

STEEL AS A BUILDING MATERIAL.

We alluded in a former issue to the investigation being made under the auspices of the London Board of Trade as to the use of steel for structural purposes. The investigating committee has finished its work and reports as follows: Having given the subject our best consideration, we recommend that the employment of steel in engineering structures should be authorized by the Board of Trade under the following conditions, namely: 1. That the steel employed should be cast-steel or steel made by some process of fusion, subsequently rolled or hammered, and that it should be of a quality possessing considerable toughness and ductility, and that a certificate to the effect that the steel is of this description and quality, should be forwarded to the Board of Trade by the engineer responsible for the structure. 2. That the greatest load which can be brought upon the bridge or structure, added to the weight of the superstructure, should not produce a greater strain in any part than six and one-half tons per square inch. In conclusion, we have to remark that in recommending a coefficient of six and one-half tons per square inch for the employment of steel in railway structures generally, we are aware that cases may and probably will arise when it will be proposed to use steel of special make and still greater tenacity, and when a higher coefficient might be permissible, but we think those cases must be left for consideration when they arise, and that a higher coefficient may be then allowed in those instances where the reasons given appear to the Board of Trade to justify it. It will be observed that a coefficient of six and one-half tons per square inch is assigned to steel, that of iron being six tons per square inch. This increase of the coefficient will effect important economy in structures, especially in bridges of large spans, and will also tend generally to increase the employment of steel for railway and ship-building purposes.

COMPOSITION OF MR. DARWIN'S DROSERIA.—*Drosera rotundifolia*, Lin., has been analyzed by G. Lagan. The fresh plant was treated by dietheral analysis, the process recommended by Legrip (*American Journal of Pharmacy*, 1876, p. 235). The aqueous liquid obtained thereby contained glucose, various salts and a crystallizable organic acid, which appears to be peculiar to this plant, and was also obtained from the ethereal liquid by evaporating it and treating the residue with chloroform, which leaves it undissolved, together with wax and yellow coloring matter. On evaporating the chloroform, a greenish-brown resin was left, which had a strong and characteristic odor, was exceedingly acid and produced a burning sensation when applied to the skin. Contrary to the observation of Reiss and Will, the author found the viscous exudation of the glandular hairs to be destitute of acid reaction, and was unable to obtain formic acid, which was stated to be the principle by which the leaves convert albuminoid matter into peptones.

TURPENTINE AS A DISINFECTANT.—Mr. Thor. Taylor, Microscopist of the Department of Agriculture, has an article in the *Washington Evening Star*, from which we take the following: "Turpentine I also found to be a powerful deodorizer. A tablespoonful added to a pail of water will destroy the odor of cesspools instantly, and in the sick chamber will prove a powerful auxiliary in the destruction of germs and bad odors."

THE APPETITE OF TEMPERATE PEOPLE.—We read that in Frankfort, Germany, the hotel keeper found that the members of the Peace Congress, who were mostly teetotallers, ate so much of solid food as to create an unheard-of deficiency in certain dishes, as compared with an equal number of his countrymen, who revelled in wines, brandies and lager-beer. If this proves anything, it shows that temperance secures a good appetite.

A RAILWAY UP MT. VESUVIUS.—At last there is a prospect of the railway up Mt. Vesuvius becoming a reality within a not very remote future. The carriages on the railway will be drawn, not by a locomotive engine, but by a wire rope. The line will be double. The rails will be laid on an iron framework supported by pillars, also of iron. The pillars will be six meters (a little over six and one-half yards) apart. According to the report upon the plans, it appears that the length of the railway up the mountain will be almost 919 yards. The station near the summit will be nearly 460 yards higher than that at the foot of the mountain, which gives the very steep gradients of one in two. The traffic will be carried on by eight carriages, each having room for four persons; these will be so distributed that while four are engaged in making the ascent the remaining four will be descending the mountain. The carriages will be kept nearly 230 yards apart from one another. To guard against accidents, each carriage will be fitted with two newly-patented automatic brakes, which, should the rope happen to break, will instantly stop the carriage. The wire rope will be previously tested by a strain equal to 64 times the weight of the carriages; and the whole machinery will be set in motion by two steam-engines of 12 horse-power each.

COLIC CURED BY STANDING ON THE HEAD.—Dr. D. L. Phares, in *Trans. Mississippi State Med. Association*, 1878, recommends as a prompt and effectual cure in many cases of colic, to place the patient in an inverted posture. Some cases which have resisted the ordinary treatment for hours and even days, have by this simple means been relieved and permanently cured in from one to five minutes. Sometimes relief appears to be afforded from the escape of air. In other instances, the air in the bowels changes its place, to the relief of the patient. Some movement of gas in the intestines appears to be essential to relief by this method. Of course it is only flatulent colic which can be permanently relieved by this treatment. The *Pacific Medical and Surgical Journal* says: The confidence with which Dr. Phares asserts the success of the plan entitles it to a trial. The treatment could be easily applied in popular practice. The patient might at least be held up by the heels till the arrival of the doctor.

