inventors that worthless patents should be put out of the way. twenty eight cities and towns, and extended to twenty-eight is by assaults on what they are pleased to call "Darwin's "It is important that inventors should have the opportunity to protect their inventions if they think them worth protecting. If they do not deem them worth preserving, it is important that they should not stand in the way of other inventors, and the requirement of a small fee after the lapse of a few years will make it necessary for the owner of a patent the country been incalculable. In a memorial accompany- faith, for flaws in the doctrines themselves, and who glory to decide for himself whether he thinks it is worth preserving, and, if it is, the profits of the patent will enable him to pay it."

Judge Foote's objection to periodical fees arose from the simple fact that the Patent Office fees were already unnecessarily high. The office is now accumulating one hundred thousand dollars a year over and above its expenses; and if the city. Multiplying this particular loss by the many similies at the basis of prosperity. The gulls of such men as Keely the object is to encourage invention, the fee should be made ilar ones occurring annually in our other cotton ports, the owe their gullibility to insufficient knowledge, and the same as light as possible. He preferred the issuing of a preliminary result will be found to be startling indeed. patent, at a low fee, to run three or four years, and a completed patent on the invention, as perfected, at the end of fearful diseases which carry such destruction to life and ing the impossible. The duty of science is to establish facts. that time, should the inventor choose to apply for one.

two, and no more: 1st. Speculators have bought up and mis- on the systems of passengers, and they thus become a part and all the former. used neglected patents. 2d. Inventors have been incon- parcel of our commercial intercourse with other nations, sure- Professor Clifford's rule has the especial merit of working venienced by pre-existing patents; in other words, they have 'ly Congress-which has authority to regulate this commerce- both ways, "Much education," he says, "is required to been barred the free use of devices they wanted, or have been can, and probably will, with the earnest coöperation of local enable the learner really to estimate the evidence for the made to pay for such use, owing to the inconvenient fact that authorities, aided by the provisions of this bill, control the many-toed horse; much more is wanted for the clear comsome one had patented the thing before they thought of it. Let these arguments be granted their fullest weight. Admit that designing speculators have been able to buy up and do mischief with rights apparently abandoned by the original patentees. Admit that inventors, as well as manufacturers, on the teaching of science, reviewing Virchow's address on Finally, the writer elsewhere continues, "Teach your childhave found it unpleasant to have to pay for or let alone the the same subject, delivered at the jubilee meeting of Ger- ren to do good, and to eschew evil; if in later life they can fruits of other men's brains. Shall we, therefore, subject the man naturalists and physicians last year. Professor Vir-find hope of an eternity of such action it will make them entire class of inventors to charges not needed for the support of the Patent Office? Shall we open the door to gross injustice to worthy inventors of limited means, as shown in our issue of March 16? Shall we emasculate our patent system, as shown in our issue of April 13? In short, shall we punish the deserving many that we may forestall the wicked designs of a few?

It seems to us that the attempted justification of this Section 11, as a matter of policy even, hinges on the two assumptions that all patents not speedily developed are worthless, and that four or five years, or even ten years, are sufficient it into profitable use if it is worth using-assumptions by no means justified by the history of great inventions, as we propose to show at length hereafter.

A NATIONAL SANITARY PRECAUTION.

A sanitary measure of more than ordinary importance, not only to the Southern seaboard States but to the country at large, has recently been passed in the form of a bill to be known as the "National Quarantine Act of 1878," the object of which shall be, by means of an efficient, uniform, national system of quarantine, to prevent the introduction of contagious or infectious diseases into the United States. It is to be understood, however, that while it may assist, it shall in no wise interfere with, the present or future rules, regulations, or workings of any State or municipal boards of health. The diseases against which the provisions of this bill are more particularly designed to guard the people are truth, but be prepared to find it otherwise; only for the mo- dextrine will be distinctly defined-the iodine striking an those two scourges to humanity-Asiatic cholera and yellow fever-the ravages of which have frequently been so appalling. The hope that the measures proposed in this actvigorously carried out, and aided by the coöperation of local State officials-may in time succeed in shutting out these two diseases from the country, is encouraged by the fact that science has conclusively demonstrated that both are of foreign origin, and that there is no place within the United States where they have been naturalized.

