homeopathists know a number of remedies for so-called hydrogenoid constitution, the most important of which is "Thuja." These remedies have to be chosen according to the individual constitution, and have proved to be of more or less benefit, sometimes even effecting a perfect cure. Allopathists use also several medicaments which are useful in cases of "Sykosis," but none of these remedies are entirely satisfactory.

Professor Jaeger has now, by his careful investigation, discovered a simple and natural expedient for preventing the accumulation of fat and water in the system, which is suitable alike for rich and poor. It consists in adopting a new sort of clothing, we might call it a normal clothing.

The Professor has tested the value of his discovery upon his own person and members of his family, and so has the writer of these lines, who, after having the honor of making the acquaintance of Professor Jaeger in 1879, adopted, at his suggestion, the normal clothing, and recommended it to some thirty or forty persons since. The experiments made by wearing the clothing in the heat of summer and the cold of winter has proved highly satisfactory.

The normal clothing has two essential properties:

1. It consists exclusively of wool, avoiding all materials woven from plant fiber (cotton or linen).

2. It makes a strong point of keeping warm the middle line of the front of the body.

The principal peculiarity of Professer Jaeger's clothing is the exclusive use of sheep's wool, even avoiding pocket and other linings of cotton.

To every thoughtful person it will be a source of satisfaction to know that Professor Jaeger has chosen for the warming of the body only those means which nature has given for the same purpose to those mammals which are the most nearly related to man. The fittest and the most suitable always predominates in nature, and if, in this case, we inquire why hair and wool clothing are the best protection against cold, the answer will be found in the physical properties of these matters. A cover of wool is far more porous than that of plant fiber. The latter, if exposed to moisture, becomes thoroughly soaked with the liquid and sticks to the body, so that no air remains between, and only one smooth evaporating surface is formed, whereas a hair or wool cover being never entirely soaked does not cling closely to the body, but forms a surface which is broken by air bubbles, permitting a great quantity of moisture to pierce to the outside, where it can evaporate. Moisture from the outside is prevented from piercing through the cover to the body on account of the layer of air between the cover and the body, which offers a kind of resistance.

These properties of hair and wool clothing are very important, for the skin of each animal is a source of evaporation, and continually renders moisture to the air.

That difference which exists between plant fiber and wool in regard to the conductibility of heat, renders the superiority of wool clothing in regard to health still more evident. Wool is a bad conductor of heat, therefore wool clothing conserves the heat produced by the body, while cotton, and still more linen, permits this heat to quickly escape and eradiate. This fact accounts for the cool, chilly feeling produced in putting on linen clothing, while in putting on woolen no loss of heat is felt.

The conservation of the heat of body produced by woolen clothing has the consequence that the skin remains in a blood-rich state, and may perspire more freely than when exposed to a quick refrigeration by cotton or linen clothing.

To these important properties of wool, which are sufficient proof of its suitability for clothing, a new one has been added by Professor Jaeger's latest investigations, which we will only mention briefly, as an explicit description would occupy too much space.

Jaeger has proved that in our organism there are certain gaseous volatile substances, called by him "Duftstoffe" (odorous substances), which play a very important part, as yet undivined. He endeavors to show that the actions of our mind are mediated by these substances, and that they are continually rendered free in the acts of breathing and perspiring. He discerns two different groups of odorous substances—"Lust and Unlust Stoffe" (substances of pleasure and disliking). The first ones are exhaled during a joyful and agreeable state of mind, and produce this state of mind if inhaled. Just the reverse is true of the second ones. Whoever will take the pains can discover for himself that the evaporation differs according to the condition of the mind as well as the condition of the body. During joy and happiness the odor of perspiration is not disagreeable, while during anguish and great nervous excitement it is offensive. The substances of disliking have, therefore, a bad odor. In an atmosphere of these substances the vitality is lowered and disadvantageously influenced. This accounts for the fact that in a state of anguish and fear the body is more susceptible to contagious diseases. The inhaling of the "substances of pleasure" heighten the vital actions and improve the resistibility of the body against sickness. Jaeger has now discovered that "sheep's wool" attracts the "substances of pleasure" [this property must not be confused with the great capacity of wool for absorbing odors in general], while clothing made of plant fiber favors the accumulation of the offensive "substances of dislike," with all their evil consequences.

