

REFORM IN WEIGHTS AND MEASURES.

BY E. M. RICHARDS.

"Prove all things and hold fast to that which is good." This should be peculiarly the mission of this country; for, from the circumstances under which she sprung into existence—first as a colony and afterwards as an independent nation—she is happily freed from much of that unreasoning respect for antiquated notions and customs that presses with such *mind-crushing* power on the people of the Old World. Yet, even in this favored confederacy, there is a large portion of that conservatism which is stigmatized as "old fogyism," and to its existence must be attributed the fact that we still tolerate the abominable system (?) of weights and measures which we derive from England. We have to thank that country for much that is valuable in our "institutions," but not for the system alluded to. We should have banished such weights and measures from the Union, along with their venerable brethren "pounds, shillings and pence," and we should have adopted something more akin to the beautiful "dollar, cent and mill" currency of the country. None but those who have had practical experience in the matter can appreciate the saving of time and labor that is consequent on the use of the decimal system here, as compared with the cumbrous and awkward monetary arrangements in vogue in other countries; but we only derive a portion of the benefit that is fairly to be expected from our decimal coinage, as long as we adhere to the present objectionable weights and measures now in use throughout the country. Such a use of them in the present day is pretty much like tilling the ground with the old Norman implements of agriculture; they both belong to a bygone age, and as the latter have gradually been superseded by improved modern constructions, so their cotemporaries under consideration should only be known to the antiquary.

The measures now in common use (more or less modified) were originally taken from very imperfect standards. They came into existence when the whole world was in a state of ignorance; and, like the wretched orthography with which the English language is now afflicted, instead of being the offspring of scientific investigation, they appear to have been merely the make-shift creations of a barbarous people. Such an origin, however, was of course inevitable, for beginnings are always rude and imperfect; but it is not much to our credit that we have so long endured this state of things without endeavoring to devise a better. As illustrations of the "rule-of-thumb" method by which our weights and measures were originated, it may be stated that one Grain was, at first, actually a grain of wheat taken from the middle of the ear, well dried, then used as a weight and its name retained. Thirty-two of these were called one Pennyweight, from their weighing as much as the silver penny then in circulation. A weight equal to that of 20 of these pennyweights was designated one Ounce; the last word being derived from the Latin word *uncia*, and meaning the twelfth part, as 12 of these are equal to one Pound, just as the term Inch means also the twelfth part of one Foot. After a time, these subdivisions came to be changed somewhat, but the names have been handed down to us. The Barleycorn, formerly to be met with in long measure, had a similar origin, and the Yard was taken from the length of the arm of King Henry I., of England.

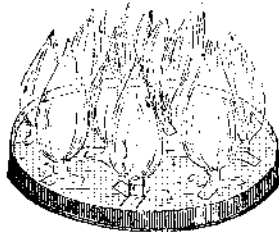
Now, if any of the readers of the SCIENTIFIC AMERICAN have sufficient time and patience to read through the tables of weights and measures published in the arithmetic books, they will be reminded of the wearying drudgery that the memorizing of such a budget of puzzling nonsense continually inflicted on them in their school-boy days, and they may perhaps feel some sympathy for the little ones who are now going through the same mill. While on this topic, it would be well to remind those that interest themselves in the progress of the young that, if the avenues to knowledge—spelling, reading, writing and arithmetic—were divested of the barbarisms that encumber them, the labors of both teachers and scholars would be far lighter. To save labor of all kinds, mental and corporeal (or, in other words, to perform the maximum of work with the minimum expenditure of force), is the great problem of our day. We recognize the correctness of the principle in some matters but not in others; for instance, it is quite right to make a given amount of coal evaporate as much water as possible, but it is quite wrong to substitute the

scientific and beautiful method of phonetic representation for the confusing and contradictory orthography that we are now compelled to use, and that will compel the rising generation to spend years in learning to read and write, where months would be sufficient, if we could only bring ourselves to discard an alphabet that is utterly unable to do the duty imposed on it, and adopt one specially designed for the task. If it is bootless to hope for the "spelling reform," however, I trust it is not so as regards the reform in weights and measures. Will the SCIENTIFIC AMERICAN continue to urge its importance until some of our progressive members of Congress take hold of the matter, investigate its claims and give it a fair hearing? I have no fears for the result, if the matter is to be decided on its merits; not allowing the question of "vested interests" to have undue influence.

[To be continued.]

A NOVEL HOT-AIR BATH.

