

and the activity so intense, as to be phenomenal. The sales at Oil City during September reached 153,000,000 barrels. On one day alone, Sept. 18, the sales were over 11,000,000 barrels. Meanwhile 70 wells in the choicest territory ceased producing, and early in October the new territory was not yielding over 5,000 barrels daily, and the price had mounted to one dollar. The records of the oil trade, show but feeble parallels to last summer's development, and the rise and decline of the Cherry Grove, Warren Co., Pa., regions is a unique bit of oil history.

SPEED IN WAR VESSELS.

The French have lately launched a new turreted ironclad, the *Arethuse*, carrying four steel guns in her turrets, besides a battery of twelve smaller guns. Her engines are intended to develop as high as 4,200 horse-power, giving her an average sea speed of 16 knots an hour. Her length is 296 feet 8 inches between perpendiculars, and her displacement about 3,360 tons.

It is but a few months since our Naval Advisory Board recommended the building of unarmored cruisers to have a speed of 15 knots. The inability of such cruisers to cope in speed with unarmored vessels like the *Arizona* and the *Alaska*, which would be promptly converted into cruisers in case of war with a commercial power, was pointed out the moment the recommendation of the Advisory Board was submitted.

In the *Arethuse* the proposed cruisers would meet an antagonist which they could as little fight as run away from with any hope of success; and the naval constructors of other nations are not likely to rest until still higher speeds are attained by ironclads, as they have already been by lighter vessels.

It would be consistent with the general conduct of our naval affairs to go on with the building of 12 knot cruisers, admirably appointed to secure the comfort of officers on official picnics and practically useless in time of war; but it may be questioned whether the people, who have to foot the bills, will be at all pleased to have it done.

If the navy department cannot design or get designed a cruiser capable of making or approaching twenty knots, the reconstruction of our antiquated navy had better be postponed until the department itself has been reconstructed.

MORE RAILROAD INVENTIONS WANTED.

With the rapidly increasing traffic on American railroads there is a demand for greater facilities for loading and unloading freight. It would seem that an improvement in the construction of warehouses might be made that would render the rapid handling of heavy freight an easy matter, as compared to the present clumsy and inconvenient structures.

There is hardly any country station but has more or less heavy freight to handle, and frequently much trouble is experienced for the want of proper appliances for the work. Of course at terminal stations something has been done by way of cranes and derricks, hoisting machinery, etc., but even the best regulated warehouses are open to radical improvements in apparatus and appliances for moving heavy as well as light and bulky freight. This is worth the study of inventors.

There is also a chance for improving platforms, so that moving goods from the cars to the warehouses may be an easy matter, without the use of the ordinary trucks.

Another thing that interferes with the rapid handling of freight is the location of the doors of freight cars midway between the ends. Ordinarily, this is the proper place for the door, and is preferable for a single door. But if a car were so constructed that goods could be loaded in any part of its length, it would certainly be more convenient than with the central door. This might be accomplished by constructing the car with a system of slide doors the entire length of its sides, so that a car might be loaded in sections and much sooner than if loaded from the middle. This would also facilitate unloading. Appliances for loading and unloading goods from platform cars are nearly satisfactory, but may be improved.

This is an inviting field for the inventor. But if any American inventor would reach the top of the ladder of fame at a single bound, let him produce a station indicator that will inform railway passengers where they are when they arrive at a station. How well the human machine fails to do this is well known by every railway traveler. For a brakeman to speak the name of a station so that any human being can understand it seems to be one of the lost arts, and it remains for the inventor to produce a substitute to perform this duty. This has already been accomplished so far as "braking" is concerned. Now let us have a reliable station indicator.

Then there is a want of a humane invention to prevent people being caught in frogs and switches, guard rails, etc. Hundreds of people are killed or maimed every year by being caught in the "boot-jack" portion of frogs and held fast, and run down by cars or locomotives. This trap is a peculiar one. A person slides his foot into the wedge-shaped opening, where it is held in horizontally, while the rail heads prevent his lifting his foot vertically, and before he can extricate himself he is a mangled corpse. Some devices have been tried to prevent these horrors, but none is effective. It will not do to fill this space with any rigid substance, for the wheel flanges must have room. Some yielding substance, as a spring, may be made to fill the space, so as to keep the feet out of the trap and yield

to the pressure of wheel flanges. This is a serious evil, and there is no doubt that the railway community will reward the inventor who will produce an effective remedy.

