

Science & Mechanics.

A SUBSTITUTE FOR HORSE POWER WANTED.

One of the results of the prevalent horse epidemic will unquestionably be to give a great impetus to investigations and experiments having for their object the substitution of some perfectly safe and practical motive power for street cars and road vehicles in place of horse and mule power. Certainly no stronger stimulus to inventive genius could be given. We believe that smoke-consuming steam engines can be built, which shall be noiseless in their operations and more easily managed than a pair of horses, that shall work as cheaply as that animal, either on street rails or off them, and which shall be unobjectionable in all respects. The great car and transportation companies of the country would do well to unite in offering a handsome prize for such an invention. This would excite the inventive skill of our mechanics, induce them to experiment liberally, and doubtless, in the end, produce exactly what is wanted.

It is stated, indeed, that a New Orleans scientist has already solved the problem, so far as it relates to street railways. His engine, which has been thoroughly tested and pronounced to work most successfully, is said to effect a saving of thirty-three per cent of the cost of running cars by horse power. No fire is used. The driving engine is of ordinary character. It has a reservoir large enough to contain three hundred gallons of water with steam room above it. The boiler is of steel, and is well covered with non-conducting material to prevent the radiation of the heat. The motive power of the engine is obtained by means of the compression of steam in water, the steam being conducted from a stationary boiler at the end of the track, which dispenses with the firing-up process while under way. The steam with which the engine is charged is sufficient (according to the capacity of the boiler) to perform a trip of from ten to fifteen miles. At the time of charging, the temperature in the boiler is about 380° Fah., the pressure of steam being about one hundred and seventy pounds to the square inch. There is said to be not the least danger of explosion in using this apparatus, as the pressure in the reservoir can never rise above the point reached at the time of charging, and it is necessarily constantly diminishing as the power is expended; while so simple is its construction there is less skill required in handling this locomotive than a horse or mule. Some of the intelligent and ambitious mechanics and machinists of Pittsburgh might find their account in entering the same field of investigation and experiment.—*American Manufacturer, Pittsburgh.*

There has just been discovered, says the *Chronique de l'Industrie*, at San Giovanni Incarnato, Province of Caserta, Italy, a petroleum well which promises to yield an extremely rich flow. Abbé Stoppani, a celebrated geologist, has visited the locality, and is of the opinion that the deposit of petroleum must be remarkably large. M. Gouni, an engineer of considerable previous experience in the oil regions of the United States, has already begun extensive excavations.

A novelty is in preparation for the Vienna International Exhibition, in the shape of a volume entitled "The Album of American Invention." It is designed to be an elegant medium of exhibiting the peculiarities and advantages of the American works and machinery which may be upon exhibition. The book is to be of mammoth size, to display elegant American press-work and binding, to be divided into appropriate departments, to be extensively illustrated with working drawings of all prominent inventions, and to be printed in three languages—English, French, and German.

NEW DISINFECTANT.—Mr. W. Crookes has taken out letters patent for a new disinfectant and deodorizer, which is claimed to be superior to any known agent hitherto in use. The invention, says the *English Mechanic*, consists in mixing together or passing sulphurous acid into carbolic acid, in order to produce a compound possessing disinfecting, deodorizing, and antiseptic properties of a nature superior to those of the constituents when employed separately. Cresylic acid, or other similar homologues of carbolic acid, or the liquid known as creosote, may be employed for mixing with the sulphurous acid.

CUTTING UP WHALES BY STEAM.—The whaling bark "Java," of New Bedford, is provided with an upright five-horse power engine, to be used in cutting in whales and discharging cargo, hoisting topsails, if required, etc. This must prove a great saving of time and labour, as it usually requires 15 or 16 men to cut in a whale, while, with the help of the engine, six men can easily attend to it. The engine is stationed in the fore-castle, occupying a space ten feet by four feet. It will be the first ever carried to sea in a whaler for these purposes. The idea originated with the first officer of the "Java," Mr. E. T. Fish, of Falmouth, Mass.