In Asiatic cholera we have a disease caused by the access also to perceive its conflict with the Mosaic hypothesis. It and precise limits of its phosphates, iron, dextrine, starch, to the alimentary canal of a specific form of organic poison, is perfectly true that many anchoring their faith to the latter and oil; and thus, by the eye alone, we may form an approxiwhich is portable, communicable, and capable of reproducdecline, as is their undoubted right, to think on the question mate estimate of the relative proportions of these ingredients. Among other curious results of some experiments made ing itself in every body in which it obtains lodgment. It of antagonism at all, or to countenance any discussion thereupon; but on the other hand, while they can thus escape the by Dr. Jackson is the proof that the relative proportions always has its origin in Hindostan; and whenever it appears consequences of their own reasoning, it is manifestly impos- of the phosphates in grain depend on the appropriating outside of the limits of that country it is absolutely certain that is an exotic. It was in 1756 that the fact was first resible for them to check the reasoning process in others. A power of each species or variety; for, an ear of corn having cognized that the disease is a periodically returning twelveknowledge of the evolution theory must come from the been selected which had on it two different kinds, namely, yearly epidemic, connected with the twelve-yearly Hindoo teaching of any department of natural science. To teach it the Tuscarora and a variety of sweet corn, and these seeds festivals at the great temples. The prevailing direction in is likely to exhibit its antagonism to the opposing hypothe- having been split and immersed in the same copper solution, which the epidemic always advances from its birthplace is is, and to excite thought and question. The parent, firm soon gave evidence that there was more than double the to the West and North, always proceeding along the lines in his own faith, may well gravely view the alternative of amount of phosphates in the sweet than there was in the of the greatest and most rapid travel; and, at each periodi- what appears to him the dangerous knowledge on the one Tuscarora variety. Now since the kernels came from the cal recurrence, extending its limits and spreading itself over hand, or the equally dangerous ignorance on the other, same ear, and grew side by side, they obtained unequal an increase of territory. It made its first visit to the United which confronts the child, and eagerly seeks the middle amounts of phosphates from the same sap, derived from the States in 1832, starting from Quebec, where it had been in- ground in which he may reach a decision satisfactory to same soil. A crop of sweet corn will take twice as much of troduced by ten or twelve Irish emigrant ships. From this his own conscience. It is just here that Virchow's doctrine the phosphates as the other variety, and consequently will time on, its periodical returns have been pretty uniform; and 'is illusory, for it is easy to take refuge in his caution, not to sooner exhaust the soil of them. judging from the past, we should expect another outburst teach any but known facts, to brush aside the whole ques-Some interesting facts were observed, too, in the variable either during the present or next year. tion with the assertion that the evolution theory is only a proportions of phosphates in different varieties of the same In our next contest with the epidemic, our whole safety probability, and hence not to be taught; but then the same species of other grains. The fact that the smaller grains, lies in efficient quarantine and thorough disinfection. reasoning must apply to the Mosaic theory, which is equally such as wheat, oats, and barley, contain so much less than As of cholera, so we may say of yellow fever, it comes in based on other than positive fact, and in brief, it might be Indian corn would seem to explain their peculiar properties every case from without: there is no spot in the United added, to anything whatever resting on faith. as food for animals; the more highly phosphatic grain being States where it is indigenous. Its birthplaces are the West Where then is the safe middle ground? Our author be- more likely to surcharge the system of adult animals with Indies, the South American coast, and, possibly, Vera Cruz lieves in the rule, "Before teaching any doctrine wait the elements of bony matter, producing concretions of phosin Mexico. From these neighboring countries it invades, until the nature of the evidence for it can be understood;" phate of lime, like those resulting from gout. Perhaps that almost every summer, our sea-board cities, and occasionally and it seems to us that there is a world of sound sense in stiffness of the joints and lameness of the feet common in produces a desolation such as words fail to describe. This this. Nine tenths of all human antagonism is based on mis- horses fed too freely with corn may be accounted for by this disease made its first appearance in this country in 1668; and apprehension, and that between science and theology is the preponderance of the phosphates. Young animals cannot fail from that time down to 1877 it had visited us seven hundred reverse of an exception to the rule. The well-meaning to derive more osseous matter from corn than from other food.

per cent are directly traceable to foreign origin.

visits of these terrible concomitants of our foreign trade.

TEACHING SCIENCE.

unprejudiced thinkers.

Häckel devoted his discourse to the present position of the evolution theory, the evidence supporting it, and its bearing on morals, education, and mental science. Nageli followed with a discussion of the limits of natural knowmay come to know a great deal more." Lastly, Virchow scientific doctrines in the sense that they ought to be taught the parts containing phosphoric acid. ment we are of opinion that it may be true.'

