Useful Information.

A Day's Work.

The amount of work that a man can do in a day has been the subject of no little investigation and discussion. Some writers on physiology have unquestionably set the average too high, while others have erred in the opposite direction. Among the estimates given by the best authorities, however, there is no very marked discrepancy, and the question may now be considered as quite accurately answered.

In comparing different kinds of muscular labor, it is necessary to fix upon some convenient *unit* to which they may all be referred. The force required to raise one pound one foot, or a "foot-pound," as it is concisely expressed, is the "unit of work" commonly employed in England and this country. In France, the lifting of one kilogramme (about 2.2 pounds) to the hight of one metre (39.37 inches) is taken as the unit. This "kilogrammetre," as it is called, is equivalent to 7.216 foot-pounds. The "foot-ton," which is often mentioned in connection with estimates of this kind, is the force lifting a ton of 2,240 pounds one foot, or one pound 2,240 feet, which is, of course, virtually the same thing.

Now, if a person unfamiliar with these calculations were asked how many foot-tons he considered a fair day's work for an able-bodied man, he would not, probably, guess very wide of the mark. It has been stated in books as high as 1,000 foot-tons, but this is at least twice too much, 500 foot-tons being in reality a daily "stint" which very few laborers could keep up from week to week. Four hundred foot-tons is a hard day's work, and 300 an average day's work for a strong man in good health. Dr. Parkes, who has given much attention to this subject, says that the hardest day's work of twelve hours that he has personally known a man to do, was in the case of a workman in a copper-rolling mill, who stated that he occasionally raised a weight of 90 pounds to a hight of 18 inches 12,000 times a day. Assuming this to be correct, the work done would be equivalent to 723 foot-tons. The same man's ordinary day's work, which he considered extremely hard, was raising a weight of 124 pounds 16 inches 5,000 or 6,000 times in a day. Taking the larger number, this would be 442.8 foot-tons.

Coulomb reckons a day's work at pile-driving as 312 foot-tons; Lamande finds it, in another case, to be 352 foot-tons. The work done by porters was calculated by the former authority, in a variety of instances, to be from 303 to 381 foot-tons. Dr. Parkes has known an Indian coolie to travel 30 miles, with an ascent of 5,000 feet, in three days, carrying a load of 80 pounds; which would be at the rate of 500 foot-tons a day.

The work done in walking is greater than many persons would suppose. Rev. Mr. Haughton, to whose elaborate investigations in animal mechanics we have more than once referred in the *Journal*, has shown that walking on a level surface is equivalent to raising one-twentieth part of the weight of the body through the distance walked. In going up-hill a man, of course, raises his whole weight through the hight ascended. If a man weighs 150 pounds with his clothes, the work done in walking a level mile is 17.67 foot-tons; for 10 such miles, 176.7 foot-tons; for 20 miles, 353.4 foot-tons. One can readily calculate what the labor would be for a man of different weight or for one carrying a given load. It will be seen that a walk of 20 miles on a level road is a good day's work, and there are comparatively few persons who can keep up such a "tramp" for many days in succession. For a soldier, carrying 60 pounds, a day's march of from 10 to 12 miles is fair average work, being from 247.5 to 297 foot-tons, even if the ground is level.

In these estimates it is assumed that the work is done in the easiest manner for the person concerned, especially as regards the time taken for it. If the time is shortened beyond certain limits, the work becomes more exhausting, on account of the greater strain on the heart and lungs. In a boat-race, rowing at the rate of a mile in seven minutes, the work done in that time is between 18 and 19 foot-tons. This is apparently not a great exertion, but it is very severe for the time, from its effect on the circulatory system.

This reference to the strain upon heart and lungs reminds us to say, that in these remarks upon muscular labor, we have dealt solely with "external work," as it is termed, in distinction from "internal work," or that done by the muscles concerned in respiration, circulation, digestion, and other vital processes. We have before given some facts and figures in regard to the work done by the human heart. The sum total of the mechanical labor performed within the body averages, according to careful estimates, about 260 foot-tons every 24 hours. To this part of the work accomplished by the wonderful machinery of our human organism, and also to the sources whence its motive power is derived—the fuel that feeds its furnaces and keeps up the steam in its boilers—we shall recur at some future time.—*Boston Journal of Chemistry.*

To Dissolve Glue.—It is said that if one part of sugar is dissolved in three parts of water, and digested with one-fourth part of calcic hydrate, the resulting liquid will readily dissolve glue warm, and the solution will remain fluid on cooling, without having lost any of its adhesive properties.