That every man contains his own corkscrew inside him has just been proved by a communication to the Académie des Sciences by the Paris Faculty of Medicine. According to this, we are all of us men of "blood and iron." In another than a Bismarckian sense. Each of us carries about him in his blood enough iron to

make a pair of scissors or a corkscrew. Similarly, the material requisite for the construction of four six-pound rifles can be extracted from the blood of forty-two full-grown men. Extending the calculation—after the manner of professional statisticians—it is clear that the 100,000 men killed during the Franco-German war would have yielded enough iron for the casting of 9,521 gun-barrels. After this, no man can say that he is utterly and entirely useless; if he can do nothing else for his country, he can bleed for it, and make it the richer by "a pair of scissors or a corkscrew."

Homeopaths can not compete with one M. Davaine, who recently read a startling paper before the French Academy of Medicine. He described various experiments he had made by the subcutaneous injection of blood derived from an animal poisoned by putrefied blood. He performed twenty-five series of experiments on rabbits and guinea-pigs, thus finding that the virus acquires increased intensity of power and activity by passing through the animal organism. This becomes so tremendous that, to quote M. Davaine's language, "the blood of the rabbit killed by the ten-millionth part of a drop was injected into five rabbits in doses of one-hundred-millionth, the billionth, the ten-billionth, the one-hundred-billionth, and the trillionth of a drop. All died within twenty-five hours." The mathematical calculation involved in ascertaining exactly how much a "trillionth of a drop" is must be something wonderful.

MUSIC AS AN EXPLOSIVE AGENT.—Quite a number of years ago, Professor Tyndall called attention to some interesting experiments which he had made with "sensitive" or "singing flames," as a result of the observed facts that gas-flights will vibrate in a peculiar way under certain conditions when music is made near them. Some time afterward, Mr. Abel showed that explosive substances will generally preserve their stability unless their particles are excited to move in a peculiar way. M. M. Chamption and Pallett have now undertaken to prove that as heat alone will not always cause explosives to explode, there must be some musical note or notes which are capable of doing so. One of their experiments was to place iodine of nitrogen in small bars suspended from the strings of a bass viol. When the bow was applied, it was found that the lowest notes occasioned no explosion, while the higher ones instantly did so, at least sixty vibrations per second being required to produce the desired effect.

An ingenious method of stopping leaks in iron ships when at sea has been patented by Mr. McGool, who effects his object by means of what he calls "safety-plates." These plates are, as artisans say, "dished"—that is, they resemble a dish in shape; consequently, when the hollow side is pressed against the plates of a ship, the "safety-plate" fits close, and will keep water out when held firmly in place with screws. By a clever contrivance, when once the leak is discovered, means can at once be taken for fitting on the new plate. A weighted line is dropped through the hole; this is held hold of by lines drawn under the ship; the weight is taken off and replaced by a screw bolt; a plate, with india-rubber covering the inner edges, is next screwed to the bolt; is dropped overboard, and drawn into position by the line hanging through the leak; an inner plate is then screwed to the inner end of the bolt; and thus the leak is completely covered on the inside and on the outside, and the water is kept out. That this means of safety can be made use of in the open sea, and under different circumstances, without the necessity of docking the ship, is not the least among its recommendations.

AN IMPORTANT MEDICAL DISCOVERY.—It appears that an accident, as in many other discoveries, is about to render an important service in the cause of medicine, by which the eye will be able to locate many diseases, whose source and locality must now be determined by induction or inference rather than sight. It appears that Dr. Richardson, of London, while experimenting with electricity about two years ago, was surprised to find a portion of his hand so illuminated as to become perfectly transparent. This fact, and also a similar experiment by Dr. Priestley, induced Dr. Thomas Nicholson, of New Orleans, not long since, to pursue the subject till he succeeded in completely illuminating the whole hand. From the result of these experiments it seems that, in order to illuminate the body, it would only be necessary to increase the vividness of the calcium light, and enlarge the magnifying lenses employed, so as to gain sufficient power. When all the internal organs of the human system are thus inspected by actual sight, there will be no need of diagnosing a case to discover the cause or seat of a disease. In the case of wounds or internal bruises, the surgeon can determine at once the location of the bullet, or the condition of the part affected; also tumours, ulcers, or any internal malady, as easily as can a house-keeper the displacement of an article of furniture or an ink-spot upon the carpet. It can be readily perceived that this discovery may become an efficient aid to medical science, and an incalculable blessing to mankind.

THE LIFE OF THE BODY is the blood, and the blood is the lever which regulates our spirits and constitution. If we persist in keeping our Blood pure we discharge a debt we owe nature, and are invariably rewarded for our trouble and expense.

