

a belief that he was governed at any time by improper or corrupt motives in not making earlier or larger purchases of the Eureka projectiles. The court believes that the relative merits of the Eureka, the so-called Taylor-Dyer, the Amsterdam of the latest pattern, and possibly others, have not yet been fully established. The Eureka, from the evidence, appears to have qualities which make it the equal of the best, and it is believed that further trials, such as were recommended by the Ordnance Board of 1868 for the Taylor-Dyer and Eureka, will determine which projectile or projectiles of those now most approved should be adopted hereafter for services in the field."

We shall give on another page some of the conclusions of the Joint Committee on Ordnance on experiments with heavy ordnance, of interest to inventors, as showing the views of the Committee upon the requirements of modern ordnance.

It is a fact of great significance that this Committee believes the Ordnance Department of the Army may be entirely abolished without detriment to the good of the service, and with great economy to the Government.

EXCITEMENT A DISEASE OF SOCIETY.

This country is greatly benefited by German immigration. The peculiarly philosophical tendency of German mind, the calm patience with which it investigates all questions of importance, the independence with which it rejects what it considers false, and asserts what it believes to be true, are elements of character and good citizenship anywhere, but are particularly valuable in a mixed population like the American.

In a recent conversation with a German friend upon the state of modern society, he made the following very forcible remark: "Excitement is disease. Man does not need it. He ought not to have it. What a healthy mind most craves is placidity; to do its work in perfect calm, without any stimulus except that afforded by perfect bodily health. Mind and body healthy, each will give all the stimulus the other needs without resort to artificial means."

There is so much meaning in this that it will bear considerable amplification. Mental dissipation and physical debauchery are alike disastrous in their effects; alike breed a fierce appetite for more, an appetite that will not be appeased except by deeper and deeper drafts, which finally ruin body, mind, and soul.

The taste for mental excitement now prevalent through all classes of society, is strongly evinced in the theatrical performances, the prominent literature of the times, the morbid taste for sensational displays, involving danger to human life, the detailed accounts of crimes and executions demanded of the press by the public, and the general personal uneasiness to be observed when people have nothing in particular to do. Few Americans, comparatively, can sit down and content themselves in quiet thought. The sensational novel is one of the mildest stimulants resorted to by a large mass of our people to "kill time," as it is called. A philosophical work would reduce them to the last stages of mental exhaustion. A discussion upon any solid topic is ineffably wearying. Their mental motions are, so to speak, shaky and uncertain till they have had their intellectual grog. They look with wonder upon a man or woman who can do hard mental work, and stand it without recourse to any stimulus, without at all comprehending that it is not work, but worry and excitement which kill.

This state of things is so wide spread that we are justified in calling it a disease of modern society. Its symptoms are erotic suicides, speculative manias, gambling, embezzlement, and crimes of a more heinous type.

What is the remedy? This is a question easily asked but terribly hard to answer. Religion, legislative enactments, social philosophy, all seem powerless to effect a cure. We are sometimes disposed to think that the only way is to let the disease run its course like smallpox, producing its unsightly and foetid eruption, until the poison eliminates itself from the body politic. Society, as at present organized, may die of the disease, or peradventure it may survive to enjoy better health afterward.

The social science conventions do not seem to get at the root of the matter at all. They persist in isolating single symptoms and looking upon them as the disease itself. One member will tell you that the inordinate love of wealth is the matter, taking for a text the familiar but utterly false maxim, "The love of money is the root of all evil," and propose to enact laws that shall prohibit the accumulation of giant fortunes. Another will hold up to view what has been with an unjustifiable shrinking from plain speech, styled "the social evil," and attribute all the evils of society to the morbid influence of illicit desire. Another assigns the evils of society to drunkenness, and so on. These things are results—not causes.

We do not profess ability to prescribe a cure for the universal malady of the age. It will require the sober study of philosophers for years to come, but of one thing we feel very certain; namely, that all systems of ethics which place faith in the emotional nature of mankind, only substitute one form of excitement for another without even approximating a cure.

The world has everything to hope from the men who believe religion and philosophy should go hand in hand, and much to fear from the misguided philanthropists who appeal only to feeling.

THE EFFECT OF SEWING MACHINES UPON FEMALE HEALTH.

