

PROGRESS THE PAST YEAR IN STEAM AND ELECTRIC TRACTION METHODS

Steam and Electric Railroads.
The past year has been fruitful in its yield of valuable information as to the respective merits of steam and electrical traction on steam railroads. The first electric zone of the New York Central lines, reaching from Forty-second Street to High Bridge, has now for over twelve months been operated exclusively by electric locomotives, using direct current; and the New Haven system has been in partial operation from Forty-second Street to Stamford, a distance of 35 miles, by electrical locomotives making use both the direct and single-phase current. These two are unquestionably the most important developments in the electrification of trunk steam railroads in the world, both being four-track systems carrying heavy traffic. The New York Central venture has proved to be a brilliant success. With the exception of the Woodlawn accident, which was chargeable to incompetent and careless operation rather than to the electrical equipment, the whole of this elaborate plan has been operated practically without any mishap, and the new locomotives have taken their trains in and out with a smoothness and reliability which exceed even that of the time-honored steam locomotives which they displaced. Moreover, a recent tabulation of the costs of this electric operation shows a decided economy over the former steam traction; and there is the added advantage that the number of train movements in the yard has been reduced from 1,200 to less than 700—to say nothing of the abolition of the nuisances of smoke and noise. Of the results on the single-phase system of the New Haven road it is, perhaps, too early to speak with certainty; but, judging from appearances, it would certainly seem that the installation has not proved nearly so reliable as the direct-current system of the New York Central Road, with which comparison will naturally be instituted. Judging from the continual presence of repair trains and the large number of interruptions due to temporary failure of the trolley lines, it would seem as though the complicated overhead system employed was not sufficiently robust to stand the strain of the heavy traffic of a four-track main line road. Moreover, although the overhead work has been completed as far as Stamford for many months, the company seem reluctant to trust the hauling of their express trains to the electric system. It is sincerely to be hoped that this very meritorious attempt to utilize the single-phase system on a great railroad will meet with the ultimate success which it merits. During the year two other important applications of electric traction to steam railroads have been made. One of these was on a 44-mile stretch of the West Shore Railroad from Utica to Syracuse on which the low-pressure direct-current was used, with third-rail distribution. In making the preliminary estimates, it was found that cost of an overhead line and motor equipment for the single-phase system would be about as great as that of a direct system with sub-stations. During the summer, also, a 34-mile stretch of the Rochester division of the Erie Railroad was placed in electric operation. In this case use was made of a single-phase system of the same general character as that used on the New Haven Road, current being transmitted at 60,000 volts, and a working pressure of 11,000 volts being

used in trolley line. For some years the Southern Pacific electrical engineers have been studying the question of electrifying the Sacramento division of the Southern Pacific Railroad, which extends for a distance of 136 miles; and during the year Mr. Sprague, the father of the multiple-unit system of operation, and some of the leading electrical companies have been called in to decide upon the system which will be best suited to the conditions. As this is a mountain division, it will form by far the most important work of this kind ever attempted. Considerable preliminary work has been done by the Pennsylvania Railroad in its investigation to determine the best type of locomotive and general equipment for its New York terminal lines. Both direct-current and single-phase locomotives have been under test, and we are pleased to note that in one of the later designs the four-wheeled truck has been adopted, with a view to enable these heavy and rigid machines to take the curves more easily. We shall always believe that the rigid driving wheel base of the New York Central locomotives had something to do with the bursting open of the track which resulted in the Woodlawn derailment.

