

**STREET RAILROADS.**

The regular subject of the evening was "Means of transit between different parts of New York City," but the discussion consisted principally of expressions of individual opinion in regard to the various schemes which have been elaborately described in our columns. The weight of opinion seemed to be in favor of a road built in an open, dry canal, just deep enough to run the cars below bridges laid at the surface, and passing through the middle of the block west of Fourth Avenue and Broadway. It was suggested that there might also be a similar road on the east of Broadway.

**PROFESSOR JOY ON CROWDED CARS.**

Professor Charles Joy, of Columbia College, remarked that the engineering problems involved were not in the line of his studies or of his knowledge, but the social or humanitarian side of the question, which had been broached, was of interest to every citizen. He wondered that the people of New York city did not rise in their majesty and put an end to the abuses of our horse-railroad system. He had traveled during the last year 6,000 miles in Europe—just 6,000. Five hundred of this was by other means than steam, 5,500 by steam. He had rode in first, second, third, and fourth class cars, he had traveled under ground and above ground, on water and land, and he had never experienced discomfort which approached that to which he had been subjected that evening in coming down from Forty-ninth street to the Cooper Institute. He had come directly from his laboratory, but he never had in his laboratory odors so vile—his science was not able to produce so foul a compound of stenches as filled the car in which he rode. If the railroad companies treat us thus above ground, what will they do when they get us into subterranean tunnels? He thought that the principal care of the citizens should be to see that, in the granting of franchises, ample provision is made for the protection of the community from imposition.

**THE CURRENCY DELUSION.**

Money continues to get closer as our government contracts the currency. By drawing off the currency the common people are oppressed, and the interest of the money lender is enhanced. In creating the interest-bearing United States bonds was legislation enough in favor of the capitalists for one generation.

If forty-five years' experience in mercantile, manufacturing and farming business has taught me anything, it is that men prosper best when money is most plenty; and always run down, become poor, or break down when money is scarce. In this I find but one exception, and that is the money lender. We need \$1,100,000,000 of currency to do the business of the country this year, and as fast as the United States interest-bearing bonds fall due pay them also off in legal tenders, together with the premium on gold, if need be; and induce the capital now hoarded in bonds, by a suitable permanent protective tariff, to go into manufactures, and to developing the vast resources of our country. H. H. M.

Galesburg, Ill., March 20, 1866.

[It is a curious fact that while no one pretends to understand geometry, or chemistry, or geology, without a methodical mastery of the several problems in their natural order, most people suppose that they are masters of political economy without any study of it whatever]

To give a complete answer to our correspondent it would be necessary to write a treatise on the science of political economy. In the limited space at our command we must content ourselves with reminding him that capital is not the same thing as money. The capital at interest in the country is twenty or thirty times greater than the amount of all the money in the country. Capital consists of horses, sheep, swine, corn, wheat, sugar, plows, steam engines, cloth, and all those forms of wealth which are employed in the production of more wealth. If we had \$1,100,000,000 of currency in the country—if it was in the form of gold, we should send all but 200,000,000 of it abroad, and exchange it for iron, copper, tin, cordage, and other kinds of capital that would be more useful to us than an excess of currency; if it was in the form of paper notes, it would be worth not more than 20 cents in the dollar, and would go no further in accommodating any man with the kind of capital that he needs in his business than \$200,000,000 of currency would. The use of currency is to effect the exchange of commodities, and the same dollar is used over a great many times; \$100 of money may be employed in loaning \$1,000, or \$10,-

000 worth of capital. The rate of interest depends upon the supply of the aggregate capital in all its varied forms, in relation to the demand—not to the desire, but to the commercial demand—by those who not only desire more capital, but who are also able to give satisfactory security for its repayment. In the year 1850 the people of California had more money in proportion to the population than any other community ever had, but the aggregate capital was so small in proportion to the demand, that the regular rate of interest on perfect security was ten per cent a month.

The money of this country is not more than two or three per cent of our aggregate wealth, but it is a very important part, for it is the general measure of values, and therefore, an element in all pecuniary transactions. Every man in the community is interested in having this measure always of the same capacity. The fluctuations inseparable from an inflated paper currency are disastrous in a thousand ways—they impair the obligations of contracts, they rob the workman of his wages, they check the growth of our towns and cities, they infuse uncertainty and distrust into all business relations, and they materially diminish the production of wealth. The tendency of an inflation of the currency is to increase the difficulty of hiring money, and to raise the rate of interest on all ordinary securities.

The most disastrous measure that Congress ever adopted was the inflation of the currency, and every month's continuance of that inflation is costing the people of this country untold millions of dollars.