Pneumatic Call Bells.—A French inventor has lately brought out a novelty in bells for houses. A series of small leaden tubes proceed from the kitchen to each room, one to the sitting-room, one to the drawing-room, and one to each bed-room. Attached to these tubes in each room are a few feet of India-rubber tubing, suited in color to the paper of the room. To the end of the tube a syringe is fixed air-tight, and this hangs similar to an ordinary bell-rope. In the kitchen is a case containing the bell, which serves for all the rooms, the distinction being effected by tickets with the names of their respective rooms printed on them, held down by springs. They work in this manner: the India-rubber syringe is pressed, and the air by this means is forced through the tube into a corresponding India-rubber syringe or ball in the case in the kitchen. This, of course, expands, and forces up a small rod, which moves a cog-wheel and rings the bell, and at the same time sets free the spring which retains the ticket of the room in which the bell is rung; this starts up into a square in the glass door, and at once indicates in a simple manner the room. These ingenious bells act as effectively as electric bells, which they resemble exceedingly in sound, without their trouble and expense, and not getting out of order like our wire bells and cranks.—*Iron Age.*

New Use for Infusorial Silica.—Infusorial silica has been strongly recommended for surrounding ice, ale, and beer cellars, fire-proof safes, steam boilers, and powder magazines. A firm in Germany have recently made a series of experiments on a large scale, and they assert that the use of this earth has reduced the melting of ice in a cellar during the summer from 23,500 to 10,000 pounds. This material is not inflammable, and is not in the least affected by the hottest fire, and it prevents the entrance of rats and mice.—*Scientific American*

Hollow Walls.

It is well known that walls of extra thickness, made of brick, are very apt to be weak and fall to decay in a comparatively short space of time. This fact may be accounted for at once, when one remembers that mortar requires the free action of the atmosphere, without which it will not harden. It is true that the brick will absorb the moisture, but the lime and sand will become disintegrated, and crumble away without effecting the purpose required, namely, that of forming a binding joint. Walls three feet thick have been taken down after twenty years' standing, and found to be little more than rubbish at the core. Such brickwork is sure to be weak; for the damp incased in it will work ruin most effectually, both inwardly and outwardly.

In the construction of fortifications, this existence of damp at the core of the wall is avoided by using water-lime cement, instead of quicklime, as the former will indurate under the very influence that proves an insuperable obstacle to the hardening of the latter. Besides, the courses of brick masonry in fortifications are raised so slowly that it gives ample time for the setting of each course before the succeeding one excludes it from the action of the atmosphere.

To give an opportunity to ordinary walls of dwellings, etc., to receive the full benefit of the air on the mortar, a method of hollow-walling has been introduced in building, and this is accomplished either by a novel article of brick or block, cast with an elongated aperture within itself, or it is brought about by so using ordinary bricks as to leave a hollow space varying from two to four inches in the rearing of the wall.

The great difficulty to be encountered in the formation of hollow walls is found in the fact that there must be binders, or bricks laid crosswise, at every fourth or fifth course. Such bricks serve as ducts to convey moisture from outside to inside. And, as there must necessarily be a great number of these, it is very evident that the transit of damp is not wholly prevented by the system of hollow walling. It is to avoid this mischievous intervention of the binders that a patent mode of hollow-walling has been introduced in the West, by a builder of much experience, at San José, California. His plan is to substitute for brick binders, lath laid diagonally; reversing the slope every second course, or alternately.

These ties are simply laths such as are used in plastering. They are four feet long, and are cut three times, so as to give four ties of a foot in length to each lath. But for twelve-inch walls it is proposed to make the lath ties sixteen inches. They are scattered along every fourth or fifth course, throughout the wall; and spaced about ten inches apart on the wall.

