Scientific.

NEW MEDICAL AGENT.—Recent experiments have been made on the narcotic properties of Indian ——— *canabrio indica*, and it has been found to develope nervous sensibility in an extraordinary degree, creating sensations altogether novel, and exciting the mental faculties in a very peculiar manner. Mr. Laplace, a druggist of New Orleans, thus describes an experiment made upon himself:

"On Saturday, the 12th inst., Mr. C—— and myself determined to make a scientific experiment with this *hatchish*, as the Arabs term it, with a view to ascertain how much of it could be taken with impunity, and what were its immediate results. We each took six grains of the preparation, though we thought that must be rather too large a dose.

"Being of a sanguine temperament, I was the first to feel the effects of the *Hatchish*. There was great weight about the head; then followed irresistible bursts of laughter, during which, however, I was perfectly conscious of all that I was doing, or felt and thought. I was astonished by the crowd of brilliant and novel ideas ast nished by the crowd of brilliant and novel ideas and fancies that rushed through my brain returning over and over again. Imagination and perception were developed to their greatest extent. All the principal incidents of my life passed before me like a flash.

"This condition of mind lasted two hours. Dreams and reveries of the most pleasing nature followed this extraordinary tension of the intellectual faculties. Then came a deep, calm sleep, which terminated this singular fit or mental hallucination. In truth, it is impossible for me to describe all the sensations which I experienced during the experiment. They were, however, of the most delicious nature.

"My companion, Mr. C——, was not affected by the dose he took unitl three hours afterwards. He first felt the most extreme terror, undefinable, and without an object, which was followed by immediate laughter.

"Since the first experiment we have made others, with the same results."

INCREASED AVERAGE DURATION OF LIFE.—Professor Buchanan, in an interesting lecture befor the Mechanics' Institute of Cincinnati, makes the following observation upon the averdge duration of life, the effect in part of the improvements in medical science. He says that in the letter part of the sixteenth century, one half of all that were born, died under five years of age, and the average longevity of the whole population was abont 18 years. In the 17th century, one half of the population died under twelve. But in the first sixty years of the 18th century, one half of the population lived over 27 years. In the latter forty years, one half exceeded 32 years of age. At the beginning of the present century, one half exceeded 40 years, and from 1838 to 1845, one half exceeded 43. The average longevity at these successive periods has been increased from 18 years in the 16th century up to 43.7, by our last reports.

These facts are derived from the medical statistics of Geneva. Applied to this country, such as improvement as is here exhibited from 1500 to 1845, would make a variation of our bills of mortality of more than half a million, or 1500 deaths daily.

THE NEW APPLICATION OF GAS.—On Tuesday evening, Mr. Defries gave his annual dinner at the Freemasons' Tavern, Great Queen-street. Lincoln's Inn-fields, to rather more than 100 members of the gas-fitting trade. Together with two gas fires—one ignited by common coal gas, and the other, the most brilliant of the two, by hydrogen—were exhibited last evening, models of several stoves, and of a bath, by which, as the company were informed by Dr. Bachhoffner while that gentleman was proposing the health of the chairman, any one could be supplied in six minutes with 45 gallons of water heated to 95 or even 110 degrees entirely by gas and at a cost of three-half-pence. Dr. Bachhoffner further stated, that Dr. Defries and himself—for they were now in partnership—would in a few weeks be enabled to bring before the public a substantial and well organized company for furthering the application of gas to all purposes now answered by coal fires. Mr. Defries stated that he had just completed the fitting up of the kitchens, &c., of the Houses of Parliament, where in future cooking, washing, drying, and all similar processes, would be carried on through the sole agency of gas. This adoption by Parliament of the novel use of gas, had already led to many, and would necessarily lead to many more orders.

INFLUENCE OF GUTTA PERCHA ON THE ELECTRIC SPARK.—On Friday a curious experiment demonstrating the protective quality of gutta percha against the escape of the electric fluid, was tried on the premises of the Gutta Percha Company. A series of copper wires, coated with gutta percha, each wire 1,000 feet long, and in the aggregate amounting to 275 miles—was immersed in the water of the Regent's Canal—all except the parts where each wire joined its fellow. The juncture was effected by mere twisted contact, a condition very unfavorable to the ready transmission of the fluid—and the voltaic battery employed in passing the discharge was on the old construction of Dr. Wollaston, consisting of 384 pairs of 4 inch square-plates of copper and zinc—put in action by dilute sulphuric acid. On completing the voltaic circuit, the explosion was instantaneous,—notwithstanding the wires had been immersed in water ever since the 18th of January. By employing a stronger battery, it is difficult to say what would be the limit of the electrical ignition. The usual plan of inflaming gunpowder, by means of voltaic electricity, consists in making the fluid traverse a slender platinum wire, which thereby is rendered incorrodescent—a plan which certainly would not have been effective at so long a distance as 275 miles with the battery employed. Propably it would have been impossible with any battery. The plan actually followed was discovered by Mr. Statham, the chemist, at the gutta percha works, and consists in passing the voltaic discharge through a small layer of the salt (probably sulphuret of copper) which forms when copper is brought into contact with sulphurised gutta percha.

