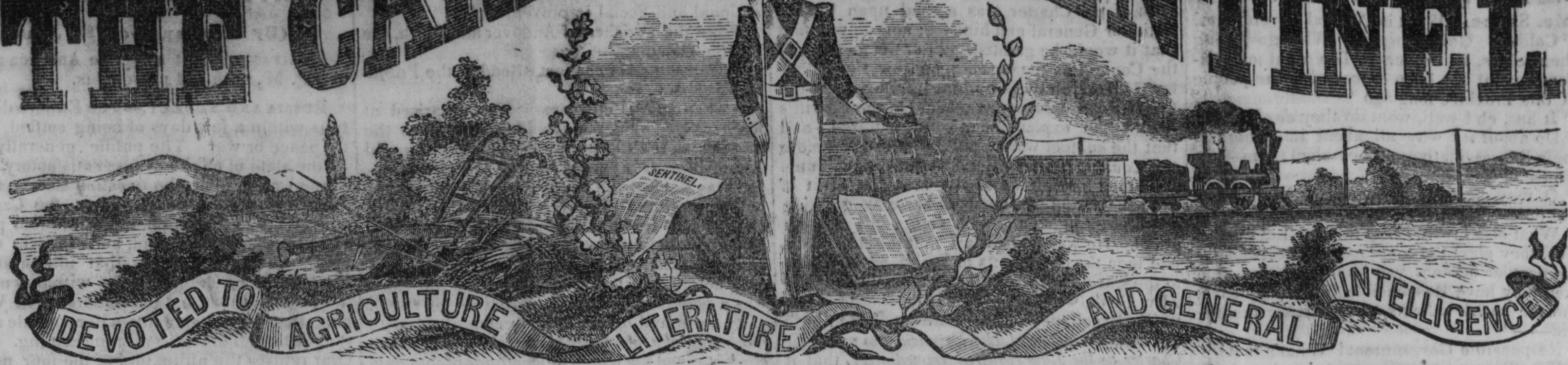


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## Agricultural.

From the New England Farmer.

### MAKING BUTTER.

MESSERS. EDITORS.—It is somewhat singular that such different results should be produced by two persons in the operation of churning—one person operating in your house, and the other in your next neighbor's. They are as different as the rose and the poke weed in odour, and in taste no more alike than sherry wine and castor oil. Is all this difference owing to the house, or is it in the churn, the woman or the cow? There is no luxury produced in the tropics that is a more agreeable addition to the substantial of the table than good butter; and carrion is not much more disgusting than a great portion of the grease that is marked in the metropolis of our State under the name of butter.

This, however, is foreign to the purpose which I have in hand, and for which I have taken my pen. This is not to write upon the qualities of butter, or to give directions for making a good article. My object is rather to make inquiries than to give a lesson, and my aim is toward the principle upon which the article is made, rather than the mode of making it. I have often thought it rather strange that a man so thoroughly scientific, and at the same time so practical, as Chaptal, who devoted a chapter of his excellent and instructive work on Agricultural Chemistry to the subject of butter, should have omitted to inform us how it is produced. Perhaps there is not a butter-maker in this Bay State, though we have a very conceited opinion of our superior knowledge, that can answer the question involved in the four closing words of the last sentence, simple as it seems.—By answering, I mean, of course, giving a satisfactory explanation. Is the only part of the milk which constitutes the article called butter, separated from the lime, serum, &c., by mechanical affinity, temperature, or fermentation? At first sight many readers will exclaim that it is a useless, nonsensical question, and they don't care to know. A sad error. This knowledge is not only satisfactory, as all knowledge is in itself, but it is practical and useful. If known, it may afford a clue to the true mode of making it, so as to be produced by less labor, and also of a superior quality;—and will direct us to the true desideratum in making the best churn, if churns must be used, or in finding a substitute for that machine, that will do the work more easily, speedily, or perfectly. It is well known that butter cannot be produced if the cream is at too high a temperature. The proper degree of heat is said to be 48, or that of the well or cellar in summer. The operation of the churn seems to be founded on the idea that the separation is mechanical, and that the cohesion of the oily particles with the lime is so slight, that repeated and continued blows with a dasher or stick will completely effect this separation through the entire mass. But if it may be produced by mechanical force of heating, it is certain that it may be produced, also, without that means, as is proved by the fact I shall relate. In my boyhood, about forty-five years since, my mother kept a single cow, to supply her family with milk. The household being pretty numerous and several children, she usually found a full demand for the milk;—but having several times collected a redundancy of cream, and having no churn, she tied her cream in her thick pudding bag, and buried it in the ground twelve or eighteen inches, (if I remember aright,) and in the morning took out most excellent butter, into which the cream had been changed. Now there was no mechanical process in this conversation. And the question is, did the temperature

