

The past winter was of a uniform coldness, without being too severe, and the fruit having thus far escaped the spring frosts, which some seasons fatally assail it, our prospects for an abundant crop are quite promising.

METEOROLOGY.

The subject of meteorology is one that should attract more general attention than it does, its laws being comparatively unknown at the present time, and even the most trifling observations, suggestions and experiments made with reference to this important science should be recorded and carefully examined and preserved. We constantly meet with persons of but little general intelligence who can predict almost with certainty some of the approaching changes of wind or weather, by carefully noticing certain indications which are known from their own and the experience of others to be generally correct. Were all the weather philosophy of farmers, sailors, fishermen, hunters, shepherds, stage drivers, and others, collected, it would constitute a volume filled in a great measure with suggestive information; and like the unavailing search after "the philosopher's stone," or fruitless experimenting in the hopes of discovering "perpetual motion," though not resulting in positive success, the very failures and disappointments experienced by the alchemist and the mechanical experimenter have been the means of opening new channels of thought in the minds of others, terminating in the wonderful discoveries of the chemist and the magnificent mechanical contrivances of modern times.

The united historical evidence from the battlefields and naval engagements of Europe since the commencement of the present century, and of our own battle-field during the rebellion, concur in sustaining the meteorological fact that cannonading affects the atmosphere to such an extent that thunder-storms and heavy rains, or rains alone, almost always accompany or succeed where it has been for many hours heavy and continuous. This war has also demonstrated, what is of more importance to us, that heavy and continuous firing affects the atmosphere not only in its own immediate vicinity, but at hundreds of miles west or north of it, by producing within a few hours sudden, and, in most cases, unseasonable changes of the winds, usually accompanied by cloudy weather or rain without thunder-storms; and in no instance at any season for the last three years has a general engagement been immediately succeeded in this latitude by severe cold weather, the cannonading appearing to have complete control over the currents of air producing cold.

If, then, the cannonading of this war, which was confined to certain lines of latitude and longitude, produced rain in their own vicinity, and at points more or less distant, what effect would cannonading from batteries arranged across the continent on different lines of latitude, and connected by telegraph so as to notify of approaching storms, have on the atmospheric currents? Would batteries, taking St. Paul's as the line of latitude, have dispersed the cold storm of January 1, 1864, thereby preserving from destruction so many valuable animals and fruit trees, or the August frost of 1863, which destroyed half the value of the growing crops of the West? or batteries, taking Chicago as the line of latitude, check the spring frosts that so frequently annihilate our fruit and damage our wheat, after they have escaped all the perils of winter? or at what points should batteries be worked this present season for the purpose of suspending for a short period the rains which are now retarding the planting of the staple crops of the West?

Surrounding the coast of Great Britain there is a system of signals warning mariners of approaching storms, the signal stations being connected by telegraph. If cannonading can disperse those storms, how much more advantageous would it be to the seamen and fishermen than to be compelled to remain in port waiting for the storms to disperse themselves.

These are all points of much interest, and are worthy of being experimented on under the supervision and control of an enlightened and unprejudiced meteorologist. Before the removal of the batteries from the vicinity of Richmond and other points it is the duty of the Government to institute a series of experiments bearing on this subject, which, if conducted systematically and honestly, will certainly, in this latitude, go to sustain the rain theory.

ROPER'S ENGINE.

Messrs. Butterfield & Haven, of your city have just furnished a printing office here, with one of the largest sized "Roper's Calorics." This beautiful piece of mechanism reflects the highest credit on the accurate workmanship of the builders, there being no tantalizing leaks, binding places or drawbacks to retard its erection or standing, the whole occupying but eight hours; its movement from the beginning being apparently as accurate as that of a well-constructed clock.

By connecting with the exhaust of these machines a hollow shaft, on which are placed at proper distances two sheet-iron disks formed like watch glasses, the concaves opposite each other, and similar in their general arrangements to the exhaust disks used by the "London Atmospheric Railway," it is very probable that a large percentage of power might be added to those calorics, this form of exhaust requiring comparatively but little power to operate it. A similar device might be applied to high-pressure engines with advantage; some of your enterprising mechanics should give this a thorough trial; it is entitled to it. Why not apply these machines especially to the heating of buildings, regardless of their power purposes?

The exhaust of the machine would furnish a large amount of heat, or it could be driven into a supplementary dome, and additional heat added before passing off; or an additional pump worked by the machine could drive air into one or more additional domes. The large amount of fresh air which these machines consume should make them the very best and cheapest appliances for heating that is now before the public.

Springfield, Ill., May 15, 1865.

[We are pleased to give our correspondent a hearing, but do not indorse his views.—Eds.]

BOOKS AND PUBLICATIONS.