THE EXACT TIME OF DAY.—The latest development of the electric telegraph system is at once useful and beautiful. It is a plan for distributing and cerrecting mean Greenwich time in London and over the country every day at noon. Every holiday maker knows the ball which surmounts the Royal Observatory, and has watched with interest its descent as the clock gave the first stroke of noon, thereby telling the sea going men in the river the exact state of the chronometers which were to become their guides over the pathless waters. Such a ball is to be raised on a pole on the telegraph-office near Charing-cross, and at noon each day is to drop by electric action simultaneously with that at Greenwich—both balls in fact liberated by the same hand—and, falling on a cushion at the base of the pole, is to communicate standard time along all the telegraphic wires of the country. At the same instant, the bells will ring out noon at the most distant places—Hull, Holyhead, Aberdeen, Harwich and Devonport. The great metropolitan clocks, such as the Horse Guards, the Exchange, the New Palace, are to be regulated on the same principal. It is said that all the railway companies have agreed to avail themselves of the means of obtaining an exact uniformity of time.—*Athenæum.*

The Farm.

Agriculture in Europe.

Crowded as England is with a hungry population, forty-five per cent. of her soil is not under cultivation. Yet the proportion of cultivated to uncultivated land, is higher in England than in any other country in Europe. In Russia, less than one-fifth of the soil is under cultivation; in Sweden, only one-seventh; in Austria and Holland, one-fifth; in Switzerland, one-fourth; in France, fifty-four hundredths. There is really no *need* of emigration. In England, as appears by a parliamentary report, there are sixteen millions of acres, wholly unproductive, that might easily be made productive. The reason why these acres are permitted to lie unimproved is, that as soon as they are enclosed, and *before* they can be sufficiently reclaimed to produce a paying crop, they become subject to tithe and tax. Hence only men of large capital dare to undertake the task, and they prefer to invest their capital where the return is more speedy and more certain.

On Manure Furnishing Food for Plants.

We have said that plants contain four *organic* and ten *inorganic* constituents, and that the laws of nature demand that, from the soil and atmosphere, *each one of these* should be available, in order to secure perfect crops, and a *full supply* of each, to secure abundant crops. Perfect ears of corn can be raised on a soil lightly manured, from hills four feet apart, and one stalk in a hill, one ear to a stalk, even if the ground is ploughed only six inches deep, provided the soil is not too wet or too dry. But quite a *different culture and manuring* is required to grow twice the number of hills, three stalks in a hill, and twin ears on most of them. The same will apply to raising wheat.

Waiving remarks on the laws of nature, requiring a deeply and finely pulverised soil for another article, we will in this, consider *manures* as furnishing the food for plants. From repeated experiments it is ascertained that the stale of animals contains a great amount of nutriment, or food for plants; that similar effects are produced by applying the droppings of poultry (guano) animal manure, (blood and offal of slaughter-yards,) &c., &c. Much of the value of these is liable to be lost by putrefaction and evaporation. By chemistry we ascertain what this is, and how to retain it. It is well known that in clearing horse stables, expecially under the floor, there is a very pungent smell. The same is true in opening a heap of stable manure, that has been thrown up and heated. This smell is produced by the escape of ammonia, which is the essence and value of the manure. The loss is greater from privies, because their contents are still richer, and more highly charged with fertilizing gases. How to retain, and to fix them in a state in which they will remain till used by the growing plants, is a question of high importance, which a *scientific* knowledge of these elements alone can answer. An English writer says, "Before you begin to clean your stable, dissolve two pounds of common salt in a bucket of water, and pour through the nose of a waterpot, over the stable floor, an hour before you begin to move the manure, and the volatile salts of ammonia will become fixed salts, from having united with the muriatic acid of the salt; and the soda thus liberated from the salt will quickly absorb carbonic acid, forming carbonate of soda. Thus, you will retain with your manure the ammonia, which would otherwise have flown away, and you will have a new and important agent thus introduced, carbonate of soda." This powerful solvent will be a valuable agent in preparing the manure for the reception of plants, after it is applied to the soil. Night soil is rendered inodorous, by mixing it with charcoal dust, (carbon.) Dry pulverized clay, and plaster of Paris, and ten times its weight of peat muck or turf may be added, or any other carbonaceous matter, with good effect. In heaping up manure, a portion of these mixed with it will, in a great measure, prevent the escape of ammonia, by their chemical action, as above described. I have long practised sprinkling pulverized charcoal or plaster daily in my stables, and also in heaping up my manure with a free use of salt. The result has been most satisfactory. This gives it double the value when kept under shelter. When mixed with alternate layers of meadow mud, triple the quantity may be obtained.—*Watchman and Reflector.*

Rhubarb.