This is certainly a very economic way of treating this matter, and the binding principle must surely be preserved by it. But in the event of fire, how inevitably would the devouring element seize upon the very vitals of its prey, and, in the destruction of these laths, most effectually disintegrate the wall.

However, the plan is nevertheless a good one, and the substitution of hoop-iron would guard against the fearful eventuality alluded to in the use of laths.

As to any sanitary benefit being derived from the use of hollow walls, their efficiency is doubtful; indeed, one may incline to the opinion that these same intervals or spaces in walls are dark chambers for the generation of poisonous gases, which are apt to find an entrance through the porous brick into the dwelling apartments and bed-chambers of houses, superinduced by the attractive atmosphere there. To be sure, this objection might be obviated by ventilating apertures. But these, again, admit the external cold, and permit the escape of the internal heat.—*American Homestead.*

Fire-Proof Construction.

As a precaution which may be used in lessening the tendency to catch fire in buildings which are not in their nature actually non-inflammable, or intended to be so, it is very desirable, whenever timbers are exposed, to cover them with a coating of common whitewash, which acts doubly as a preservative, both by excluding air from the timber, and from its non-conducting power. This will, of course, be of no use when a fire has once been kindled and got to a head; but, in case of fire, seconds of delay in kindling it or communicating it are of vital importance. In many a workshop or factory, if the floor and roof timbers were kept well whitewashed, the risk would be much diminished. Special precaution should be taken about the floors and fireplaces: there is frequently great carelessness in trimming joists and fixing ground for skirting, etc. It would be very desirable always to skirt chimney-breasts in cement or plaster, and to fill in the place under the hearthstone with cement concrete. Ceilings, again, should be formed with much stronger laths and better nailed; and if about 2 in. of rough mortar, the coarser the better, were laid over the laths between the joists, it would be found very difficult to set fire to them—they would resist for a considerable time even a fierce fire underneath. Again, all rooms should have a good hight, otherwise the constant operation of gas-lights is to prepare the timber of the ceilings for combustion on the most rapid scale, if the opportunity be once given. As regards all stoves, great attention should be paid to their being so arranged as to avoid all risk arising from the heat of the stove itself, its flue-pipe, or its ash-pan; no stove should be considered safe, the flue-pipe of which cannot be heated to redness with perfect safety to the building. But in all ordinary buildings the most important point to attend to is the staircase; it should be, if circumstances will admit, closed at top or bottom, cut off from the passages leading into the rooms, and in the construction of it, it is very desirable to lath the soffits with extra strong laths, and fill in from the upper side with concrete, so that all the space at the back of the riser and under the tread shall be a solid mass of non-inflammable material. Such a staircase would probably stand and bear the weight of persons ascending and descending under circumstances where an iron or stone staircase would be destroyed or useless.—*Builder.*

Coloring Materials by which Gems are Imitated.—The basis of these imitations is a soft white lead glass of highly refracting power, called strass. For imitating topas, glass of antimony, 37 parts, and purple of Cassius, 1 part is added to 840 parts of strass, or 1 part of crocus martis to 100 of strass. For ruby, the above is fused for 30 hours, or oxide of manganese is used. For emerald, add 250 parts of strass, 2 of verdigris and half a part of crocus martis. For sapphire, add 1 part of oxide of cobalt. In all cases a careful fusing in furnace or blow-pipe is required of the substances before hand, well powdered and mixed; but above all, a considerable degree of experience, obtained by continued practice.—*Manufacturer and Builder.*

There is probably nothing better and cleaner than black lead and tallow as a lubricant for friction wheels or brakes.

San Bernardino County.