FRENCH ENTERPRISE.—The *Railway Age* says: The French government is laying out a very broad and gigantic scheme of railway construction, adapted to the wants of various sections. With the vast sum of \$100,000,000, which it proposes to borrow every year for ten years, the ordinary lines of four feet nine inch gauge are to be increased and pushed into districts which are at present without them; next a meter gauge is to be introduced for ten productive districts; and finally steam tramways, with a gauge of two feet, six inches, are to be laid on most of the ordinary highways. The speed on these lines is to be about nine and one-half miles an hour, and on the meter gauge about thirteen; the estimated cost is \$12,800 per mile on tramways and \$20,450 on the meter.

PECULIAR ACTION OF PETROLEUM.—A very curious effect (says *La Nature*) is produced on oils of petroleum, even the lightest, by addition of pulverized soap-wort (an herbaceous plant of the family of *Caryophyllaceae*). The powder being digested in water and mixed with the oil, the latter forms a very thick mucilage, so that the vessel in which the experiment is made may be inverted without its contents escaping. What is still more singular, if a few drops of phenic acid be added, and the mucilage agitated, it becomes in a few minutes perfectly limpid.

SECRETARY SCHURE has been elected a member of the American Philosophical Society of Philadelphia.

DOMESTIC RECIPES.

Mutton Hams.—The following is from a correspondent of the *New York Times*: As a change from a too frequent pork, eggs and poultry diet, mutton hams would be very desirable. A sheep slaughtered occasionally would furnish sufficient fresh meat for a week's consumption, without legs and shoulders. These may be cured as hams, and furnish a toothsome change of diet, either sliced raw or lightly broiled over clear coals. To cure the hams, proceed as follows: The legs of a fat sheep are cut into the shape of hams, and rubbed over with a mixture of equal parts of bay salt and brown sugar. They then remain 24 hours. A pickle is made as follows: Two lbs. each of saltpeter, and 1 lb. of brown sugar are boiled in 4 quarts of water, the liquid being skimmed as it boils; when the pickle is cold the hams are put into it and kept covered for two weeks. They are then taken out, wiped dry, hung up, and smoked over a slow fire of damp wheat straw. The knuckles should be filled with brown sugar and tied over closely with pieces of bladder. The hams are then hung up in a warm place, which causes the fat to partly melt and become absorbed by the lean meat. A few sweet herbs may be pounded and mixed with the pickle to add desired flavor. The shoulders may be prepared by removing the blade bones and treating them as above, taking care to rub the openings with plenty of the mixed salt and sugar. When taken from the pickle these should be sewed up. To keep the meat, place it in a clean box between layers of sweet hay, cover with a close-fitting following lid, upon which a weight should be laid.

Catsup.—Select ripe tomatoes, cutting away any green portions, cut in pieces, stew until thoroughly done, and rub through a sieve fine enough to retain the seeds. Evaporate what passes the sieve to the desired thickness; for this, no rules by quantity can be given, as a bushel of some tomatoes will yield twice as much pulp as others. The evaporation should go on over a slow fire, being careful not to scorch it. When thick enough to pour from a crust, without inconvenience, add salt and spices. Here the recipes give the greatest possible variety. Be sure and use salt enough; a chopped onion, or clove of garlic, tied in a cloth and cooked in the pulp, to give just a suspicion of the flavor, is liked by many; allspice black pepper, cayenne and mustard, are the principal spices, and are used according to the taste of the consumers. One recipe directs for a half bushel of tomatoes; Cloves, two teaspoonsful, cinnamon, allspice, and black pepper, two tablespoonsful each; these are not to be ground, but bruised, placed in a little bag and boiled in the pulp while it is being evaporated; when the pulp is thick enough, remove the bag and add mustard, ground, two tablespoonsful; cayenne pepper, two teaspoonsful; good vinegar, two quarts, and salt to the taste. Another recipe uses all ground spices, viz.: For the pulp from $\frac{1}{2}$ bushel of fruit; allspice and cloves, $\frac{1}{2}$ oz. each; mustard, $\frac{1}{4}$ oz. Black pepper, 3 oz.; Mace, $\frac{1}{4}$ oz.; cayenne, $\frac{1}{4}$ oz.; Salt, 6 oz. or sufficient, and vinegar, 2 qts. Add the spices, boil a minute or two, cool and bottle.

A NEW DENTAL COLLEGE.—The new building erected for the use of the Dental School and Medical Laboratory of the University of Pennsylvania was recently opened and dedicated. It cost nearly \$60,000 and was the gift of a number of individuals. In an opening address Dr. Mitchell reviewed the progress of science in the last fifty years, and in speaking of the establishment of lectures on dental surgery at the University said that two chairs have been created by the trustees—one of Mechanical Dentistry and Metallurgy and the other of Operative Dentistry, Dental Histology and Dental Pathology. The students will share with the medical students the instructions of the teachers in the branches of physiology, pharmacy and anatomy.