W. S. H.

THE EDUCATIONAL WANT OF THE SOUTH.

It is not many years since the young men of the South were studiously instructed to despise mechanical employments. The "greasy mechanic" of the North was an object of Southern scorn, and the true Southerner was expected to thank God that few of that class were ever likely to venture south of Mason and Dixon's line.

An amazing and most encouraging change has been wrought in the popular sentiment of the South on this score during recent years. Factories are springing up; undeveloped resources are being turned to use and profit; and almost everywhere the feeling is coming to be, if it has not already become, one of respect for and desire for a rapid development of mechanic arts. As an expression of this feeling we have seen nothing more significant than a recent article in the *Atlanta (Ga.) Constitution*, from which the following is eminently quotable. It is a lesson which young men of the North as well as of the South may profitably take to heart:

"We have an over-supply of clerks, lawyers, and politicians, and we always will have; but we are sadly deficient in men whose hands are cultivated as well as their brains. We lack intelligent mechanics and civil engineers, and foremen, and managers of machinery. If we gather enough money to start a factory, we have to send to other States to get men competent to guide the machinery and conduct the inside operations of the factory. If we build a railroad, we must at the outset import engineers, and afterward men skilled in operating a railroad.

"This is all wrong. The young man of the future in the South—the best in the land—should study, as soon as he leaves school, some department of manufacturing. He must first, of course, make himself a skilled mechanic—learn a trade, in other words—and he need not and should not dislike the phrase. It is certainly as honorable and as pleasant to set a horse's shoe as to pettifog a case in a justice's court, or sell ribbons in a retail store, or serve in any other half paid and precarious employment. We must get rid of the sham gentility that despises labor, and especially labor in which brain and skill are harmoniously and effectively united. If the South is to become independent—if her industrial interests are ever fully developed, her young men must abandon old time notions of labor, and prepare themselves to take charge of matters that are now necessarily the spoil of strangers. The best and most inviting places in the southern country now go, as they do in Mexico and Egypt, to skilled men from other and more sensible States. The better the boy is educated, the better mechanic, or superintendent, or engineer, he will make. The high school is as useful to the future mechanic as to the future lawyer or merchant. All boys need all the schooling they can get; but, after they leave school, let them turn to industrial rather than professional avenues.

"To effect this we need, as in all other reforms, a change in public sentiment. We need a sentiment that will condemn the folly of the past in this respect. We need a sentiment that will recognize the fact that the great industries furnish the best field for the young man who has a career to make—that in them is to be found both good wages and the most promising and desirable employment that the land affords. If we can once secure such a public sentiment, we can safely trust the remainder of the problem to the courage and good sense of the young men of the South."

CHEAPER MEAT FOR NEW YORK.

The shipment of dressed meat from Chicago to this city continues, and a sharp fall in prices has resulted. Other and larger firms have taken up the business, and the entire slaughtering interest of this city is threatened with extinction, together with several trades depending largely if not wholly upon it—hide salting, glue making, soap making, and the manufacture of oleomargarine. The public gain in lower prices promises to much more than offset these losses.

It is said that several of the largest slaughterers of this city have resolved to transfer their slaughterhouses to Chicago, and ship their dressed meat here for sale, as it is not thought possible to bring western cattle here to kill in competition with the sellers of beef dressed in Chicago. The expense of killing in Chicago is no greater than here, while the hides, fat, and offal are worth about the same in both markets, the advantage, if any, being with Chicago. A car that will accommodate fifteen live steers will carry nearly three times as many dressed cattle; and the saving in shrinkage and loss through accident is very great. The time of transmission is reduced to forty hours. If the railway companies do not interfere by putting up the rates for dressed meat the new venture cannot fail of success. Hitherto from eleven to thirteen thousand cattle have been slaughtered in New York every week. For three years or more Chicago killed beef has been regularly shipped through this city to the London market, arriving in good condition.

Professor Haeckel in Ceylon.

"My frugal dinner at an end, I usually took a solitary walk on the shore, or delighted my eyes with the sight of the illumination of the palm woods by myriads of fire-flies and glow-worms. Then I made a few entries in my note book, or tried to read by the light of a 'cocoanut oil lamp.