Garden Rhubarb is as valuable as an early vegetable. For sauce and pastry, it is a good substitute for apples and other fruits, it being ready for use at a time when these fruits cannot easily be obtained. Its goodness, however, depends much on its being so cultivated as to secure a large and rapid growth. For this purpose select a location to which the sun has a free access. Then from a space of sufficient length and width remove the earth to the depth of two and a half feet, and fill the trench with rich soil and manure. Let the latter be used plentifully, for rhubarb is a great consumer, and there is no danger of enriching it too much. The ground being thus prepared, the plants may be inserted with their tops two or three inches below the surface.

This mode of planting involves some labor at first, but the process need not be be often repeated, for the same plants, thus set, will produce well for years with proper care and manuring. Besides, my maxim is, What is worth growing at all is worth good cultivation, such as will bring the vegetable cultivated to something like perfection. And I have never seen this maxim more favorably illustrated than in the case of rhubarb when treated in the manner above described. It then has a rapid growth, and produces stalks of unusual size and tenderdness. To protect and enrich the plants a good covering of manure should be applied in the fall and mixed with the soil in the spring. [Farmer's Monthly Visitor.

White Clover.

We are satisfied that our farmers do not appreciate the white clover or white honeysuckle, as some call it, so highly as they ought, nor take so much pains as they should to cultivate it. In fact but very few sow it, when they lay down their lands to grass. They trust to nature to supply them with it.

When once seeded with it, the soil will retain it a long time, for the low short stems will bear heads full of seeds, and these become scattered out into the soil, and thus the seed is kept in the ground and springs up whereever circumstances are favorable for its developement. A moderately clayey loam is congenial for it, and if this be dressed with an occasional dressing of plaster it will bring it out abundantly. It affords an excellent pasture for bees, the best honey in the world being obtained by these little insects from white clover.

It also affords the best pasturage for cattle, especially cows from whose milk cheese is manufactured, as experiments have proved that cows that graze upon this species of clover yield milk that contains *casein*, or cheesey particles, in greater abundance than they do when fed on the common grasses. We throw these hints out for our readers to think of. Four or five pounds, mingled with a due quantity of other grass seeds will be sufficient for an acre, and it can be obtained at reasonable prices at the agricultural seed stores.

Mode of Preserving Shingles on Roofs.

A gentleman in Groton gave us the other day the manner in which he prepared his shingles, before layingt them on his house, some six years ago; and on examination, we found they had a perfectly sound and fresh appearance, as though they had been laid not more than a month.

He had a large boiler, which he filled with whitewash, mixing with it, about one pound of potash to four gallons of liquid, also about the same amount of salt. This composition he boiled, and while it was boiling, he dipped the shingles in, taking a handful at a time, and holding them by the tips. He had boards placed so that he could set his shingles on them on end, and let the liquid, as it ran off them, run back again into the boiler. The shingles he allowed to dry in this position, before laying them, and his belief was, that by thus curing or hardening them, they would last much longer. They could be colored red or yellow, easily, by mixing red or yellow ochre with the composition.

The expense of shingles on a roof, is very considerable, as the most of those which we buy now, unless we go to a very high price in purchasing, last but for a few years, and therefore something that will harden and preserve them like the above, and which costs but little in the application, will be thankfully received by owners of buildings.—*Spindle City.*

USE OF TAR FOR SHEEP.—Having had some experience in the management of sheep, I propose to say a few words on the use of tar for sheep, as a preventive of disease. I have been in the practice of feeding to my sheep four or five gallons of tar to one hundred sheep per year. My plan of feeding is to mix it with salt, by scattering salt in a long narrow trough, and pouring the tar upon the salt. In this way I have no difficulty in getting the sheep to eat it. In addition to this, every time I handle my sheep except when washing them, I apply a little tar to the nose of each; this external application I deem more important in the summer and fall months, when the gad-fly is troubling the flock.

This is the only article that I have used to prevent disease in sheep for a number of years which I have been engaged in wool growing; the result has been that I have not lost one per cent. of my sheep, by diseases of all kinds annually. When I sheared my sheep last May, I had over six hundred, and I am not aware of losing but one since. I ascribe the uniform health of my flock to the use of tar.

I make these statements that others may have the benefit of my experience. WM. S. WRIGHT.—*Ohio Cultivator.*

PULSE OF ANIMALS.—In Vatel's Veterinary Pathology will be found the following account of the number of pulsations in a minute in different animals. The horse from 32 to 38; the ox or the cow from 35 to 42; the ass from 48 to 54; sheep from 70 to 79; dogs from 90 to 100; cats from 110 to 120; rabbits about 120; ducks 136; and hens 140.