San Bernardino is cut off from the sea by a small intervening slip of Los Angeles county; population, 9,000. The San Bernardino range of mountains divides the county into two parts, differing from each other in topography, climate and nature of soil. The eastern part lies within the Great Basin, or valley of the Colorado, and may be said to be worthless, agriculturally. The western part extends from the San Bernardino range to the Los Angeles line, including within its boundaries the beautiful, fertile valley of San Bernardino. The western slope of the county contains an area of about 2,000 square miles, nearly all of which is highly fertile. The San Bernardino is divided from the San Gabriel range by the Cajon pass, and from the San Gorgonio pass. Each of these passes opens on the desert. East of the San Bernardino range the vast area of country extending to the Colorado is a barren waste, a great part uninhabited, and almost uninhabitable. The landscape is diversified, indeed, presenting the most varied scenic contrasts. In the country are great mountains, vast forests, extensive table-lands, beautiful and fertile valleys, teeming with semi-tropical productions, dreary alkali flats, sparkling streams, or, rather, small rivers, spreading beauty and fertility in their flowing paths, and a vast and sterile desert. The bleak, bare and waterless desert is offset by the most fertile, blooming and beautiful valley in California; the frigid vegetable and the orange-tree grow side by side. The productions of both the semi-tropical and temperate regions of the earth are indigenous to this soil; the precious as well as the useful metals abound throughout the vast mountain-amphitheater, which almost encloses our far-famed valley; and, to carry the parallel still further, we have two distinct climates; for, during the winter season in this valley, summer and sunshine reign on and along the edge of the desert. It is a country abounding in most surprising natural contrasts.—*San Bernardino Guardian.*

A Destructive Engine of War.—The recent trial of the Taylor battery gun, upon which the Colt company, of Hartford, has, for some months, been engaged, shows it to be the most formidable weapon of war that has yet been invented. Its barrels are twenty-four in number, and are arranged in two concentric circles. They are also regulated so as to radiate their fire, covering a horizontal line of twenty-two feet, at a distance of five hundred yards. The gun fires with great rapidity, by fusilade or by volley, at the pleasure of the operator, while the cartridges are fed into the barrel from suitable charging cases, which are introduced into the interior of the breech cylinders. The results at the late trial were astonishing. In firing a single barrel, at a distance of five hundred yards, bullets were repeatedly sent into an eight-inch bull's-eye. In firing the fusilade, the twenty-four balls were distributed on a horizontal surface, twenty-two feet long, at a distance of a foot apart, and firing by the battery, the same results were accomplished. The rapidity of the fire was remarkable, being at the rate of seven hundred balls per minute. The terrible effectiveness of this weapon in battle, and the utter powerlessness of charging columns in the face of a fire, can be seen by the fact that every second sweeps over twenty feet in length, and mows men down at the rate of a regiment a minute. The inventor of this remarkable weapon is Colonel James P. Taylor, of Knoxville, Tenn. His invention was conceived in 1870, and patented in July, 1871, and it has since been improved until its present extreme simplicity, have been reached. The manufacture of the gun is to be rapidly pushed and active measures taken for its introduction among foreign governments.—*Am. Manufacturer.*

To Deaden the Sound of an Anvil.—The *Building News* recently remarked upon this subject: "If a chain about one foot long, formed of a few large links, is suspended to the small end of an anvil, it will destroy, we are told, that sharp thrilling noise produced by striking on it with a hammer; the vibrations of the hammer are extended to the chain, which absorbs them, without producing any sound. This is worth trying by any one who has a blacksmith or a coppersmith for a neighbor." [We presume it is intended to suggest that the smith should be induced to use the chain, and not the neighbor; but with reference to this application to the beak of an anvil, we may tell our contemporary that, were a chain suspended in that way, the labor of the mechanic would be painfully increased, for the hammer would fall heavily and flat, without that spring or rebound that the active vibration gives to the hammer, and the brawny arm of the smith would be called upon to lift a dead weight every time he struck the iron, instead of having only to catch up the rebounding tool and direct its next blow. For our part, we think there is a very musical sound in the anvil, and certainly can not recommend the use of the chain.—*Iron Monger.*]

Pulmonic Candles.—Under this name, Field & Co., the great English chandlers, have introduced candles containing in their substance some of those gum-resins and balsams, especially benzoin and storax, which from time immemorial have proved useful in chronic bronchitis, and allied maladies. When burnt, the candles yield, by the combustion of these drugs, a pleasing fragrance, and at the same time give a good light. Candles are not much used in this country, but we should not be surprised if some enterprising Yankee adopted the idea to the medication of kerosene; which may thus be compelled to make partial amends for the slaughter it has caused. The aromatic odor alone would be an improvement of the unfragrant combustibles.—*Jour. of Chem.*

New Photo-Process.—A recent improvement, announced by Mr. Burgess, a photographic artist, of Peckham, England, consists in sensitizing gelatin by means of bromide of silver. The mixture is applied warm to the glass plate, and the picture may be be taken with the plate either wet or dry. The time of exposure is the same as for the ordinary wet collodion plates. The alkaline-pyro developer is used, the picture making its appearance rapidly, with any required degree of intensity. The new process promises to compete sharply with the ordinary collodion process.