There has been a heavy advance in the size and power of steam locomotives during the past year, some of these having reached colossal proportions. The most notable passenger engine is a huge express locomotive built for the Pennsylvania Railroad with cylinders 25 and 39 inches diameter by 26 inches stroke; 4,322 square feet of heating surface, a tractive power of 15½ tons, and a total weight of 134½ tons. The drivers are 80 inches in diameter and six-coupled. It was designed for the work of handling in one train passenger trains which otherwise must be run in two sections. Equally remarkable is the increase in the size of freight locomotives. There was built by the American Locomotive Company for the Erie Railroad this year a freight locomotive of the Mallet type whose total weight is 205 tons. The engine is compound, with cylinders 25 and 39 inches diameter and 28 inches stroke. The total heating surface is 5,214 square feet, and the tractive effort carries from 35½ to 42 tons. The most notable movement, affecting the economies of the locomotive, has been the growing recognition of the value of superheat. In some cases results have been obtained from simple engines with superheat, that compare favorably with those obtained from compound locomotives. In one comparison made on a western road between a simple-cylinder, superheat locomotive and a compound locomotive of the same weight and general design, the efficiency was within five per cent of that of the compound; and the simple superheat engine not only required less repairs, but, because of the drying-out effect of the superheater, there was an entire absence of foaming of the particularly bad water used on that division. This vital question is being investigated by Prof. Goss, of Purdue University, under a special grant of \$3,000 for four years from the Carnegie Institute. The gasoline motor car has been making steady progress, particularly under the fostering care of the Union Pacific Railroad. The latest type of these cars, as developed at the Omaha shops of this railroad, has 200 horse-power engines; can make 60 miles an hour on level track; and shows excellent qualities of acceleration and retardation. They are built of steel, with port-hole windows and rounded ends. Unquestionably, for the operation of fast and frequent service, this type has a great future before it. It is quite conceivable that, under certain conditions of service, it may prove to be the successful rival of the electric car.

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Nearly everybody knows that charcoal is the safest and most efficient disinfectant and purifier in nature, but few realize its value when taken into the human system for the same cleansing purpose.

Charcoal is a remedy that the more you take of it the better; it is not a drug at all, but simply absorbs the gases and impurities always present in the stomach and intestines and carries them out of the system.

Charcoal sweetens the breath after smoking, drinking or after eating onions and other odorous vegetables.

Charcoal effectually clears and improves the complexion, it whitens the teeth and further acts as a natural and eminently safe cathartic.

It absorbs the injurious gases which collect in the stomach and bowels; it disinfects the mouth and throat from the poison of catarrh.

All druggists sell charcoal in one form or another, but probably the best charcoal and the most for the money is in Stuart's Charcoal Lozenges; they are composed of the finest powdered Willow charcoal, and other harmless antiseptics in tablet form or rather in the form of large-pleasant tasting lozenges, the charcoal being mixed with honey.

The daily use of these lozenges will soon tell in a much improved condition of the general health, better complexion, sweeter breath and purer blood, and the beauty of it is, that no possible harm can result from their continued use, but, on the contrary, great benefit.

A Buffalo physician, in speaking of the benefits of charcoal, says: "I advise Stuart's Charcoal Lozenges to all patients suffering from gas in stomach and bowels, and to clear the complexion and purify the breath, mouth and throat; I also believe the liver is greatly benefited by the daily use of them; they cost but 25 cents a box at drug stores, and although in some sense a patent preparation, yet I believe I get more and better charcoal in Stuart's Charcoal Lozenges than in any of the ordinary charcoal tablets."

Send your name and address today for a free trial package and see for yourself. F. A. Stuart Co., 200 Stuart Bldg., Marshall, Mich.

DON'T DWELL ON YOUR TROUBLES

Do not tell your troubles this year, because the fewer people who know of the thing that have handicapped you the better it is for you. You will then be spared the influence of the unfortunate suggestions which your hard luck stories make upon other people's minds.

Then, again, every time you repeat the story of your misfortunes, your troubles, your trials, your failures, you etch the dark picture a little deeper in your own mind; make a little more real to you what you ought to erase forever. What cannot be cured should be erased forever. What cannot help us, what can only hinder, should be forgotten, discarded once for all.

Many people hang on to their old troubles; they cling to their old sorrows and misfortunes, and their failures, their past sufferings, until they

Nervous Indigestion

The action of digestion is controlled by nerves leading to the stomach. When they are weak, the stomach is deprived of its energy. It has no power to do its work. If you want permanent relief, you must restore this energy. Dr. Miles' Nervine restores nervous energy, and gives the organs power to perform their functions.

