Vienna Research Station for Leather Industry, and a recognized authority in Europe on such matters. He has tested canalgre from the standpoint of a practical tanner. In that article he especially recommends it for its quickness in tanning. He says: "I consider this article especially adapted for tanning uppers, fine saddlery and fancy leathers. It can be used alone or in connection with other materials." He also states that at the price laid down in Vienna—18 florin per 100 kila (about \$65 per ton)—it is quite reasonable. In fact he has everything to say in its favor, and nothing against it.

The European tanners are awake to the value of this material. The German Tanning school at Freiburg, Saxony, mentions canalgre as one of the materials with which they are working and experimenting. In 1886 a tannery was erected at Tucson for tanning hides with canalgre, but owing to lack of proper management and disagreement among stockholders the business was never fairly started. A considerable number of cattle hides and other skins were tanned and sent to leather dealers in this country, all of whom rated the material produced as of first quality. That canalgre is an efficient and valuable tanning agent is no longer a question. It has passed the experimental stage, and would no doubt be adopted at once by the trade if it were not for the fact that the present supply is limited and uncertain.

Grasses for Grazing.

Bulletin No. 33 has just been issued by the Utah experiment station at Logan. It treats of the "grazing values of varieties of grass," and "drilling versus broadcasting grass seed." The grazing experiment has been carried on for two years on upper bench gravelly soil. In 1893 a steer was kept on each of the half acre lots during the whole summer; while in 1894 two steers were put on each half acre the latter part of May, and the lots quickly eaten off. This gives a test of the lasting qualities of the different grasses, as well as a test of their early growth. Two points are brought out prominently of practical importance; the first is that lucerne comes seventh out of a list of nine for an all summer pasture, and only gets to second place as an early pasture. This strongly indicates that there are several grasses better for pasture than lucerne. The other point is that a "mixture" of grasses gave nearly double the gain of any of the common grasses alone. The bulletin is summarized as follows: "A mixture of pasture grasses proved very much superior for grazing steers to each one of the grasses sown singly. "Of the single varieties, tall oat grass leads, with timothy second, and lucerne third. "The results indicate that the difference in the pasturage value of the several grasses is very marked." The drilling of timothy seed, as against broadcasting, gave an increase in yield of hay of about 8 per cent. There was found to be less moisture in the drilled area than in the broadcasted area; though this fact may not be unfavorable. Temperature slightly favored the drilled area.

His Heart Bowed Down.

He accented me as I came out of the postoffice on Broadway and wanted to know whether the Broadway cable was the only one now at work. I said there was another on One Hundred and Twenty-fifth street, running up to High Bridge, and was about passing on when he grabbed me by the arm and said in a whisper:

"Which is the worst?"

"There's no choice," said I shortly, preparing to cross the street.

"Then these New York newspapers are blamed for, b'gosh, and I don't keer who knows it!" said he.

"What's the matter?" I asked, with interest.

"I've been readin' nothin' lately 'cept 'bout accidents by the deadly trolley and the bloody cable, and I've been ridin' all over Brooklyn without seein' a durn accident and spent 35 cents on this line without so much as seein' a newsboy hurt. It ain't fair, that's what it ain't." And he shook his head sadly and crossed over and took a Fourth avenue horse car up town.—New York Press.

A Temple of Health.

Where vigor, good digestion, appetite and sound repose minister to physical comfort, is the bodily structure which, however much its foundations have been sapped by ill health, has been restored—re-built, as it were—by the great renovating tonic, Hostetter's Stomach Bitters. Nothing infuses strength into a debilitated frame like this saving medicine, which, in the vigor and regularity it imparts to the system, endows it with the surest defense against disease, and the best guaranty of a long life and hale old age. Worn out men of business, tired mechanics, overworked mill hands, miners broken down by hardship and exposure to malaria, mariners and tourists, all declare that it is the best safeguard against the influences of fatigue, bodily or mental, and of climate and temperature. Incomparable for bilious, rheumatic, kidney and nervous troubles.

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The Rochester Post-Express tells of a clergyman whose sermons were of the best, but who was reserved and bashful. "You must be more social," the deacons hinted. To his Sunday school came the children of an orphan asylum. The next Sunday the pastor stalked across the room, and grasping the first hand he came to, which happened to belong to one of the smallest orphans, cried out loudly: "Good morning, my dear sir. How are your father and mother?"

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Hall's Family Pills, 25c.

All Kinds.

Owensboro (Ky.) Messenger: A gentleman of this city who has three charming and beautiful daughters several years ago corked up a bottle of old whisky, saying at the time it should not be opened until one of the three married, when the liquor should be drunk to the health of the bride at the wedding feast. The whisky is now thirteen years old and the girls are still unmarried. What a luscious chance for some thirsty young man.

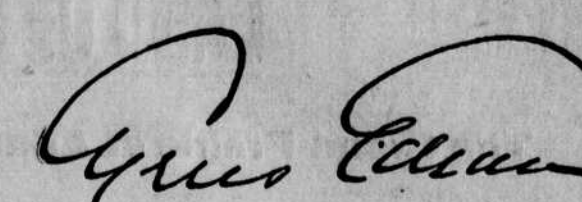
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Disobedient Turkey.

A recent story in the Youth's Companion reminds a correspondent of another instance in which a tiresome march was relieved by a bit of drollery.

Major B. was a severe officer. His command was marching along a hot and dusty road in southern Pennsylvania. Orders were very strict against foraging, but in spite of them a soldier suddenly sprang out of the ranks in pursuit of a fat gopher standing among the sumac bushes on the roadside.

The turkey started off in a hurry, with the man after him. Major B. called out angrily: "Halt! What do you mean? Halt!"

A few hurried steps and the soldier laid the turkey low with a blow from his rifle barrel.

"There, dum ye!" he exclaimed as he picked it up. "I reckon you'll understand that when the major says halt he means halt!"

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