Glycerine in Astringent Infusions.—Glycerine has been successfully used for rendering astringent infusions bright. One part of glycerine to nine of infusion of roses is said to be sufficient. Mixtures of infusion of roses and sulphate of quinia, in which a precipitate of tannate of quinia is produced, may be rendered transparent by a similar addition, as also gargles composed of tannic acid and infusion of roses.

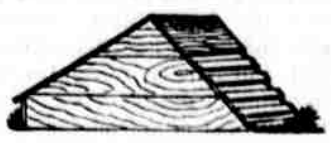
An excellent cement, it is said, may be made from rice flour. It is only necessary to mix the rice flour intimately with cold water and gently simmer it over a fire, when it readily forms a delicate and durable cement. When made of the consistency of plaster, clay models, busts, bas reliefs, etc., may be formed from it.

The combustion of one pound of coal in one minute is productive of a force equal to the work of three hundred horses during the same time.

Poultry Yard.

Ideas in Chicken Raising.

A plan which many of our readers have doubtless tried to advantage, is that of raising several families of chickens with one hen, thus allowing the other hens their liberty; and, as it is claimed, hastening the return of laying. We cannot do better than give the whole system, as detailed by a correspondent of the New York *Tribune*. His plan is to set six or seven hens upon 100 eggs, and while the setting is going on construct a coop as follows: Make the sides according to diagram, one yard long at base and two feet high; nail the back board on, which should be one yard in length; put on the roof of tongued and grooved stuff; nail on the slats in front, leaving room at the top for a board eight or nine inches wide, to be attached by leather hinges, and to serve as door, and your coop is done. As soon as the eggs begin to hatch, visit the nests frequently and remove the loose shells, that they may not "cap" eggs from which the chickens have not escaped, and as soon as all are out, put the chickens and the most motherly hen in the coop described, with



A Chicken Boarding House.

a yard of old carpet under them. At night, throw another piece of carpet or blanket over the front of the coop. When the carpet becomes soiled, or gets wet, remove it; cleanse and hang up to dry.

The advantages claimed for the plan are, briefly: The other five hens, after a few days confinement, will begin laying. The chickens, being all with one hen, there will be no fighting among the different broods. The one hen and 100 chickens will consume less food than six hens with the same brood. The back board of the coop prevents the hen from trampling her chickens, as she would do if the roof was shelving to the ground. So large a number of chickens together maintain a high degree of temperature, and they keep circulating to and fro underneath the hen, and are fully as comfortable as they would be with a number of hens. For the first week feed with Indian meal wet with water; afterward use cracked corn. Give an abundance of pure fresh water. After the chickens are a few days old let them run abroad with the hen when the weather is pleasant, fastening them in the coop at night. The writer referred to concludes by saying that he has had a number of years' experience with this method, and commends it to all who wish to know the best way.

Those who keep fine poultry, and desire to note the effect of varied crossings of breeds, should always keep a poultry-book, in which the birds are registered by number. This is

Poultry Marker.

distinct from the account-book, which every poultry-raiser has, or should have; but, for convenience the reference list, and the accounts may be kept in a single blank-book.

The device for marking poultry which we illustrate, has been used for some time by an English breeder, Mr. William Saville, with entire satisfaction. He says: "It can be put on or taken off with the greatest ease by using two pairs of ordinary round-pointed wire pliers. It is made by letting fall one or more drops of melted solder on to a piece of stoutish copper wire. The solder is then stamped with a number, by means of a die, and a corresponding number entered in the poultry-book. The size and number of the drops of solder, and likewise the thickness of the copper wire, can be varied at pleasure to suit the size of the chicken or fowl, and any ironmonger will furnish a set of number-dies of the requisite size at a trifling cost. I may add that I prefer two drops of solder in case of the accidental defacing or loss of one. I do not find my marker incommodes the birds in the least, nor does it chafe or injure the feathering or color of the legs of Brahmas or Cochins."