But I was generally quite tired enough to go to bed soon after nine o'clock, after another careful shaking of the clothes for the expulsion of scorpions and millipeds.

"The great black scorpion (nearly a foot long) is so common in Ceylon that I once collected half a dozen in the course of an hour. Snakes exist also in great numbers. Slender green tree snakes hang from almost every bough, and at night the great rat snake (*Coryphodon blumenbachii*) hunts rats and mice over the roofs of the huts. Although they are harmless and their bite not poisonous, it is by no means a pleasant surprise when one of these rat snakes, five feet long, suddenly drops through a hole in the roof into one's room, occasionally alighting on the bed.

"On the whole, however, my nights in Belligam were but little disturbed by animal intruders, although I was often kept awake by the howling of jackals and the uncanny cry of the devil bird (a kind of owl, *Syrnium indrani*) and other night birds. The bell-like cry of the pretty little tree-frogs which make their dwelling in the cups of large flowers, acted rather as a slumber song. But I was far oftener kept awake by the whirl of my own thoughts, by the recollection of the many events of the past day, and the anticipation of that which was to come. A brilliant succession of lovely scenes, of interesting observations, and varied experiences mingled in my brain with plans of fresh enterprise and new discoveries for the morrow."

A Poison for Tubercular Bacteria.

A paper was recently communicated to the Paris Académie des Sciences, by M. De Korab, on the action of helenine on the bacteria of tuberculosis. The facts mentioned deserve notice, although we fear that the hopes suggested are too bright to be realized. The bacilli were cultivated in bovine blood serum, which was daily heated for a week to effectually sterilize it, and was then coagulated by a temperature of 65° C. A guinea-pig having been rendered tubercular by inoculation and inhalation, small tubercular masses were taken from it, introduced into ten tubes containing the tubercular serum, and the tubes plugged after some helenine had been poured into three of the tubes. All were kept at a temperature of 37° C. for a week, and at the end of that time inoculation experiments showed that the organism in the tubes to which the helenine had been added no longer caused tuberculosis, which was readily produced by the contents of the other tubes.

Railway Photography.

Instantaneous photography, in its more familiar aspect, supposes motion of the objects photographed; but another form of it is that in which it is the camera, more especially, that has motion of translation, as in photographing from balloons or trains. The practicability of photographing landscapes from the window of a train running at a rate of even forty miles an hour has been recently proved by Dr. Caudéze, who uses what he calls a gyrograph for the purpose. The apparatus comprises a copper tube similar to that which carries the lenses in ordinary cameras, but the lenses are placed on opposite sides parallel to the axis. Within is a shutter similar to the box of a stopcock; it presents two quadrangular apertures, which, according to the position of the shutter, do or do not let pass the light rays in making a quarter of a turn. This rotatory movement is obtained by means of a spring liberated from a catch. An exposure of only one one-hundredth of a second may be had. With a little practice wonderfully distinct views, it is said, can be obtained with the apparatus.

The New York Elevated Railroads amenable for Damages to Property.

Five years ago, Rufus Story, of this city, sued to restrain the New York Elevated Railroad Company from constructing and operating its road through Front street, opposite his premises. The action was tried in the Court of Common Pleas, in October, 1877, and resulted in a judgment for the railroad. The case was carried to the Court of Appeals, and the final arguments were made last June in Saratoga, John E. Parsons and William M. Evarts appearing for Mr. Story, and David Dudley Field for the railway company.

The Court of Appeals rendered its decision Oct. 17, reversing the decision of the lower court, and practically declaring that the owners of property along the lines of the elevated roads have a right to recover damages where their property has been injured in value by the construction and operation of such roads.

Fatal Accident in Splicing Electric Conductors.

The killing of a lineman while splicing an electric light wire in this city was noticed a few weeks ago. A correspondent, "A. P. v. R.," writes us from Vienna that a similar accident occurred at Triest, September 15. The Industrial Exhibition Building there had been partially unroofed by a storm, and in the fall of a pavilion the wires leading from a dynamo machine to lamps used in lighting the park around the exhibition building were broken. The engineer in charge, without stopping the dynamo, went to repair a broken connection, and, on grasping the two ends of the severed wire, received a shock that killed him. The victim was accounted a capable electrician, and was one of the firm of engineers who had introduced the lights and exhibited electric lamps and machinery in the exhibition.