BODEMANN AND KERL'S ASSAYING.—This is a small book of 214 pages, published for the "Berzelius Society," by John Wiley & Son, 535 Broadway, New York. It is translated from the German by W. A. Goodyear, Ph. B., late Assistant in the Sheffield Scientific School, etc. It embraces only that portion of Bodemann's work relating to the assay of lead, copper, silver, gold and mercury. It is intended especially for proficients, and will be regarded by them as indispensable unless they possess the original. The incongruous weights of the German States are not reduced to the French standard, a labor which would have materially increased the value of the translation.

Benzoin as an Insecticide.

As our houses and gardens are always more or less infested with vermin, it is satisfactory to know that benzoin, an article well-known as a detergent, is efficacious as an insecticide. Two drops are sufficient to suffocate the most redoubtable pest, be it beetle, cockchafer, spider, slug, caterpillar, or other creeping thing. Even rats and mice decamp from any place sprinkled with a few drops of benzoin. A singular fact connected with this application of benzoin is, that the bodies of the insects killed by it become so rigid that their wings, legs, etc., will break rather than bend, if touched. Next day, however, when the benzoin has evaporated, suppleness is restored.—*Boston Cultivator.*

[This must be benzine; benzoin is a gum.—Eds.]

Rate of Emigration.

The whole number of immigrants who arrived at New York City in the first three days of the week ending the 20th of May, was 4,681. Two steamers arrived subsequently, swelling the total to about 6,000. Another ship was expected, and possibly a steamer, which may bring the figures to 7,000. This is at the rate of 28,000 per month, or 336,000 per annum, at a single port, when the season for large arrivals has not commenced. That begins in June, and usually continues to October and November. We have not seen a report of the arrivals at other places; but every European steamer brings fresh intelligence of the swelling exodus on its way hither, comprehending every nation from the Caspian to the North Sea—every occupation, and that physical ability we can measure from experience.



Are Copper Cartridges Unreliable in Cold Weather?

MESSRS. EDITORS:—In your issue of May 20, I notice a letter from H. W. S. Cleveland, in which the statement is made that "copper cartridges are unreliable in cold weather." Now, this seems so strange and new to me that I am prompted to give my own experience in the matter. I have used a Wesson rifle nearly four years, and in all kinds of weather peculiar to this latitude. During this time I have used not less than one thousand cartridges—possibly nearly double this number—and they have never missed fire but twice. The first instance was a warm day in September, 1863; and, as it had never missed fire before, I was a little surprised; but on removing the cartridge and turning it around half way, it exploded on the first trial. The second instance was a very cold day in December following. After trying this cartridge till the end was full of indentations, I placed it in my pocket for inspection.

Now, what was the cause of these cartridges missing fire? I attribute the failure of the first to the absence of fulminating powder in the part first struck; but the failure of the second was not caused by cold weather, as a close examination proved. On opening this cartridge, I could discover no trace of fulminating powder! Both of these cartridges were taken from the same box. Now if cold weather destroys, for the time, the fulminate in the cartridge, why does it not also destroy the percussion cap? Before we accept this cold-weather theory, let us hear from others. What say you, riflemen?

L. H. PLAISTED.

Woonsocket, R. I., May 22, 1865.

The Trials of a Patentee.

MESSRS. EDITORS:—Not feeling in a very amiable mood, I address you relative to the troubles of a patentee—myself, and others similarly situated. There appears to be an organized band of patent thieves in this place; their *modus operandi* is first to obtain, if possible, power of attorney to sell the patent. If successful the victim had as well engage in other pursuits, for he has given away his patent. If not successful, they try to buy portions of the territory, offering a very small sum, accompanied with the threat that they intend to sell it, with or without your consent, endeavoring to bully a poor fellow to accede to their demand. Both of these methods failing, then some one of the fraternity assumes to be the patentee, who commissions, with power of attorney, the others, and they go forth to victimize unsuspecting parties whenever and wherever they find an opportunity. The difficulty arising from their rascality to the patentee, is his inability to come in contact with persons buying of them, and having to satisfy them that they have been "sold"—to use a slang phrase—which is a serious one sometimes. Now, if there is no mode to bring these gentry to justice there should be. They are irresponsible parties so far as property "comeatable" is concerned.

I hope you will call attention to these pests through your valuable publication, for they are the cause of much of the deep-rooted antipathy to patent venders. I don't care how good a patent a man has to sell, he is looked upon as a swindler—making it a very disagreeable business to persons of sensitive natures. If a law of Congress could be obtained that might reach the offenders more direct, and without such enormous expenses, it would confer great favor upon many honest and poor inventors. A. C. T.

Galesburg, Ill., May 12, 1865.

[We publish our correspondent's letter with the hope that it may lead to the exposure of the characters to whom it refers. If one or two of them could be tried and punished as swindlers, it would speedily break up the practice complained of. Patentees should be very careful not to commission unworthy men to sell their rights. The business of selling patents is just as reputable as any other sanctioned by law, and just as few swindlers are engaged in the business as in any other. There are plenty of rogues in all trades and professions.—Eds.]