Preparing Poultry for Market.

A New York firm of commission merchants give the following directions for preparing poultry for market: Secure plump, well-fatted birds. Bleed them in the throat. Scald enough to make the feathers come off easily. Pick both feathers and pin-feathers all off nicely, taking great care not to bruise or break the skin in any way. If one or two in the lot should accidentally get bruised or have the skin broken, sell, or use at home, as they will hurt the sale of the whole lot. Leave all of the entrails in, and heads and feet on. After they are dressed, hang them in a cool place, where they will dry and get stiff before packing. Pack in boxes or barrels, in nice, clean rye straw; if this cannot be obtained, dry oat straw may be used. Be sure and pack solid, so they will not bruise in transit. Pack with breast down. Poultry prepared in this way always find a ready market, while poor, half-dressed, sweaty, (caused by packing while warm), and bruised lots, will not sell at any time.

Many farmers make a practice of feeding their half-starved fowls all they will eat just before killing, and send them to market with full crops, in order to get the price of poultry for corn. In this they make a great mistake; the crop being swollen to an unusual size, turns black after being packed a while, and not only shows clearly the dishonest intentions of the packer, but injures the sale of the fowls a great deal more than is gained in weight. Feed meal only for at least two days before killing.

Remember that it is the appearance of goods that sells them. Nice, large, fat, plump, white turkeys, ducks, chickens or geese, always bring outside prices.

When is the best time to ship? This question is often asked. We answer: any time after cool weather commences. But if sent for the holidays, have them here at least three days before Thanksgiving, Christmas, or New Year's. Keep the largest turkeys for New Year's.

A Varied Diet for Fowls.—There are no animals more omniverous than fowls; fish, flesh, birds and grain, being devoured by them with equal relish. We say equal, though they commonly pounce upon meat with greater avidity than upon grain, this is generally because it affords a rarity, and a flock kept for a while, almost entirely on animal food, will show the same greed for a few handfuls of corn. The fondness for variety shown by fowls is as significant of real needs as we have found it to be in ourselves. In purveying for them, a judicious variety, selected from the three general divisions—*fresh vegetables, grain* and *animal food*—is at all seasons absolutely necessary.

Good Health.

Reading to the Sick.

Florence Nightengale gives the following judicious advice on this subject: With regard to reading aloud in a sick room, my experience is that when the sick are too ill to read themselves, they can seldom bear to be read to. Children, eye-patients, and uneducated persons are exceptions, or where there is any mechanical difficulty in reading. People who like to be read to, have generally not much the matter with them; while in fevers, or where there is much irritability of brain, the effort of listening to reading aloud has often brought on delirium. I speak with great diffidence, because there is an almost universal impression that it is *sparing* the sick to read aloud to them. But two things are certain:

(1.) If there is some matter which *must* be read to a sick person, do it slowly. People often think that the way to get it over with least fatigue to him is to get it over in least time. They gabble; they plunge and gallop through the reading. There never was a greater mistake. Houdin, the conjurer, says that the way to make a story seem short is to tell it slowly. So it is with reading to the sick. I have often heard a patient say to such a mistaken reader, "Don't read it to me; tell it to me." Unconciously he is aware that this will regulate the plunging, the reading with unequal paces, slurring over one part, instead of leaving it out altogether, if it is unimportant, and mumbling another. If the reader lets his own attention wander, and then stop to read up to himself, or finds he has read the wrong bit, then it is all over with the poor patient's chance of not suffering. Very few people know how to read to the sick; very few read aloud as pleasantly even as they speak. In reading, they sing, they hesitate, they stammer, they hurry, they mumble; when in speaking they do none of these things. Reading aloud to the sick ought always to be rather slow and exceedingly distinct, but not mouthing—rather monotonous, but not singsong—rather loud, but not noisy—and, above all, not too long. Be very sure of what your patient can bear.

