A CHILL [ROOM IN A MEAT PACKERS' ESTABLISHMENT.

We condense from the N. Y. *World* the following graphic account of a mammoth ice room in a meat packers' establishment in this city:

Yesterday afternoon, about four o'clock, while the rest of mankind hereabouts were weltering and sweltering in perspiration, the writer spent one minute—only one minute, that sufficed—in a place that was so cold, that struck such deadly chills through him, that it would have taken four pretty strong men to have held him there one minute longer. This fearsome place was the "chill room" of a large pork-packing establishment.

As the writer sauntered up one of our very uninviting north-running streets, in the scorching sun, it seemed impossible to conceive that there could be a really cold place this side of the North Pole. Entering the great building to which he had been directed, he was referred to the very intelligent foreman as being the person best able to give the desired information.

Owing to the present high prices of ice the packing of pork in this city has nearly or quite ceased, and the entire ice supply of the establishment was contained in a room. It is 20 by 40 by 10 feet, and capable of holding 100 tuns. On opening the heavy door, it was found to contain ice to the depth of three feet. It is customary to keep these receptacles completely full, but the firm have stopped "cutting up" for fear they should be caught with a house full of meat and no ice to chill it.

R.—"Well, how does the ice help you to pack pork? I see no meat here."

F.—"We send a current of air through the ice, which is then carried down into our chill-room beneath. This place is not very cold, neither is any common ice house. But if you went down in our chill-room you would not want to stay long."

R.—"I would like to try it."

F. (to a laborer).—"William, take him down. Don't let him stay there over a minute. That will be a dose for him."

THE CHILL-ROOM.

Thus warned, the inquirer, who is making it his business to see "what becomes of all the ice," descended into the cellar. One whole side of the vault—60 by 60 by 10—was inclosed like the ice house above. His guide pushed open a door and let him into the dimly-lighted room, not venturing in himself. Two men, dressed as heavily as Esquimaux were there. They greeted him, dressed as he was in a linen suit, with warning voices: "You can't stay here long. It will kill you." "Oh; bring him on," said the other. "Show him the best of it."

The place contained some 300 hogsheads of pork in double tiers. The reporter walked swiftly forward, determined to see what he could in a minute. He folded his arms, gathering his scant raiment closely about him, for he felt as if he had "fallen overboard" into an icy river. Dante's description of the ice hells he visited, in company with Virgil, would not do justice to his sensations. The ice fiends seemed to be feeling their way into his vitals. His clothes, dampened by perspiration, seemed stiffening with frost. Everywhere was a sound of dripping water. When he reached the place which the men at work considered the coldest spot, his sensations were so alarming that he turned and hurried towards the heavy door. He kicked it open with all possible vim, and without any very ceremonious leave-taking. The upper air, which had before seemed unendurably hot, was "just right" with him the rest of the afternoon. He felt the effect of that ice bath until sundown.

The colloquy with the foreman was resumed.

R.—"What is all this freezing for? Are you afraid your pork will spoil before you can get it into the brine?"

CHILLING MEAT.

F.—"Did you never notice that farmers, when they 'put down' their barrel or so of pork, do it in the winter? Meat cannot be cured thoroughly unless all the animal heat is removed before the brine is put on; and the brine itself must be cold. The meat is cut up on this floor; the hogsheads are put empty into the chill-room, and filled there, one tier at a time. The work of the men you saw is to keep changing the meat from one hogshead to another, that every portion may be thoroughly chilled, and that the pickle may reach every fiber. A piece is sometimes moved six or seven times before the pickling is pronounced perfect. You observe that the same men do not work inside and outside the chill-room at random. No employer who values his good men or the lives of his men will ask this of them. A man who tries it seldom lives a year. The heat of puddling furnaces is a trifle compared with this cold."

R.—"How do small dealers chill their meat? They have no such apparatus as this."

F.—"They simply pound up ice and mix it with the meat."

R.—"Is this one of the largest packing houses?"

F.—"No; there are some whose ice houses hold 200 tuns. Some of these have a cellar and a sub-cellar. They begin the curing in the sub-cellar and finish in the upper one."

IMMENSE CONSUMPTION OF ICE BY PACKERS.

R.—"How much ice do you use a week?"

F.—"About 75 tuns. Say under 2,000 tuns a year."

R.—"I do not understand how that fearful chill is created."