Even with healthy persons, cottou and linen clothing, after long wearing, takes a distinctively repulsive odor, while woolen clothing, even in summer, when evaporation is strong, takes only the sour smell of perspiration, and never accumulates other offensive smells. This seemingly unimportant fact, the mention of which may be ridiculed by many, is, nevertheless, of the greatest value to medical science, and has proved of the highest importance for the "resistibility of the human body against contagious diseases."

Thus far Dr. E. Schlegel. The full responsibility of this report of the hypothesis of odorous substances we have to leave to the editor of the "Homeopathic Monthly," in Stuttgart, and its learned contributor, but we believe that the facts are very interesting and of great value, as they are based upon exact scientific investigation. Especially deserve to be mentioned the several thousand experiments regarding odorous substances which have beeu made with the "chronoscope," an instrument by which the celerity of nervous conduction is recorded.

ENGINEERING INVENTIONS.

Mr. Joseph W. Putnam, of New Orleans, La., has patented an improvement in the class of pile drivers in which the hammer guides or leaders are hinged to permit their inclination, for the purpose of driving piles at various angles.

Messrs. Martin E. Morningstar and John W. Roberts, of Arkona, Ontario, Canada, have patented an improved car coupling of the class called self-couplers; and the improvement consists in the peculiar construction of the link holder.

Mr. Peter Josserand, of Hockley, Texas, has patented an improved valve gear for engines, which consists of a lever, a shaft, and two friction wheels of different diameters for receiving motion from the crank shaft and transferring the motion at an increased velocity to the valve shaft.

Mr. Hans Knudson, of De Forest, Wis., has patented a dynamometrical engine governor, by means of which the work performed by the engine and the strain upon the driving wheel regulates and controls the steam supply.

Mr. Tiry S. Pylant, of Ridge Spring, S. C., has patented improvements in turbine water wheels of that form in which a horizontal wheel is inclosed by a case having upon the top oppositely opening trunks or conduits for delivering the water to the wheel, which trunks have flaring mouths and taper downwardly into the plane of the wheel.

An improvement in well boring apparatus has been patented by Mr. Harry Samuel Gail, of Waukegan, Ill. The object of the invention is to provide means for holding the auger to the rotary shaft in such a manner that they may be easily disconnected to allow of the withdrawal of the auger without disturbing the shaft.

Mineral Veins.—How they were Filled.

We have examples that seem to settle the question in favor of chemical precipitation from ascending hot water and steam. In the Steamboat Springs of Western Nevada, for example, we in fact catch mineral veins in the process of formation. These springs issue from extensive fissures which have been or are filling with silicious veinstone that carries, according to M. Laur, oxide of iron, oxide of manganese, sulphide of iron, sulphide of copper, and metallic gold, and exhibits the banded structure so frequently observed in mineral veins.

In regard to the precise chemical reactions which take place in the deposition of ores in veins, there is much yet to be learned, and this constitutes an interesting subject for original investigation, which I earnestly commend to those who are so situated that they can pursue it.

It may be noticed, however, that the thermal springs which are now forming deposits like those in fissure-veins, contain alkaline carbonates and sulphides, and we have every reason to believe that highly carbonate alkaline waters containing sulphureted hydrogen under varying conditions of temperature and pressure are capable of taking into solution and depositing all the metals and minerals with which we meet in mineral veins.

To these necessarily brief notes on the filling of mineral veins should be added some interesting examples of the mechanical filling of fissures which have been recently brought to light in Western mining. These are furnished by the remarkable deposits of gold and silver ore in the Bassick and Bull Domingo, near Rosita, Colorado, and the carbonate mine at Frisco, Utah. All these are apparently true fissure-veins, filled to as great a depth as they have yet been penetrated, by well rounded pebbles and bowlders which have fallen or been washed in from above. The porous mass thus formed has been subsequently saturated with a hot ascending mineral solution, which has cemented the pebbles and bowlders together into a conglomerate ore. In the Bassick this ore consists of rich telluride of silver and gold, free gold, and the argentiferous sulphides of lead, zinc, copper, and iron. In the Bull Domingo and Carbonate mines the cementing matter is argentiferous galena. That the pebbles and bowlders have come from above is distinctly shown by the variety in their composition and the organic matters associated with them. In the Bull Domingo and the Bassick the pebbles consist of various kinds of igneous rock, mingled with which in the latter are masses of silicified wood and charcoal; while in the Carbonate mine the pebbles are mainly trachyte; but with these are others of limestone and quartzite.