It is useless to expostulate on the many advantages of sound health, and if you are now in quest of the precious Gift, you are strongly recommended to procure a supply of the Great Shoshonees Remedy and Pills and take as directed. 5-18 d

Courrier des Dames.

Our attention has been drawn to an article from the London *Examiner*, entitled "The Selfishness of Husbands," which appeared in this column a fortnight ago, and in which theories of more than questionable morality are propounded. Some surprise has justly been expressed that such an article should have been allowed to find its way into the columns of the *News*. We say justly, for it has always been a matter of congratulation for ourselves and of gratification to our readers that the *News* bears a high character as a paper conducted on the soundest principles of morality. The insertion of the article in question was the result of a most unfortunate mistake which no one can regret more than we do, and which we will take good care shall not occur again. Of the principles therein set forward, perhaps the less said the better. We content ourselves with expressing our most unqualified disapproval thereof, trusting that our readers will be satisfied with this explanation.

DRESS HINTS FROM PARIS.

The Paris correspondent of the *Queen* gives the following hints on the latest fashions which may be found acceptable—

The following is a charming black velvet costume for a young married lady. Petticoat bordered with a deep flounce, velvet tunic round in front, and edged with what is called lily of the valley fringe, which looks exceedingly brilliant over the dead black of the velvet. It is carried up to the waist at the sides. A very wide light blue sash, lined with black velvet, falls in loops over the back of the skirt. This sash is so puffed out and voluminous that it quite replaces the tunic. Black velvet bolice, opening over a turquoise-blue faille waistcoat; basque at the back, with blue faille revers; bow without ends in the centre of the waist; another blue bow on the demi-pagoda sleeves. It is easy to change the blue waistcoat and sash for a waistcoat and sash of another colour, and so make variety in the toilette. A black velvet Rubens hat would be worn with this costume; the brim turned up at one side, with a light blue faille bow, an aigrette of blue feathers at the back. No strings, but long black lace lappets are first passed under the chin and then tied beneath the chin.

Sashes that are a contrast with the dress are in grand favour. I have seen a dress of that peculiar grey shade of green called *vert d'ore* worn with a pale pink sash; the bows on the bolice and sleeves were also pink. The sash was tied at the side, and the back breadth was covered with flounces to the waist, the tunic being very long in front.

Toilettes for dressy occasions are now very much trimmed with flowers made in a sort of thick silk lace. These flowers are cut out precisely like appliques of gimp, and are shaded in very bright colours. Garlands of corn flowers arranged between two flounces of straw-coloured tulle looked effective upon a straw faille skirt. Appliques of similar flowers were also arranged around the tunic.

Very beautiful opera cloaks have recently been introduced; they are in the form of dolmans, and made of white Sicilienne. Tufts of roses are appliques on the back, on the sleeves and in front of them.

A great change appears to be taking place in the style of arranging the hair. MM. Albert and Leroy, who were formerly hair-dressers to the ex-Empress Eugénie, have introduced several new styles. Plaits are not abandoned for simple chignons, but they are worn higher, and a wavyed Rocamier bow is arranged over the forehead, and proves highly becoming to youthful and oval faces. Curls are much worn with evening toilettes. The newest head-dress for full dress is called the *coiffure Mille de Belle Isle*. It consists of a profusion of curls tied together and then arranged capriciously at the top of the head; two curls only fall on the nape of the neck. At the side there is a bow of peculiar make; sometimes it is in the Watteau style, pink and blue; the narrow grosgrain ribbon is used, and both colours are very pale. Other bows are made in two shades of flame colour, and in two shades of rose. Purple velvet bows have steel ornaments, and black velvet bows are studded with what have the effect of gold and silver nails; there is no limit, in fact, in the variety of hair bows.

LADY DRUGGISTS.

It may perhaps interest some of our lady readers to learn that the course of study and the examinations of the Royal Pharmaceutical Society have been thrown open to women, and that two ladies have already availed themselves of this privilege, and are now in attendance on the classes as students. It is further expected that the number of lady students will soon be very largely reinforced.

To attend these lectures it is not essential to be an apprentice or an associate of the society, and the lectures are excellent. The laboratory is not, as yet, open to women students, for the reason that it would be inconvenient for them to work there; but laboratory practice can be obtained in other ways, such as in the chemistry classes for women, organised by Professor Williamson at University College.

