

THE SUN CHOLERA MIXTURE.

"More than forty years ago," says the New York Journal of Commerce, "when it was found that prevention for the Asiatic cholera was easier than cure, the learned doctors of both hemispheres drew up a prescription, which was published (for working people) in the New York Sun, and took the name of 'The Sun Cholera Mixture.'" Our contemporary never lent its name to a better article. We have seen it in constant use for nearly two score years, and found it to be the best remedy for looseness of the bowels ever yet devised. It is to be commended for several reasons. It is not to be mixed with liquor, and therefore will not be used as an alcoholic beverage. Its ingredients are well known among all the common people, and it will have no prejudice to combat; each of the materials is in equal proportion to the others, and it may therefore be compounded without professional skill; and as the dose is so very small, it may be carried in a tiny phial in the waistcoat pocket, and be always at hand. It is: Tinct. opii, capsici, rhei co., menth. pip., campho.

Mix the above in equal parts; dose, ten to thirty drops. In plain terms, take equal parts tincture of opium, red pepper, rhubarb, peppermint, and camphor, and mix them for use. In case of diarrhea, take a dose of ten or twenty drops in three or four teaspoonfuls of water. No one who has this by him and takes it in time will ever have the cholera. We commend it to our Western friends, and hope that the receipt will be widely published. Even when no cholera is anticipated, it is an excellent remedy for ordinary summer complaints."

We can fully endorse the remarks of the editor of the Journal of Commerce in reference to the excellence of the above remedy. Many years ago, the cholera prevailed to an alarming extent; this remedy was then employed at the Sun office for treatment of compositors, pressmen, carriers, newsboys, or whoever happened to be attacked with the disease in the neighborhood, and the number of cases was quite large. The remedy was always used with success if administered in time, and we then formed a high opinion of its value. It is now well known among the druggists, and by most of them, kept on sale.—Scientific American.

COLLECTING WILD ANIMALS FOR THE ENGLISH MARKET.

In London there are one or two concerns which make it a business to collect wild animals, in India and in other countries, which are brought to the English metropolis and kept in stock until sold to zoological gardens and menagerie proprietors in other part of the world. From this source, Barnum and others recruit their exhibition stock. In a recent number of *Land and Water*, it is stated on the authority of a Singapore paper that: "For some time past an emissary from Mr. Jamrach, the celebrated proprietor of menageries, has been staying in Singapore. The business which brought him here is to purchase specimens of the *ferre nature* indigenous to the Malay Peninsula and surrounding countries. The result of his exertions may be seen at the yard attached to the *Hotel de la Paix*, where are assembled the animals and birds obtained up to the present time. These of themselves form a curious and very interesting collection, that has attracted a number of visitors. The gentlemen in charge most courteously exhibits the creatures to those desirous of seeing them, and the amusement to be derived from a visit more than repays the trouble involved, as will be evident from the following list: Four large male and female tigers from Malacca, two cassowaries from Macassar, three Victoria crowned pigeons from the Celebes, two orang-outangs, two black parrots, a black panther, a young female elephant, a bear from Borneo, and a pair of Borneo fire back pheasants. Of the above, the panther, which is a very snarling, ferocious customer, and the elephant were purchased from H. H. the Maharajah of Johore. Young Bruin is comical looking, with already a tendency to practical joking. A short while ago, he slipped his collar, and, getting into a house where were some young children, evinced his playful tendencies by a desire to rub noses with them. The timid owner of the house ran for the two revolvers he keeps beneath his pillow, but before he had time to uncase them, Master Bear's keeper came up, and rescued his *protege* from impending destruction. The little creature looks as harmless and innocent as a puppy. We hear that these animals, with a rhinoceros or two expected next week, will be shipped for England by the next steamer of the Ocean Steamship Company; and in addition to them, Mr. Jamrach's agent has entered into a contract with two local Nimrods (Messrs. Fernandez Brothers) to hunt and buy up, within the next six months, eight live specimens of each of the following animals, namely, rhinoceri, tigers, tigers, and black panthers, and sixteen male and female Argus pheasants. The hunters for the rhinoceri have a number of pits dug for trapping these animals; and if they fall in, that ardent naturalist, Mr. Frank Buckland, will probably ere long have the pleasure of chronicling the birth of another cockney rhinoceros."