There are fortunately some American women left whose constitutions have resisted the effects of wrong living and bad dressing, to such an extent that they can sit bolt upright for a considerable time without an excruciating pain in the small

of the back, or walk a mile or two without being sick a day or two to pay for it. Women of this kind can operate a sewing machine at intervals without discomfort, or may follow it as a business without evil consequences. But precisely those who from enfeebled health most need the aid of this invaluable invention, are the ones who are debarred from its use. The effects produced on the latter class of females by the use of the sewing machine have been thoroughly studied, particularly in France, and have been found to comprise a variety of ills peculiar to the sex most employed in such labor, which it is unnecessary to enumerate here. It is estimated that over a million sewing machines are now at work in the United States alone, and it has become a fact recognized both in this country and abroad that the prevalence of pallor, lassitude, pain in the back, and leucorrhœa are more prevalent among those who work with sewing machines than among almost any other class of women.

Since our publication of an article, entitled "The Sewing Machine, its Origin, and Suggestions for its improvement," to be found on page 246, current volume, we notice the subject has been taken up and discussed at length by the press of this city, and a large number of improvements have been suggested to obviate the use of the feet in driving sewing machines; but it should be remembered that it is not the amount but the kind of work performed, that results in injury. A small cheap motor would be very useful, but an application of the power of the body in a manner free from the objections of the treacle motion would be better. The slight swaying of the body from side to side, or a rocking motion might be utilized for this purpose, or the weight of the body raised at intervals might be called in, as a sufficient force for the purpose.

There is a demand for some improvement in the mode of applying power. If motor machines are relied upon for the purpose, they must be of the simplest character, durable and capable of being operated by any one; and both constant and uniform in their action. The latter consideration will for the present exclude electro-motors from competition without taking into account the cost of running such machines by any form of battery now known.

Small portable steam engines, are the next most promising resource, but they cost money to make, and money to run them, take time to get up steam, and are otherwise ill adapted to the purpose. Spring motors are liable to get out of order, and the winding them up is one of many objections against either them or weights. It has been proposed that in large cities small hydraulic engines might be successfully introduced for this purpose, but the impracticability of this will be apparent from the following computation:

The power of the average human frame, is 4,166.6 foot-pounds per minute. Estimating the power required to drive a sewing machine as one-tenth of this, we shall have in round numbers, 466 foot-pounds, amounting per day of ten hours to 279,600 foot-pounds. Allowing the average head in upper and lower stories of buildings to be 30 feet, it will require for a single sewing machine the fall through that head of 9,320 pounds, or in round numbers 148 cubic feet of water per day. If all sewing machines in New York city were to make this extra demand upon the resources of the Croton Board, it would find itself seriously embarrassed to meet it with the present supply.

A small gas engine seems to offer more points of feasibility than anything we can think of, provided the necessity of using an electric discharge to ignite the gas, could be obviated by a cheap and efficient substitute.

The fact remains that a small and reliable motor is very much wanted for this purpose and inventors would do well to grapple at once and vigorously with the problem. "First come first served," is the rule in invention, and he who can bring out the first sewing machine motor, fully adapted to the requirements of the case, is a made man.

Any such machine would also find a wide application for a host of domestic purposes, as well as in the requirements of light manufacturing.

THE RESOURCES OF THE GREAT WEST.—WALLA WALLA VALLEY.

We have had the pleasure of a call from Mr. H. Parker, of Washington Territory, who has given us some interesting information in regard to the resources of the great West, and more especially in regard to Walla Walla Valley, a region of remarkable fertility and mildness of climate, combining advantages for manufacturing with its other attractive features.

This region is one of many of somewhat similar character to be found on the Pacific slope, but has as few drawbacks, perhaps, as can be met with in any region of like extent in the United States.

In the first place its climate is extremely temperate—a fact that may seem to those who have experienced the cold of the northern parts of Washington territory, as being paradoxical, but which is no more so than many other climatic peculiarities to be met with in localities no more widely separated than those in question. But little frost is experienced, and the rich bunch-grass, which abounds throughout the valley, enables farmers to winter their stock with very slender provision for the rare emergencies of cold weather, from which this valley is nearly exempt.

Second, the soil is unexcelled in fertility. Wheat, oats, and barley, are grown in large quantities and of excellent quality, and corn, also, does well. Vegetables and fruits thrive abundantly, and the small labor required to cultivate the soil is amply repaid. Communication with the seaboard is easy through the Columbia River, a distance of some three hundred miles. A branch road, running through the valley, will soon connect it with the Union Pacific road.