The London *Chemist and Druggist* describes the following simple contrivance (lately introduced by the great Prices' Candle Company) for giving an extemporaneous hot-air bath. It consists of a tin dish filled with the pure cocoa stearine, and having 12 short wicks supported in tubes, as shown in the cut, which represents it as supplied, and as lighted ready for use. It is employed as



follows:—The person taking the bath, having all clothing removed, should sit upon a cane-bottomed chair, upon which a towel has been folded. A blanket, placed over the back of the head, should fall over the shoulders and the two ends should be fastened in front. Another blanket should then be brought under the chin, the two ends passing over the shoulders, so that, with the exception of the face, the entire body and the chair are completely covered in to the ground. The air-heater is then lit and placed under the chair; and in the course of five minutes, the air is raised to 100° or 110° Fah.,



producing, according to the time of taking the bath, a more or less profuse perspiration. The editor of the above journal says "We have tested the invention, and find that it acts efficiently and pleasantly; the watery vapor produced by the combustion of the stearine producing an abundant perspiration. In those cases of illness where it is desirable to produce a copious action of the skin, it is really a valuable appliance; by its employment many a chill that would naturally result in a severe cold, or even fatal inflammation, may be cut short at its very commencement."

AGRICULTURAL SCIENCE—THE CATTLE DISEASE.

The *American Agriculturist* for June contains a most satisfactory letter on this subject, by Charles W. Bathgate, of Fordham, N. Y., a very experienced farmer. He states that pleuro-pneumonia or "cattle disease" is similar in some respects to what consumption is among human beings, and that it has been more or less prevalent among cattle in various parts of the country for the past 15 years. In former years several of his cattle as well as those of his neighbors had been attacked, and they rarely recovered after the disease had become seated. The method by which they were treated was by bleeding and administering physic. During the past winter a few cases of this disease having appeared among his herd, he adopted a different mode of treatment which has been entirely successful; every animal that was attacked having been restored to perfect health. As soon as an animal appeared diseased, it was separated from the others, and placed where it had plenty of fresh air, and was sheltered from cold storms and the hot sun. The

diseased cattle were simply kept in a place where they had an abundance of pure air, that was maintained at a somewhat cool but uniform temperature. No medicine was given internally, but a first-rate diet, such as ground oats, and a very little good hay, or good pasture feed. A blister of Spanish flies applied over the region of the lungs was found to give relief as a counter-irritant. The hair was shaved off in two spots about the size of a man's hand, just back of the two fore-legs, not too high up the sides, and the blister salve was then rubbed on the skin. The sores were allowed to run for two days; then they were dressed with lard or sweet oil. This is certainly a simple and rational method of treatment, and the success which has attended it should recommend it to public favor. Mr. Bathgate believes that the breath of affected animals, either when standing in the stalls, or feeding in the pasture, may affect healthy cattle—that is, the disease is contagious under certain circumstances.

The following is the diagnosis or description of the symptoms of this disease as it exists in Massachusetts, and as represented to the Legislature by Messrs. E. F. Thayer, Veterinary surgeon, and George Botes, M.D.:—"If the animals are at pasture at the commencement of the disease, they will be found, early in the morning, separated from the herd, with arched backs, hair rough, and refusing to eat; while, as the day advances, they will join the rest, and appear to be in usual health. A slight but husky cough will be occasionally recognized; and, at times, the breathing will be increased, as if the animal had made some extra exertion; and in milch cows there will also be a diminished amount of milk. As the disease progresses, the cough becomes more frequent and husky; the respiration is humid; the pulse increased and somewhat oppressed; the appetite diminished, rumination suspended; bowels constipated; surface of the body and limbs cold; the skin rigid and almost immovable over the ribs; the animal, upon pressure upon the spine, finches, and is unable to bear pressure or percussion on the sides of the chest or costal regions (or ribs). In more advanced stages the respiration is difficult, labored, and painful. The animal frequently lies down; and when standing, the head is protruded, the mouth covered with frothy saliva, the muzzle cold, and the aspect spiritless and haggard."

MINING MACHINERY—A VOICE FROM EL DORADO.

MESSRS. EDITORS:—Your favor, with my Patent papers, came duly to hand. When they arrived I was absent in the mountains, fitting up the amalgamator at a large new mill; they use 20 of them, and get more than double the gold that they have been able to do with any other process or amalgamator. I thank you most sincerely for your kindness and promptness in obtaining the documents; and I have good reason, for I have made over \$5,000 out of it already, and could sell the right for the State for over \$40,000; but I intend that every owner of a quartz mill shall have one. I have over a 100 of them in use now, and they seem to be the favorite.

ISRAEL W. KNOX.

San Francisco, June 4, 1860.

[We publish the above to call the attention of inventors to the subject of improvements in mining machinery. We believe there is no one branch of business more susceptible of improvement in its operation than the important one of mining, and we shall expect to see great improvements in machinery for excavating, crushing, and amalgamating or dissolving the quartz. Inventors will do well to turn their attention to this subject. The patentee who writes the above letter admits he has done well with his invention.—Eds.]

A HINT TO ADVERTISERS.—A South Carolinian correspondent appends the following sensible remarks to a recent letter addressed to us:—"What's the price? This is an inquiry upon every one's tongue; yet many men, who are wise enough to be regular advertisers, strangely neglect this most important part of an advertisement. The further the consumer is from the market, the more important it is that the prices should be named; especially is it necessary for such articles as are advertised in the SCIENTIFIC AMERICAN. I believe that, as a general thing, a list of prices is more attractive than a long puff of good qualities. Thousands of orders are annually lost for want of a ready answer to the above inquiry."