All knowledge, to be really useful, must be gained by experience; and the next best thing to gaining this experience from personal practice is to observe and reflect on the practices of others.

A latter advertises that "Watts on the Mind" is of great importance, but declares that what's on the head is of greater.

A PERFECT VACUUM.

The ancient philosophers who defended the theory that "Nature abhors a vacuum" were greatly derided by their opponents; but modern research would seem to confirm their views. There is an anecdote that Galileo, who, as our readers know, lived in the seventeenth century, on being consulted by some engineers of Florence who found it impossible to raise water in a pump barrel higher than thirty-four feet, told them that Nature's abhorrence of a vacuum extended only to a height of thirty-four feet; and that beyond that height, it had no objection to an empty space. Galileo's pupil Torricelli first demonstrated, by actual experiment, the cause of water rising in a pump barrel from which air had been exhausted, and his theory was firmly established by the experiments of Pascal. Torricelli's experiment can be readily reproduced. Take a glass tube, more than thirty inches long, filled with mercury, from which the air has been expelled. Put the open end of this tube into a cup filled with the same liquid, and the mercury in the tube will fall until it has reached a height that can be balanced by the pressure of the atmosphere. The space in the tube above the mercury is called the "Torricellian vacuum," and is the most perfect vacuum that can be produced by mechanical means. By a perfect vacuum we mean empty space, and this space above the mercury is supposed to contain two substances: 1st. The vapor of mercury, which is there in virtue of the principle that evaporation takes place from the surface of all liquids, at all temperatures except that of absolute zero. 2nd. The subtle and elastic medium of ether, which is supposed to pervade all space. Many physicists have made experiments to determine the existence of this ether, but its effects are best observed in the motions of Encke's comet, whose periods of return to its perihelion are constantly diminishing. The undulating theory of light is also based on the existence of the ether.

It becomes interesting, then, to inquire whether a perfect vacuum can be produced in any manner. Admitting the existence of the ether, which has some tension, even though it be too small to be measured by the most delicate instrument, it will be seen that the problem cannot be solved, unless we can destroy the tension of this ether. There is a theoretical temperature, at which (if it could be produced) all vapours would lose their tension. This is the point of absolute zero, at which all heat motion ceases. This is a point which can never be reached in practice, but can readily be determined, and is marked on the thermometric scale of follows:—219° Reaumur's scale, —274° centigrade scale, —461° Fahrenheit's scale.

Before closing, we will explain how a degree of exhaustion can be reached, which is almost perfect with the exception of the ether. In the use of an ordinary air pump, at each stroke a pump full of air is removed, and the remaining air expands and fills the whole space. Hence, with the most delicate machine, there will always be some tension in the receiver, unless other means are employed. Let the pump and receiver be filled with carbonic acid instead of ordinary air, and let this be exhausted by successive strokes of the pump until the tension is very slight. Then introduce potassa or caustic lime, which will absorb the rest of the carbonic acid, leaving a perfect vacuum, as far as can be ascertained by a measuring instrument or gauge.

CURRAN'S INGENUITY.

A farmer attending a fair with a hundred pounds in his pocket, took the precaution of depositing it in the hands of the landlord of the public-house at which he stopped. Having occasion for it shortly afterwards, he resorted to mine host for the payment; but the landlord, too deep for the countryman, wondered what hundred was meant, and was quite sure no such sum had ever been lodged in his hands by the astonished rustic. After ineffectual appeals to the recollection, and finally to the honor of Randolph, the farmer applied to Curran for advice.

"Have patience, my friend," said the counsel; "speak to the landlord privately, and tell him you must have left the money with some one else. Take a friend with you, and lodge with him another hundred pounds, in the presence of your friend, and then come to me."

We must imagine, and not commit to paper, the vociferations of the honest dupe at such advice; however, moved by the rhetoric or authority of the worthy counsel, he followed it, and returned to his legal friend.

"And now, sir, I don't see how I am to be any better for this, if I get my second hundred again. And now what is to be done?"

"Go and ask him for it when he is alone," said Curran.

"Ay, sir, but asking for it won't do—I'm afraid without my witness at any rate," said the countryman.

"Never mind, take my advice," said the counsel; "do as I bid you, and then return to me."

The farmer returned with his hundred, glad at any rate to find that safe again in his possession.