Mr. Smith's reply was that it was for the interest of and forty-one times, spread its ravages to two hundred and "family" periodicals which cater to the tastes of their read-States of the Union, causing 65,311 deaths counted-besides ape theory," are ingenious in devising new evidences of the innumerable deaths of which no record was made. Of their misunderstanding of the subject, and misapplication of all these numerous appearances of the disease among us, 45 its deductions. Ignorance even more profound is equally manifested by those who mistake their own incompetency In a commercial point of view, likewise, have the losses to to comprehend the great doctrines underlying religious ing this bill, from a convention of representatives of the in their supposed stand on that summit of logical absurdi-Southern seaport towns, held at Jacksonville, it is asserted ties, atheism. It may be laid down as an axiom that it is that the losses produced by the epidemic which raged in the not that which we do not know that retards progress, but that city of Savannah in 1876 amount to \$5,800,000, or nearly which we half know; better ignorance than wrong ideas one half the present value of the whole taxable real estate of which lead to worse error. It is intelligent education which may be said of every enthusiast who formulates wild theories

Since, then, the fact is so well established that these two from his own consciousness and spends life and money seekproperty in their trail are entirely of foreign origin; that Any one may make his own deductions; no one is bound to We have recited the arguments of these gentlemen at they must cross oceans before they can obtain a lodgment on accept those of others. Facts once rightly established relength and with many repetitions, that our readers may see our shores; that they must be brought in ships, hidden in main; conclusions based on them are always shifting; and how few they really are. Boiled down, they amount to these clothing, bedding or personal luggage, or actively at work the latter can never be right unless based on a knowledge of

> prehension of the evidence for the simpler brained man." This evidence cannot be taught until a late period in education, otherwise the learner's head is confused with abstrac-Professor W. K. Clifford has recently published an essay tions, which prevent his learning properly in the future. chow's utterances have attracted marked attention, both on happier, and may make them better. But the experience of account of their forming one of a trio of reviews on the pre- centuries condemns the practice of teaching the doctrine (of sent state of science, the other contributors being Häckel immortality) to little children, so as to make it familiar as and Nageli, and also on account of their dealing with many an ill-understood conception, to weaken the power it might important questions which have long vexed the minds of have for good, and to help the perversion of it to superstitious uses."

A READY MEANS OF ESTIMATING THE VALUABLE CONSTITUENTS OF CEREALS, ETC.

By means of a very ingenious method, first discovered by ledge, pointing out the restricted nature of our senses, and Mr. A. A. Hayes, of Roxbury, and Dr. Chas. T. Jackson, in every case to develop the value of an invention and bring suggesting that, "if we will be satisfied with such kind of of Boston, it will be found that if a kernel of corn be split knowledge as we can get, we do really know something, and longitudinally, and immersed in an aqueous solution of sulphate of copper, the germ, or "chit," only, becomes colored dealt with the liberty of science in the modern state, and in green, thereby beautifully defining the limits of the phosthat portion of his admirable address, on which Professor phates by the formation of phosphate of copper. The same Clifford bases his equally admirable review, he referred to process may be applied to all seeds (except those of an oily parts of the evolution theory which are not yet established nature), tubers, roots, and stems of vegetables for defining

> dogmatically in schools. Of these he specially named two If a kernel of corn be split open, as before described, and -the spontaneous generation of living matter out of or- thrown into a solution of sulph-hydrate of ammonia, the ganic bodies, without the presence of previously living mat- "chit" will soon be changed to a dark olive color, which ter; and the descent of man from some non-human verte- is due to a change of the salts of iron in the seed to a sulbrate animal. These, he said, are problems our solution of phuret of that metal; a dark colored matter forming with which we may consider never so probable, and that the evi- the ammonia turns the vegetable coloring matter yellow, dence will shortly be forthcoming to establish the same; but and the two colors combined produce an olive. Again, by we must not teach them as known and established scientific taking split specimens of corn, or other grains, and soaking facts. We ought to say, "Do not take this for established them in a tincture of iodine, the limits of the starch and intense blue with the starch, and a deep port wine red with Professor Clifford puts this doctrine before the world in the dextrine; so that, from this test, a rich violet (being the its practical bearing by applying it at once to the broad combination of the blue and red colors) will indicate the question of what should be taught to children, and in so do-presence of both the starch and the dextrine in the grain. ing, as we have already intimated, we believe he enters upon If the oil be extracted from the transparent horny part of a subject which has been a source of incalculable doubt and the corn by means of alcohol or ether, the tincture of iodine misgivings to thousands of earnest people. Some idea of will show the presence of starch in that part of the grain, the evolution theory is now possessed by every one of ordi-associated with the gluten. By these means we may easily nary intelligence, and to have any reasonable idea of it is cause any of our cereal grains to represent to us the extent