"For many years I was an acute sufferer from nervous indigestion; at times I was so despondent life seemed almost a burden. I tried all kinds of remedies and various physicians with little or no relief, until one night last summer I saw Dr. Miles' Nervine and Heart Cure advertised. I resolved to make one more trial which I did in the purchase of one bottle of Nervine and one of Heart Cure. In a few days I began to feel better, which encouraged me so much that I continued the medicine until I had taken more than a dozen bottles. I am very much improved in every way; in body, mind and spirits since. I make a special point to recommend the medicine, and I feel a sincere pleasure in knowing that several persons have been benefited through my recommendations."
A. S. MELTON, Asheville, N. C.

Dr. Miles' Nervine is sold by your druggist, who will guarantee that the first bottle will benefit. If it fails, he will refund your money.
Miles Medical Co., Elkhart, Ind.

ABSURDITIES OF THE PURE FOODISTS

Everybody believes in pure food, and everybody, including manufacturers of food products, is convinced of the necessity for a pure-food law such as the one which is now in force by national enactment. But a law made by the representatives of the people to secure pure-food products is one thing, and the arbitrary enforcement, not of the law itself, but of so-called "rulings," which are at variance, according to good lawyers, with the express provisions of the statute is another.

For example, Mr. Wiley rules that all ice cream must contain a certain percentage of butter fat, no matter if the ingredients from which it is made are perfectly pure and wholesome. His sensational statements about the gelatine used for the "holding up" of this product when it is to be shipped to a considerable distance are ridiculed by chemists of

Rank Foolishness.

"When attacked by a cough or a cold, or when your throat is sore, it is rank foolishness to take any other medicine than Dr. King's New Discovery," says C. O. Eldridge, of Empire, Ga. "I have used New Discovery seven years and I know it is the best remedy on earth for coughs and colds, croup, and all throat and lung troubles. My children are subject to croup, but New Discovery quickly cures every attack." Known the world over as the king of throat and lung remedies. Sold under guarantee at J. C. Perry's drug store. 59c and \$1.00. Trial bottle free.

Indications of Stomach Storms

sometime appear when least expected. Acute indigestion, flatulence, nausea, sick headache, biliousness, sour eructations are a few signals which should not pass unheeded. Any of these conditions indicate some disturbing element which needs to be calmed and removed. Take

Beecham's Pills

and you will safely weather all these storms of sickness. Their benign and healthful influence is felt at once. They soothe, tone and invigorate the organs of digestion, regulate the bile, dispel the blues and create a settled condition of stomach health. Buy a box at the nearest drug store and keep them on hand for emergencies. They will

Make all the Difference

In boxes with full directions, 10c and 50c

high standing. The effect of these and other loose statements of the same character upon legitimate business is very considerable.

Not to President Roosevelt, but to the chief chemist of the Agricultural Department, must be ascribed a goodly measure of the depression from which the business of the country is now suffering. To take only one example—the farmers of the United States, who last year raised products aggregating in value nearly \$7,500,000,000, may have something to say about his attacks upon corn syrup, in the manufacture of which a large proportion of their greatest cereal crop is consumed.

It cannot be too strongly insisted upon that the making of standards was expressly avoided by the framers of the pure-food law, and that no Government official has legal authority for imposing them upon manufacturers in flat contradiction of the provisions of the pure-food law. In doing so and erecting prohibitions which are palpably absurd, Dr. Wiley is bringing the administration of the pure-food law into contempt and putting one of the strongest weapons possible in the hands of its enemies. We want pure and wholesome foods, not finicky and technical "rulings," which have no relation to the purity or wholesomeness of a product and that inflict unnecessary hardships both on the producers and consumers.—Lestie's Weekly.

The Spirit of Winter.

The Spirit of Winter is with us, making its presence known in many different ways—sometimes by cherry sunshine and glistening snows, and sometimes by driving winds and blinding storms. To many people it seems to take a delight in making bad things worse, for rheumatism twists harder, twinges sharper, catarrh becomes more annoying, and the many symptoms of scrofula are developed and aggravated. There is not much poetry in this, but this is truth, and it is a wonder that more people don't get rid of these ailments. The medicine that cures them—Hood's Sarsaparilla—is easily obtained and there is abundant proof that its cures are radical and permanent.