"I don't see as I am much better off."

"Well," said the counsel, "now take your friend with you, ask the landlord for the hundred pounds your friend saw you leave with him."

KISSING THE COOK.

A British jury does not consider it an act of impropriety for a schoolmaster to kiss a cook if the cook doesn't object. A Mr. Royton was recently engaged in a school in one of the southern counties of England, at a salary of \$300 a year, and was discharged without notice or any just reasonable cause, and he sought to recover damages in one of the civil courts. It was alleged in defence that one of the causes of dismissal was that Mr. Royton had kissed the cook. The plaintiff, however, denied having positively kissed the cook, but admitted that he tried to do so in the pantry before the other servants. There was no secret about it; but his employer said "he did not think a man of good character would try to kiss a cook," and thereupon he dismissed the poor pedagogog. The jury, however, saw not in the kissing of a cook the evidence of bad character, and with British gallantry gave the defendant a verdict, saying there was nothing to justify his dismissal. In fact, they rather looked with extra feeling on the dismissed tutor, for they not only awarded him his three months' salary, in lieu of notice, but also \$15 he had given to an agent to obtain another situation.

STEEL LOCOMOTIVE BOILER.

Engineering of recent date contains the following items regarding a new steel locomotive boiler, made at the Crewe works of the London and North-western Railway, from the designs of Mr. F. W. Webb. It is of the ordinary type, and the barrel is made telescopic, the mean inside diameter being 3 feet 11 inches and the plates 3/8 inch thick. The most noticeable peculiarity is the system of fire box construction, which consists of forming the front, back, and sides on one plate. A portion is cut out of the front and the plate is flanged back to receive the tube plate. The ends of the plate are made in a jump joint under the tube plate and secured by a welt on the outside. The plate forming the top of the fire box is flanged down on three sides, and is riveted to the side and back of the box and to the tube plate. In order to insure a good joint around the tube plate, a copper caulking strip is introduced between the flanges, so that the joint can at any time be repaired from the inside of the fire box. A 5-16 inch plate is used from the box, and a strong plate, 3/4 inch thick, for the tubes. The dome is formed of one piece flanged at the bottom. The cover is made from a flat steel plate 5/8 inch thick, and is stamped under a steam hammer into the required shape, the stamping being done by two blows of the hammer. There are 178 tubes of steel, 1 1/4 inches outside diameter. The tensile strength of the plates employed does not exceed 32 tons to the square inch, and they will stretch 25 per cent before breaking. The boiler was subject to a test, by hydraulic pressure, of 200 lbs. per square inch, before leaving the works.

LOCOMOTIVE STEAM ENGINE.

"I love," says Elihu Burrit, "to see one of these huge creatures, with sinews of brass and muscles of iron, strut forth from his smoky stable, and saluting the long train of cars with a dozen sonorous puffs from his iron nostrils, fall back gently into his harness. There he stands clamping and foaming upon the iron track, his great heart a furnace of burning coals; his lymphatic blood in his boiling veins; the strength of a thousand horses is nerving his sinews; he pants to be gone. He would drag St. Peter's across the desert of Sahara, if he could be fairly hitched to it; but there is a little sober-eyed, tobacco-chewing man in the saddle, who holds him in with one finger, and can take away his breath in a moment, should he grow restive or vicious. I am always deeply interested in this man, for, begimred as he may be by machinery, he is the physical mind of that huge steam-horse."

INVENTION—THE MOTHER OF NECESSITY.

We have always labored under the impression that the only individuals who ever reversed the old saw: "Necessity is the mother of invention," and made it read "Invention is the mother of necessity" were those infatuated geniuses who too often squander their worldly goods in fruitless efforts to carry out impracticable schemes. We have been mistaken, for we have encountered one of those instances in which the inventor, after having worked out his machine, to his satisfaction, in his brain, discovered himself placed by his invention in dire necessity for material for its physical embodiment. He was not a landsman, afflicted with chronic impetuosity, but a sailor, and an officer of a cruising whaler. His device, which, by the way, is quite an ingenious machine for cutting up blubber as it comes from the animal, necessitated the employment of many cog wheels and other gear, for which, ordinarily, metal would be employed. But at sea one cannot carry a foundry, and besides, no iron or steel was to be had; and even if it were, no tools were probably at hand to get it in shape. Finally, after sundry trials, the huge bones of the whale were thought of, and from these, harder and stronger than ivory, by the aid of a common lathe and a few chisels, a number of cog and bevel wheels, rods, etc., were made, which, for accuracy and neatness of execution, will compare favorably with the work of many professional model makers.