This opening to women of the courses of study and the examinations of the Pharmaceutical Society gives them for the first time the opportunity of becoming regularly qualified and registered as chemists. In the dearth of occupations in which women can engage, the opening of one so suitable to them is a fact which cannot be too strongly dwelt upon; and it is one which will afford true gratification to all who are anxious to increase the number of employments open to women.

The examinations of the Pharmaceutical Society are of three grades—(a) The First or Preliminary Examination, for registration as apprentices or students; (b) The Minor Examination, for registration under the Pharmacy Act, 1868, as chemists and druggists; (c) The Major Examination, for registration as pharmaceutical chemists, under the Pharmacy Act, 1852. Certificates of having passed the Local Examinations of the Universities of Oxford, Cambridge, or Durham, the Examination of the College of Preceptors, or those of any legally-constituted examining body approved by the Council are accepted in lieu of the preliminary examination.

A new and pretty style of ear-rings is a single pearl or diamond, with a fastening like a screw stud. It is screwed by this into the hole of the ear, so that the stone seems to rest on the ear with no support.

A peculiar discussion on this interesting fashionable question: "Who should pay for the bride-maid's dress?" has arisen in Edinburgh, and been so decided by the chairman issuing the following interference: "That the word 'maid' in this relation, to be a description of a woman's attention." Secondly, finds that a maid should be recompensed by her mistress.

Miss Kate Field, who is lecturing in the States on "The England of to-day," is fortunate in not being present at the Social Science Congress at Plymouth as she has lately confessed to having no great liking for philosophers. "They are unpleasant," observes this lady, "to have in the house; they never take their meals regularly, never comb their hair, never buy a new suit of clothes, always wear shocking bad hats, never button their gloves, are so engrossed in improving the human race as never to pay any attention to the individual specimens around them; and last, but worse than all, they never notice what a woman has on."

The following extract of a letter from Miss Hannah Moore to Lord Oxford may be worth the attention of the ladies who are so very pressing: "My dear Lord, I have been much pestered to read the 'Rights of Woman' by Miss Wollstonecraft, but am justly resolved not to do so. I am sure I have as much liberty as I can make a good use of, now I am an old maid; and when I was young I had, I dare say, more than was good for me. If I were still young, perhaps I should not make this confession; but so many women are fond of government, I suppose, because they are not in for it. To be unstable and capricious, I really think, is but too characteristic of our sex; and there is, perhaps, no animal so much indebted to subordination for its good behaviour as woman. I have soberly and uniformly maintained this doctrine, ever since I have been capable of observation, and I do so now in sincerity and simplicity, both from what I felt at home and have seen abroad."

Speaking of "popping the question," we are reminded that it is still customary in the East with Europeans, and we have another short story to tell and bearing upon that interesting topic. A Madras journal records that an English gentleman went down to Pondicherry the other day, fascinated by a certain Pondicherry fair one. Alas! he only knew his own mother-tongue, and his adored damsel only knew French. But a friendly ayah, who actually knew a smattering of French and English, appeared opportunely on the scene. So the gentleman sat on one chair, the lady on another, and the ayah squatted between them on the ground. The gentleman paid his compliments, and sweetly looked unutterable things. The lady replied to the compliments, and looked dither, and the ayah translated with an oily gleefulness to witness. "Tell the lady I love, I respect, I esteem, I adore her!" said the amorous swain. The question was translated, and a blush ensued; then came the reply, through the ayah, "Missy say she too much pleased—you very fine gentleman." The enraptured lover now poured forth his very soul, which took ten minutes to translate. Like Bottom, but in a far more agreeable way, "he was translated." Then came again a reply—"Missy say she love you too much—oh, so very too much—you are very high-caste sahib—but Missy ask have you got plenty rupee?" The latter replied in the affirmative, upon which the fair one's lips again poured forth a flood of French into English, saying: "Missy she very much love you master, and will marry your honour; will master please to kiss Missy?" The rapturous first kiss then was interchanged; and need we inform our readers a grand marriage was the happy result? The Pondicherry World and his wife were present at the ceremony, and a hundred satin slippers were thrown after the lovely bride and handsome bridegroom as they drove off on their blissful honeymoon tour.—*Queen.*