F.—"I will explain. The floor under the ice room consists of timbers two inches apart. Beneath them are the 'dripping shelves'—which look like mammoth gutters—four feet wide at the top, and placed at intervals of four feet. But the real gutters hang beneath these—they being open an inch or two at the bottom. The water flows through the gutters to the sewer. Here we have then the greatest possible surface of freezing water for the air already chilled by the ice (and for that reason passing down through the open floor) to encounter. It was when standing directly under these dripping shelves that you felt that intensest cold. There is a large opening at the back of the ice-room, up which the warm air is always passing, to be brought down again by the chill of the ice and the great surface of ice-water on the shelves."

A Catholic Scientist on Vital Correlation.

The lecture by Professor Barker on the "Correlation of Vital and Physical Forces," published on page 48, Vol. XXII., of the SCIENTIFIC AMERICAN, has, according to the Yale College *Courant*, received the honor of being translated in full and published at length in three consecutive issues of *Les Mondes*, a weekly record of science, including its application to the Industrial Arts, by the Abbe Moigno. According to that journal the Abbe is a scientific authority and was for some years editor of *Cosmos;* he is at the same time a Catholic of unquestioned orthodoxy, which last act adds significance, both to his publishing this work of our Professor, and more especially to the following notes addressed to his readers, which precede and follow the text of the lecture. We translate:

"This American lecture will seem to many to take very advanced ground; those of our readers who do not sufficiently reflect upon it, will see in it too many concessions to materialism; we do not hesitate to publish it, however, because, on the one hand, it is a very remarkable lecture, and on the other, it is in spirit (*au fond*) truly orthodox. Man is not, as the ultra-spiritualistic school would make him, an intelligence served by organs, like the archangel Raphael, the companion of young Tobias; his mind is not simply united to his body, it has the form of the body, it is completed by the body as it completes the body; everything which acts upon the body reacts therefore upon the mind, as all which acts upon the mind, may react upon the body. It is then in no wise astonishing, it is on the contrary very natural and necessary that the operations of the mind, thought, will, joy, fear, should interpret themselves in the body by a physical or physiological effect which can be estimated, and which becomes, up to a certain point, the measure, or at least the expression of the psychical phenomenon. Do not separate that which God and nature have united. Man is, at once, a physical, physiological, and psychical being."

At the close of the article he makes the additional remarks:

"As I said at the commencement, although in appearance hazardous enough, yet in spirit, this American lecture is entirely orthodox: certain expressions, however, are incorrect and should be modified. Instead of *vital force, thought-force,* it should say *physical force acting in the phenomena of physiological life,* or *physical force acting in the phenomena of thought or psychological life.* It is perfectly certain that the forces in action in physical phenomena, are also at work in physiological and psychological phenomena. But beyond this physical world extends the world of thought, of will, of free agency, which no reasonable intelligence can disregard, or can disregard only through self-deception."

In view of the antagonism developed in some quarters against scientific investigation as tending to infidelity, these expressions of one confessing a faith so conservative, are of interest. The grounds upon which Christian scientific men can stand secure, were admirably stated by Professor Dana in his recent lecture before the seniors, in which the subject of Darwin's theory was considered. In the course of his remarks he stated that belief in a development theory was not atheism. That the facts of science clearly indicate some plan of development; that Darwin's book was a work of great merit, and that his theory accounts for the origin of some species. As for genera and higher groups there will probably be found other laws to account for them. Let no one fear scientific investigation, for its results were only another name for God's truth. If atheists discovered *facts* in science, the facts were still God's truth, and to be revered and accepted as such. As for atheism itself, give it no quarter! It is death to man's highest hopes. There is no limit to scientific investigation, and there need be no fear in prosecuting discoveries. Such belief, enunciated by distinguished men of science whose position as men of Christian faith is unquestioned should calm the fears of those who tremble before every new discovery, and show no faith in the strength and majesty and unity of truth.

Malleable Properties of Chinese Bronze.

The *Journal of Applied Chemistry* thinks the unsuccessful attempts made to manufacture Chinese gongs and bells in Europe and the United States, are due to the mistake that was made of hammering the Chinese alloy at the ordinary temperature, instead of working it at a high temperature according to the recent discovery made by Professor Riche, of Sorbonne, who has been perfectly successful in his experiments made on a large scale at the Paris Mint.

The different analyses have shown that the Chinese alloy was formed of a certain proportion of tin and copper, in the proportion of 20 parts of tin to 80 of copper. Ingots of bronze were cast containing 21·5, 20·0, 18·5, per 100 of tin; these were afterward submitted to the action of the hammer, at temperatures varying from the ordinary temperature to a red heat. At the ordinary temperature the metal was as brittle as glass, but approaching 300° to 350° Centigrade a sensible amelioration was noticed. At a dark red heat it appears that the condition of the metal is quite different, as this alloy can be worked as easily as iron or bronze of aluminum.