The model, thus ingeniously constructed, was brought to this office a few days since,

and letters patent applied for on the device. It affords fresh evidence of that persevering energy which is inherent to all inventors, and, besides, proves that a mind capable of conceiving a useful and valuable idea is never at a loss to devise means, even from the most slender and least promising of resources, for carrying the same into execution.—Scientific American.

THE LARGEST RAILROAD SHOPS IN THE WORLD.

Located in Cheshire, one of the midland counties of England, and situated on the London and North Western Railway, some five-sixths of the distance between the metropolis and Liverpool, is Crewe, a small and insignificant town by itself, but a city of no mean importance when considered in connection with the vast works which it contains. The establishment which supports, and, in fact, forms the town, the population and extent of which is about half that of Worcester Mass., was originally laid down by George and Robert Stephenson, and is known as the Crewe Works, or as it would be termed in this country, the shops, of the London and North Western Railway. Here no less than six thousand hands are employed, building or rebuilding the two thousand locomotives used upon this longest of English railways, or working upon the two hundred and twenty engines which, it is calculated, are always at the works for repairs.

A correspondent of the Boston Journal of Commerce has recently visited this great factory, and, from the graphic letters which he writes, we extract the following interesting particulars: He says that a most extraordinary variety of especial tools is employed, among others several testing machines for trying the strength of material used. Samples of every variety of material, and especially the boiler iron and steel, are submitted to these machines. For the proving of the iron for axles, there was a little machine in which a sample was submitted to a rapid series of torsional strains till it broke, the number of these, registered by a counter, being an index of the character of the iron. As an illustration of the attention to the smaller details of expense, a cleaning machine was running in the brass shop consisting of an endless belt studded with small magnets, which, passing through the mass of filings in an inclined trough, thoroughly cleaned them of all fragments of iron. A large number of the milling machines were in use for smaller work, especially such as finishing the heads of nuts and bolts, and many small bench shaping and slotting machines were running as many as 160 strokes per minute; engaged in a similar work, by using cheap labor (boys of twelve), the latter could compete with the former. Among other larger machines was one for grinding large plane surfaces, such as base and frame plates and side plates of tenders, instead of planing them, the work moving in a trough containing water, and the whole arrangement being quite on the plan of a Daniell's planer. Much smaller flat work was finished by grinding in machines arranged to produce a level surface by self-operating attachments.

Perhaps the most remarkable thing in this part of the works was the huge lathe room, more than two hundred feet long, and filled with a double row of driving wheel lathes. Many of these were of eight feet swing, and of the heaviest description, carrying four cutters at once. A remarkable machine, near these, was a milling tool for milling out the inide cranks. All the engines have inside connections, the axles are forged solid and milled, instead of being turned out. The cutter of this machine was four feet in diameter and five inches fall. There were here many other peculiar tools, such as a machine for milling two key ways, exactly at right angles, at once, in the two ends of a locomotive axle. Also a wheel rimming machine, and another for slotting out in a proper curve form, the inside rims of locomotive wheels between the spokes.

A new process for making steel tires is here employed. The steel is cast in the form of truncated cones, the smaller end to form the outside of the tire. While still hot it is introduced to the horizontal steam hammers. These consist of a couple of enormous masses of iron, each running on a little track, and moved back and forth, by means of piston and rod, by a large steam cylinder behind each, the steam valves of each of which cylinders are operated by a common lever. By passing through two sets of these hammers, the steel is thoroughly worked up, and leaves them in the form of a thick disc. Carried from these, it passes to an upright hammer, with a sharp conical end to the striking part. This soon forces a hole through the disc, which, being turned round and round, and over and over, becomes a thick ring. Again heated, it goes to another hammer. This hammer has a very heavy anvil, with a peculiar slope to one side, from which projects a stiff horn. Upon this horn the ring is hung. The face of the striking part is formed to the slope of the rim and flange of the wheel, and as the workmen manipulate the wheel under its blows, slipping one portion another to receive the stroke, the whole tire gradually expands to the requisite diameter, and is ready to be turned on the inside and driven on to its wheel.