Fossils and other foreign bodies have before this been found in mineral veins, and Von Cotta mentions the occurrence of quartz pebbles extending to the depth of 155 fathoms in the Grüner Lode at Schemnitz, Saxony; but no conglomerate veins like those mentioned above are known to exist elsewhere, and they constitute another of the many new forms of ore deposit which the exploration of the rich and varied mineral resources of the United States has brought to light.

In regard to the ultimate source of the metallic matters which give value to our ore deposits but little can be said with certainty. The oldest rocks of which we have any knowledge, the Laurentian, contain gold and copper, which are indigenous, hence as old as the rocks that contain them, and have been simply concentrated and made conspicuous in the process of their metamorphism. These rocks are all sediments and the ruins of pre-existing continents. By their erosion they have in turn furnished gold, copper, iron, etc., to later sediments by mechanical dispersion and chemical solution. We now find gold everywhere in the drift from the Canadian Highlands, and we have every reason to believe that all the sedimentary strata more recent than the Laurentian have acquired a slight impregnation of several metals from them in addition to what they have obtained from other sources, and we may conclude that the distribution of many of the metals is almost universal. Sea water has been proved to contain gold, silver, copper, lead, zinc, cobalt, nickel, iron, manganese, and arsenic; and there is little doubt that all the other metals would be found there if the search were sufficiently thorough. Hence, sedimentary rocks of every age must have received from the ocean in which they were deposited some portion of all the metals, and for the formation of metalliferous deposits some method of concentrating these would alone be required. A pretty theory to explain such concentration through the agency of marine plants and animals has been suggested by some German mineralogists, and amplified by Professors Pumpelly and T. S. Hunt. Plants have been credited with the most active agency in this concentration; but evidence is still wanting that either plants or animals have played any important part in the formation of our mineral deposits. The remains of sea weeds are found in the greatest abundance in a number of our Palæozoic rocks, and it is almost certain that the carbonaceous ingredient in our great beds of bituminous shale has been derived from this source; yet we find there no unusual concentration of metallic matter, and none of the precious metals has ever been detected in them.

The metallic solutions which have formed our ore deposits have been ascribed to two sources. One theory supposes that they have drained highly metalliferous zones deep in the interior of the earth; the other, that they have leached diffused metals from rocks of different kinds comparatively near the surface. The latter view is the one that commends itself to the judgment of the writer. However probable such a thing might seem, no evidence of the existence of distinct metallic or metalliferous zones in the interior of the earth has been gathered. On the contrary, volcanic emissions, which may be supposed to draw from a lower level than water could reach, are not specially rich in metallic matters, and the thermal waters which have by their deposit filled our mineral veins must have derived their metallic salts from a zone not many thousand feet from the surface. The mineral springs, which are now doing a similar work, are but part of a round of circulation of surface water, which, falling from the clouds, penetrates the earth to a point where the temperature is such as to drive it back in steam. This, with fluid water under pressure and highly heated, possessing great solvent power, may be forced through vast beds of rock, and these be effectually leached by the process. Should such rocks contain the minutest imaginary quantity of the metals these must inevitably be taken into solution, and thus flow toward or to the surface, to be deposited when, by diminished temperature and pressure, the solvent power of the menstruum is diminished. It is evident from these facts that we cannot trace the history of the metals back beyond the Laurentian age. And since we find them diffused in greater or less quantity through the sedimentary rocks of all ages, and also find processes in action which are removing and redepositing them in the form of the ore deposits we mine, it is not necessary to look further than this for a sufficient theory of their formation.—*Prof. J. S. Newberry.*

Steam Cable Towing in Erie Canal.

The Belgian cable towing system, as applied to several sections of Erie Canal, is giving strong evidence of success in arousing the strenuous opposition of those who are interested in the maintenance of the old system of towing. At a meeting of opposition boat owners and boatmen in Buffalo, August 3, it was resolved:

"That the New York steam cable towing system, as being operated on the Erie Canal, does greatly interfere with other ways and modes of towing boats on said route, and therefore it has forfeited its charter; that it is dangerous to boat property interests by reason of collision and delays, and is wholly impracticable. It is not a mode of rapid transit; it is not a cheap and economical method; it is not an improvement over other ways of towing; it is not necessary and it is not wanted in the canal, in consequence of which we unite in asking the Superintendent of Public Works to cause the New York steam cable towing system to be removed for obstructing navigation on the Erie Canal."

THE FASTEST TROTTING.—At Rochester, August 10, the fastest two-mile heat on record was trotted by the horse Steve Maxwell in 4 min. 48½ sec. Flora Temple's previously unequaled record was 4 min. 50½ sec.