alone effect it, or was it assisted by chemical affinity, or by fermentation. Air produces fermentation; so does water. And there is opportunity for the admission of air, either by the proceeding above related, or by churning. The oxygen or hydrogen of the air might also have the effect of separating the lime from the oily part of the milk, by mere chemical affinity, without fermentation. And this, I am inclined to think, is the true process in the production of butter, which is easier at a peculiar degree of temperature, because, the cohesive power of the oil and lime is feeble at that, than at a higher temperature. In churning, not much air is admitted into the churn, but the most is made of a small quantity, by stirring it so that it comes in contact with every portion of the cream. Now if I have named the true principle of butter making, it will afford a light which will serve to guide our wives in this part of their rural industry, and the ingenious may make an application of it that may be serviceable in the keeping or conversion of the cream, or in the construction of the churn.

I think, that an explanation in full of the secret of the production of butter by a scientific and practical chemist, with detailed statements of the experiments by which he has attained his results, would be an interesting paper for your columns.—There is nothing more interesting or more beautiful than the application of science and of useful knowledge to common things.

You mentioned in one of your late numbers that a gentleman of Brussels had recently found a way of separating the cream from the milk more speedily and perfectly, by mixing a solution of carbonate of soda, and other matters. This, I think, confirms my idea that the separation is effected by chemical affinity, and affords ground for the inference that the further separation of the other matters from the butter may be produced by the mixture of the same or some other substances. It may be the carbon of the atmosphere which produces the separation, by its affinity for the other matters of the milk and cream, stronger than that of the oily matter.

Some of your readers will say, perhaps, as before intimated, that all this is of no use. Those who make good butter are content to know how to make it, and don't care to inquire into the rationale. And those who make bad butter are not the kind who are disposed to seek knowledge. While many people think all knowledge useless, and others talk about useful knowledge, in distinction from that which is useless, I am one of a third class who think all knowledge useful. But I think especially that the knowledge of the principle of the production of an article of so much prominence in our system of dietetics, composing a part of the table of every family through every season, may be well considered in the class of useful knowledge, if there be any that is useless.

W. J. A. B.

A CHEAP AND DURABLE WHITEWASH.—The lamented Downing, recommended the following preparation of whitewash for brick or stone, as cheap and durable, and thoroughly tested by him. Those who do not file their papers, should cut it out and preserve it for reference in time of need: "Slack half a bushel of lime in a barrel, by pouring over it hot water enough to cover it four or five inches deep, stirring till slacked; then fill the barrel two-thirds full of water and add one bushel of water-lime. Dissolve in water, and add 3 pounds sulphate of zinc. The whole should be the thickness of paint, ready for use with the brush. This wash is improved by the addition of a peck of white sand, stirred in just before using. The color is a pale stone color, nearly white. To make it fawn color, add one pound of yellow ochre, two pounds of raw umber, and two pounds of Indian red. To make it drab, add one pound each of Indian red, umber and lampblack."

## Miscellaneous Extracts.

### CHINA.

Some extremely interesting intelligence has been received from the seat of the rebellion in China, which throws considerable light on the character and prospects of the insurgents. It appears that H. M. Steamer *Hermes*, had been sent up the river Yangtze, as far as Nankin, for the purpose of explaining to the rebel chiefs the neutral position which all foreign Governments were disposed to hold during the struggle. Her gallant commander, Sir George Bonham, was in communication with several of the chiefs, and was perfectly successful in his mission. Nankin was found to be in full possession of their forces, as well as the neighbouring city of Ching-kiang, and the whole line of river between the two cities was in a complete state of defence. The rebels were awaiting reinforcements from the South, when they would proceed on their way to Peking, the fall of which would, doubtless, secure their permanent triumph over the Tartar Dynasty, that has so long held power, and abused it in the Flowry Land.

The information obtained regarding the character of the insurgents is very curious, nay, even astounding. The language of the proclamations, issued by them some time ago, led us to believe that they possessed a knowledge of the Bible,—a glimmering of the truth of that word which is given by our Heavenly Father for the healing of the nations,—but the fact is now confirmed in a remarkable manner. It is stated that a very correct translation of the Bible is freely circulated among them, and a zeal amounting to fanaticism is leading them on to attempt the destruction of the whole Tartar race, while strictly moral duties are not only prescribed, but enforced and practiced. One convincing proof of the sincerity of the ruling minds is, that while fighting to free their country from a foreign yoke, and anxious to obtain adherents, they nevertheless, throw great difficulties in the way of a rapid increase of numbers, by insisting on the general adoption of a new and revealed religion learnt from "barbarians."