The metal flattened without cracking, under the most powerful blows of enormous hammers, and can be reduced without the slightest difficulty to sheets of one millimeter thickness. These sheets have exactly the appearance of the Chinese bronze, and possess great flexibility.

The action of the laminating is more striking, because, under the hammer, the metal is so soon cooled; that is, it has to be reheated from time to time, which operation complicates the work; in using a laminating machine the work is done with extreme rapidity, especially if care is taken to heat the alloy to a red heat. At an ordinary temperature a single passage under the laminators would break the sheet in thousands of pieces. This alloy can be cut at a high temperature like iron and steel, and presents the fine and homogeneous grain of the latter; it is soldered without difficulty with the ordinary jewelers' solder.

The following tests will demonstrate that the density of the bronze suffers very little modification by the hammering or laminating process:

Chinese Bronze.	Density after Smelting.	Density after Hammering
Bronze at 21·5 per cent tin,	8·938	8·929
Bronze at 18·5 per cent tin,	8·882	8·938
Bronze at 20·0 per cent tin,	8·924	
Bronze at 20·0 per cent tin,	8·918	8·920
Bronze at 20·0 per cent tin,	8,912	

FACTS AND RECIPES.

To Septimus Piesse, the celebrated London chemist and perfumer, we are indebted for the following recipes and facts, received by last steamer. The distinguished source from which they come is guarantee of their reliability:

TO CLEAN GILT JEWELRY.—Take half a pint of boiling water, or a little less, and put it into a clean oil flask. To this add one ounce of cyanide of potassium, shake the flask, and the cyanide will dissolve. When the liquid is cold, add half a fluid ounce of liquor ammonia, and one fluid ounce of rectified alcohol. Shake the mixture together, and it will be ready for use. All kinds of gilt articles, whether Birmingham ware or "Articles de Paris," which have become discolored, may be rendered bright by brushing them with the above-mentioned fluid.

TO HARDEN A POKER.—The fire poker, by constant use, becomes soft, and is generally more or less bent. This arises from its being left in the fire and becoming red hot, then being put on the fender, where it slowly cools—an operation which softens even the best steel. When a poker has thus become soft and bent, it may be again hardened by making it hot two or three times, and plunging it every time that it is hot into a pail of cold water. The rapidly cooling of steel makes it again hard.

INK ON BOOKS.—To remove ink-stains from a book, first wash the paper with warm water, using a camel's hair pencil for the purpose. By this means the surface ink is got rid of; the paper must now be wetted with a solution of oxalate of potash, or, better still, oxalic acid, in the proportion of one ounce to half a pint of water. The ink stains will immediately disappear. Finally, again wash the stained place with clean water, and dry it with white blotting paper.

LAUNDRY PAPER BLUE.—This is a new and useful invention by M. Binko, which will supersede the well-known blue bag of the laundry. A piece of the paper blue being put into water, colors it rapidly to the required rinse tint. Thus the trouble of keeping a blue bag from one wash to another will be avoided, as well as some expense saved.

A TEST FOR COLORS.—M. Nickles has found that fluoride of potassium will discharge a Prussian blue color, and not affect the indigo and aniline colors. This information will interest calico printers and dyers. A fact of more general interest is, that fluoride of potassium will remove ink stains from cloth.

A SEA weed, found abundantly on the coast of France, is now used in that country for clarifying beer, as being much more economical, and better suited to the purpose than gelatin. The weed referred to belongs to the genus *Chondrus crispus*, that is, the Irish or Carrageen moss.

THE brittlewort, or single cell plants, visible only by the microscope, are so numerous that there is hardly a spot on the face of the earth where they may not be found.

IT is estimated that America, when her productive power is fully developed, will be able to feed four times as many persons as there are now on the face of the earth.

ALL other conditions being the same, the vigor and richness of vegetation are proportionate to the quantity of light and heat received.

ONE pound of coal in the hands of a good chemist can by its consumption be made to evaporate, or convert into steam, 14 pounds of water.

THE first gas meter was invented by Mr. Samuel Clegg, in 1815, and was used at the Gas Works in Westminster, Great Britain.

ABOUT 15,000 tuns of ammonia-alum are made annually in England. It is principally consumed in the dye works of Manchester and Bradford.

GRAHAM ascertained that the rate of diffusion of gases is inversely as the square root of their densities. Dr. Piesse was a pupil of Graham.

So many kinds of steel are now manufactured that an exact and permanent nomenclature for them is needed. Dr. Wedding, of Berlin, has endeavored to supply the want. He classes all kinds under two heads, "Raw Steel" and "Fine Steel." Of the former he distinguishes five varieties; while fine steel has a much larger number, each of which is named according to its mode of preparation, or after its inventor,