(2.) The extraordinary habit of reading to one's self in a sick room, and reading aloud to the patient any bits which may amuse him, or more often the reader, is unaccountably thoughtless. What *do* you think the patient is thinking of during the gaps of non-reading? Do you think that he amuses himself upon what you have read for precisely the time it pleases you to go on reading to yourself, and that his attention is ready for something else at precisely the time it pleases you to begin reading again? Whether the person thus read to be sick or well, whether he be doing nothing or doing something else while being thus read to, the self-absorption and want of observation of the person who does it is equally difficult to understand, although very often the reader is too amiable to say how much it disturbs him.

Carbonic Acid Not a Poison.

Dr. Van der Weyde has published a paper containing some very extreme views on this subject. He says: For some time the opinion has become prevalent, among many chemists, that most cases of poisoning usually ascribed to carbonic acid are due to carbonic oxide, the product of imperfect combustion of coal. It is argued, 1st. That if carbonic acid were a poison we would continually be inhaling a poisoned atmosphere, as good air always normally contains one-tenth of one per cent. of this substance, and may contain much more without being injurious to the system. 2d. That the cause of the unpleasant effect of air in a close room, after having been breathed by many persons present in the same, is due to other exhalations—perspiration, flavors, etc., of the different constitutions, and not to the carbonic acid. 3d. That pure carbonic acid only intoxicates, and in this way makes the persons insensible; while, when they are made to breathe pure air afterward no unpleasant effects remain. 4th. That death in those cases of committing suicide by means of a furnace of burning charcoal in a close bed-room is caused by the carbonic oxide produced by the imperfect combustion of the charcoal by the insufficient amount of oxygen in the room, and not by the carbonic acid—carbonic oxide being acknowledged as a virulent poison, of which the presence in the air in a quantity of less than one-fiftieth of one per cent. causes a series of alarming symptoms.

As a companion to this change of opinion comes the announcement of M. P. Bert, who has found that when pure oxygen is inhaled under a pressure of four atmospheres, or more, it becomes a most virulent poison; while common air breathed under a pressure of twenty atmospheres kills, not so much by the mechanical effect of an increase of pressure, to which an animal soon accommodates itself, but to the concentration of the oxygen present in the air to a bulk so small that twenty times as much comes in contact with the surface of the pulmonary cells, as is the case in the normal condition.

In reviewing Dr. Van der Weyde's paper, Professor Wurtz, editor of our valued exchange, the *Gaslight Journal*, indorses the position advanced and adds that in his own case, speaking as a chemist, no "change of opinion" has occurred on the point of the non-toxical nature of carbonic acid; as he is not able to remember the time when he was willing to admit it to be a poison, in the true sense of that term.

Cleansing Garments by Heat.

A garment can be freed from odors by exposing it to heat for a few hours. Thus, body and bed-clothing, and indeed all vestures, may be rendered fresh and clean. It is only the odors, and not what remains after they are expelled, that makes the foulness in a garment. Any substance deprived of them cannot be considered filthy or dirty in the true sense. Ground is not offensive, nor wood, nor the metals, nor any texture in its pure native state. It is decomposition that causes the mischief—a rotten carcass, decayed vegetation—it is the essence of these that we bear about in our filthy garments, in our rooms, our bed-clothing, etc. The exhalations and excrementitious matter of the body come under the same head, made worse by decomposition, which readily takes place. Soap and water will remove these more effectually when heated. Heat alone—dry heat—will remove the odors, which are thus sent off in a volatile state. It requires only what the texture will bear to do the work satisfactorily. Thus bed-clothing may be used, and body garments worn longer, by ventilating with heated air. The skunk's odor may be removed effectually by exposing for an hour or two to heat.

Why, in view of this, may not a room be fitted expressly for this purpose, or some other room temporarily employed? A few hours' exposure will, in general, be sufficient. Clothes thrown off at night may thus be treated; bed-clothes an hour or two during the day. The sun in its mid-summer fervor, when the air is dry, is a good renovator, but the heat is not strong enough to do it entirely satisfactorily. Garments will bear a much stronger heat.—*Country Gentleman.*