"The Popish Missionaries in China," says the *Gazette*, "worthy men are sadly perplexed at the principles professed by the gallant revolutionists. The latter denounce all idolatry, batter down the temples, and smash the idols into powder. They clear out the Chinese convents—set the male and female drones, if we may so speak, to work—and exhibit to the public cachinnation dresses, utensils, and machinery, which time and habit had hitherto stamped with a certificate of especial holiness.—This appears to be more than Popery asks for anxious as the latter is for the triumph of the insurgents. The rebels profess an easily recognizable Christianity. They take the Ten Commandments and the New Testament for the basis of their law and the warrant of their action. Their creed seems orthodox, and they acknowledge an earthly head as well as a Divine Master; but whether all this be the result of the teaching of the Jesuits, or the working of the Secret Societies founded by them, or of the instruction sown by such men as Gutzlaff and Morrison, it is impossible as yet to positively determine."

The *North China Herald* gives the following, on "good authority":—

"The insurgents are Christians of the Protestant form of worship, and anti-idolaters of the strictest order. They acknowledge but One God, the Heavenly Father, the All-wise, All-powerful, and Omnipresent Creator of the world; with him, Jesus Christ, as the Saviour of mankind; and also the Holy Spirit, as the last of the Three Persons of the Trinity. Their chief on earth is a person

known as 'Tae-ping-wang, the Prince of Peace, to whom a kind of divine origin and mission is ascribed. Far however, from claiming adoration, he forbids in an edict the application to himself of the terms 'Supreme,' 'Holy,' and others, hitherto constantly assumed by the Emperors of China, but which he declines receiving on the ground that they are due to God alone. Their moral code the insurgents call the 'Heavenly Rules,' which on examination proved to be the Ten Commandments. The observance of these is strictly enforced by the leaders of the movement, chiefly Kwang-tung and Kwang-se men, who are not merely formal professors of a religious system, but practical and spiritual Christians, deeply influenced by the belief that God is always with them. The hardships they have suffered, and the dangers they have incurred, are punishments and trials of their Heavenly Father; the successes they have achieved are instances of His grace. In conversation they 'bore' the more worldly-minded by constant recurrence to that special attention of the Almighty of which they believe themselves to be the objects. With proud humility, and with the glistening eye of gratitude, they point back to the fact that at the beginning of their enterprise, some four years ago, they numbered but 100 or 200; and that, except for the direct help of their Heavenly Father, they never could have done what they have done."

"They, said one, speaking of the Imperialists, spread all kinds of lies about us. They say we employ magical arts. The only kind of magic we have used is prayer to God. In Kwang-se, when we occupied Yung Gnan, we were sorely pressed; there were then only some 2,000 or 3,000 of us.—We were beset on all sides by much greater numbers; we had no powder left, and our provisions were all gone; but our Heavenly Father came down and showed us the way to break out. So we put our wives and children in the middle, and not only forced a passage, but completely beat our enemies."

"After a short pause he added—

"If it be the will of God that our Prince of Peace shall be the Sovereign of China, he will be the Sovereign of China; if not, then he will die here."

"The man who used this language of courageous fidelity to the cause in every extreme, and confidence in God, was a shrivelled up, elderly, little person, who made an odd figure in his yellow and red hood; but he could think the thoughts and speak the speech of a hero."

MORE ROMISH MIRACLES.—The official paper of Naples records another miracle; this time the image of the "Mother of God, the Holy Virgin," caused flames to issue from her chest. The whole affair is very gravely printed in the Government paper. Several miracles are exciting the attention of the Cardinal Vicar and the ecclesiastical authorities at Rome, amongst which is the supernatural exuding of blood from a picture of our Saviour, in a school established for girls by Princess Wolkonsky, in the Via del Moretto. Gendarmes have been stationed around the locality, and the usual precautions taken for procuring direct evidence of the fact.

PRIESTLY DENUNCIATIONS.—Mr. Somers lately deposed before a parliamentary election committee that he was denounced to his face by one of these *soi-disant* apostles of God. "The priest stated (says Mr. Somers) that he was happy to have the opportunity of finding me in his chapel, and he pointed to the gallery where I was sitting, every eye in the chapel being fixed on me at the time, or every eye that could by possibility reach me. He stated that I was a traitor to my religion and country, and that any man who supported me voted for hell and the devil, and that every man who voted for my opponent, Mr. Towneley, voted for God and Heaven. Is it to be wondered at that landlords are shot like dogs, when priests thus speak daggers from their own altars?—*Londonderry Sentinel*."