These details were noticed in but a small portion of the vast factory, but serve to give an idea of the completeness and magnitude of its construction and fittings.

Grains of Gold.

Ideas generate ideas, like a potato, which, cut in pieces, reproduces itself in multiplied forms.

"When I am a man," is the poetry of childhood; "when I was young," is the poetry of old age.

A wife, full of truth, innocence, and love, is the prettiest flower a man can wear next to his heart.

Nobody has made anything by hearing of rules, or laying them up in his memory; practice must settle the habit of doing.—Locke.

Education will not create mind; but will elicit and bring it out. It will do more—it will refine, correct, enlarge, and invigorate it.

To succeed in the world, it is much more necessary to possess the penetration to discover who is a fool, than to discover who is a clever man.

Patience is very good, but perseverance is much better; while the former stands as a stoic under difficulties, the latter whips them out of the ring.

Sincerity is like travelling on a plain beaten road, which commonly brings a man sooner to his journey's end than by-ways, in which men often lose themselves.

Slanderers are, at all events, economical, for they make a little go a great way, and rarely open their mouths except at the expense of other people.

The young should be spared from sorrow as much as possible. Never dim the sunshine of hope and joy, so as to leave them without even the memory of its glory.

People who are always talking sentiment have usually no very deep feelings. The less water you have in your kettle, the sooner it begins to make a noise and vapor.

The greatest pleasure of life is love; the greatest treasure, contentment; the greatest possession health; the greatest ease, sleep; and the best medicine, a true friend.

Truth is a strong citadel. However often besieged, it remains invulnerably secure. The arrows of falsehood may often assail it; but unarméd, and unslaken, it stands out in serene majesty, immutable as its Author, imperishable as eternity.

INFERIORS.—A term which we are ready to apply to those beneath us in station, without considering whether it be applicable in any other sense. Many of them may be our equals, and others may be our nominal inferiors, to whom we are by no means equal.

A man who had, by his own unaided exertions, become rich, was asked by his friend the secret of his success. "I accumulated," said he, "about one half of my property by attending to my own business, and the other half by letting other people's entirely alone."

Instruct your son well, as others instruct him ill. No child goes altogether untaught. Send him to the school of wisdom, or he will go himself to the rival academy, kept by the lady with the cap and bells. There is always teaching going on of some sort, just as in the fields vegetation is never idle.

"Books," said Channing, in a lecture to workmen—"books are the true levellers, giving to all who will faithfully use them the society and spiritual presence of the best and greatest of our race; so that an individual may be excluded from what is called good society, and yet not pine for want of intellectual companions."

One of the hours each day wasted on trifles or indolence, saved and daily devoted to improvement, is enough to make an ignorant man wise in ten years—to provide the luxury of intelligence to a mind torpid from lack of thought—to brighten up and strengthen faculties perishing with rust—to make life a fruitful field, and death a harvest of glorious deeds.

A man's first care should be to avoid the reproaches of his own heart; his next, to escape the censures of the world. If the last interferes with the former, it ought to be certainly neglected; but otherwise there cannot be a greater satisfaction to an honest mind than to see those approbations which it gives itself seconded by the applause of the public. A man is more sure of his conduct, when the verdict which he passes on his own behaviour is thus warranted and confirmed by the opinion of all that know him.—Addison.

A good woman never grows old. Years may pass over her head, but, if benevolence and virtue dwell in her heart, she is as cheerful as when the spring of life first opened to her view. When we look upon a good woman, we never think of her age; she looks as charming as when the rose of youth first bloomed upon her cheek. That rose has not faded yet; it will never fade. In her neighborhood, she is the friend and benefactor. Who does not respect and love the woman who has passed her days in acts of kindness and mercy—who has been the friend of man and God—whose whole life has been a scene of kindness and love, and a devotion to truth? We repent, such a woman can never grow old. She will always be fresh and buoyant in spirits, and active in humble deeds of mercy and benevolence. If the young lady desires to retain the bloom and beauty of youth, let her not yield to the sway of fashion and folly; let her love truth and virtue; and to the close of life she will retain those feelings which now make life appear a garden of sweets—ever fresh and ever new.