There are now a number of thriving flouring mills and saw mills located in the valley, and the water-power is ample to perform all the manufacturing needed for that section. As a future location for Woolen Mills it probably cannot be excelled by any other on this continent. The material is there, the water-power and building materials are there, and cheap Chinese labor, which has been found excellently adapted to such work, is to be had in abundance. The contour of the streams which water the Walla Walla Valley is somewhat peculiar. The tributaries of the Columbia River, which flows nearly parallel through the country like the fingers of a giant skeleton hand, unite, near their influx into the main stream, to form a stream of considerable size. They have not worn deep channels, as is the case with many streams, and gulleys and gorges do not interfere with the full utilization of the fall, which is great, though nowhere abrupt.

The advantages we have named, combined with the great salubrity of the climate, must, at no distant day, make this section one of the most thriving and populous of the fertile regions of the West. It has, at present, a thriving and intelligent white population of seven or eight thousand, with schools, churches, and all the other advantages of older settlements. No trouble is to be apprehended from Indians, they having been all removed to reservations, and peaceful relations firmly established.

Our information in regard to the Walla Walla Valley does not rest wholly upon the statements of Mr. Parker, although that gentleman gave us many new points in regard to it. It was stated to us, years ago, by a gentleman who had thoroughly explored that region, and who has since, for business reasons, settled lower down the river, that, for natural advantages of soil and climate, it would be hard to find, anywhere, a tract of country, of the same size, that could excel it.

The opening of the Union Pacific Railroad, with the projection of the Northern Pacific Road, must give an enormous stimulus to growth throughout the entire northwest, and the capital invested there now will surely be "seed sown in good ground."

METEOROLOGICAL SCIENCE.

The science of meteorology seems to make slower progress, and to have, at present, fewer practical applications than any of the other sciences. A few prominent facts have been discovered, such as the direction of storms, the average velocity with which they progress, the formation of clouds, the effect upon climate of felling large forests, etc.; but such facts scarcely constitute a science. The simple knowledge that certain phenomena of electrical or atmospheric character occur, without the knowledge of the manner of their occurrence, or their physical causes, is practically of small benefit. The causes assigned for most of these phenomena are yet chiefly based on hypothesis. It is true we are aware that winds are caused by heat, and rain is produced by the cooling of moist air; that lightning is a form of electricity, and so forth; but as yet, all researches have failed to detect invariable laws of succession, or relations of cause and effect.

The utmost that can be said by the most skillful meteorologist, is, that when certain atmospheric conditions are indicated by his instruments, dry or wet weather is more likely to supervene than when the converse is indicated. He is still obliged to confess that "all signs fail in dry weather," with him as well as with the unlearned.

Our readers are aware that a series of observations are made from different stations in the United States under the direction of the Smithsonian Institute. These observations are confined, we believe, to barometric and thermometric observations, with some meager remarks as to the state of the atmosphere; whether cloudy or otherwise, wet or dry; and if high winds are prevailing, the fact is also recorded, with the direction from which they blow. These observations are, we believe, generally performed in a very imperfect manner, and really amount to almost nothing. In fact, we believe the money invested in instruments and the time expended are nearly or quite thrown away.

The reports are, to our knowledge, in some cases, made complete by interpolation to cover neglect in the observer, and as there is no check upon their accuracy their tendency would be to mislead rather than otherwise.

The Institute is not to blame for these deficiencies, which attend any system of general meteorological observation requiring personal attention of a large number of assistants, who have no reputation to lose by neglect and nothing to gain by accuracy. It requires considerable inducement to make a man confine himself to hours in a gratuitous service.

Science needs improved self-registering meteorological instruments acting automatically, and recording results; requiring attention at wide intervals only. The possibility of constructing such instruments has already been fully demonstrated. It remains only to simplify and cheapen their construction.

The telegraph is an important adjunct to meteorological researches, and its aid should be called in as often as possible. In case the proposed postal telegraph is put into successful operation, central reports at Washington of meteorological conditions at quite frequent intervals, both at day and night, might easily be made from prominent points of the country. These reports, transferred by symbols to a general map, would be the most complete record of the kind ever attempted, and would be likely to throw light upon the subject, if, indeed, anything is to be expected from such observations. It is quite doubtful if any periodical law or laws exist which control atmospheric conditions. We are inclined to look upon them as results of a multiplicity of causes, in their nature variable, and, therefore, indeterminate. However, neither their indeterminateness, or the contrary, can ever be demonstrated.