**Application of Electricity to Paddle Engines.**

General the Count de Molin, an Italian nobleman, has constructed and patented a paddle engine, working by electricity, to be adapted to a small boat, christened *L'Electricite*, destined to ply on the large lake of the Bois de Boulogne. The working parts are thus composed:—There are two upright hoops, about two feet and six inches in diameter, placed three inches apart, in the periphery of each of which are encased sixteen electro-magnets, placed opposite each other. Between these there is another hoop or wheel, of soft iron, of the same diameter as the others, and so articulated as to receive, when alternately attracted by the magnets at each side in succession, a sort of rolling from side to side, or "waddling" motion. To this wheel is fixed an axis about seven feet long, which constitutes the prime moving shaft of the machine. When the wheel between the magnets takes its rolling motion it causes the ends of this axis to describe circles; one end turns the crank of a fly wheel, while the other end is adapted to a framework, on the same principle as the pentagraph, which enlarges the motion received from the central disk, and communicates it in the form of a stroke by a connecting rod to a crank on the paddle shaft. This end of the moving bar also sets to work the distributors for alternately establishing and cutting off the electric communication between the magnets and the battery. There will be in all sixteen elements of Bunsen's. The force of the machine while at work with four elements was found to be one quarter man power, so that with sixteen cells the power will be about that of a man. The paddle wheels are two feet and six inches in diameter.

**The Iron Clad Monadnock.**

The Navy Department has received intelligence of the arrival of the double-turreted iron-clad steamer *Monadnock* at Montevideo on the 17th of January, after a passage of five and a half days from Rio de Janeiro.

The average knots an hour run by the *Monadnock* was 7.37; the greatest distance run in 24 hours was 184.2; the least distance, 173.6.

The following is a detailed statement of the time under way, coal consumed, &c.:

	Days.	Hours.
Total time under way.....	5	18
Total amount of coal consumed.....	168	17
Average per day.....	29	7
Total revolutions of engines.....	519,367	522,093
Average per minute.....	627	63
Greatest number per minute.....	66	66

Saw manufacturers will find it profitable to advertise in the *SCIENTIFIC AMERICAN* constantly. Our readers are frequently writing to us for the above articles.

**MISCELLANEOUS SUMMARY.**

**CURIOUS COUNTER-CURRENT IN LAKE ERIE.**—The *Cleveland Herald*, of a recent date, notices a phenomenon in Lake Erie. Many persons gathered along the banks of the Cuyahoga river to see the water flowing toward the source whence it came, carrying with it logs, blocks, and other floating material. In the afternoon the river rose about two feet, being at its highest stage about four o'clock, when from some cause the water began to flow in an opposite direction from the lake. The wind was blowing a stiff breeze from the south, which makes the matter more singular.

THE consumption of coal, including waste, in the United Kingdom, amounts to three times the quantity expended in 1845. In the year 1845 the consumption in Great Britain, for domestic and all manufacturing purposes, was 31,800,000 tons, and there were exported in the same year, 1,800,000 tons. In 1865, however, there were consumed for domestic and all purposes of manufacture 87,000,000 tons, 9,000,000 tons being exported.

THE greatest pressure of wind ever registered at Glasgow Observatory, was 55 lb. per foot. Professor Airy, however, states that it may reach 80 lb. per foot in this country, while Mr. Scott Russell asserts that 40 lb. per foot is about the maximum force which it is necessary to reckon upon in constructing roofs, etc. This is identical with the maximum registered at Menai Bridge.—*Engineer*.

RECENT accounts from Leghorn state that there is a rise in the price of petroleum, of which the consumption is said to be so large in Italy that the supply is not equal to the demand. The price has so much increased lately that companies have been formed at Turin and Genoa for working and purifying the produce of the petroleum springs which exist in Parma and Calabria.

MAKERS of clothes-wringing machines will do well to advertise in the *SCIENTIFIC AMERICAN*. We have constant inquiries from all parts of the country. A short advertisement constantly published in our paper would doubtless prove profitable to the manufacturer and convenient to readers.

It appears from a number of experiments that the bronze of which the ancients formed their weapons and other articles, was composed of 88 parts of copper to 12 parts of tin. It is remarkable that the same mixture has been employed by nations very remote from each other.

IN the year 1541 the deviation of the magnetic needle from the meridian at Paris, was found to be from seven to eight degrees to the east; in 1,550 from eight to nine degrees, and in 1,580 eleven degrees and a half to the east.

AN American student, Francis A. Channing, of Boston, has lately taken the Arnold prize at Oxford, Eng., for an English essay. The prize amounts to two hundred and ten dollars, and is open to all Oxford graduates of less than eight years' standing.

THE French ordnance committee have come to the conclusion, first, that breech-loaders are a mistake for large calibers; and that for rifled guns, throwing heavy shot, the Whitworth gun is the best. The only thing against it is its cost.

PUGET succeeded in adjusting the eye of a flea so that by the use of the microscope he was enabled to see objects through it. It multiplied and diminished every object. Thus a soldier appeared like an army of pigmies.

PATENT EXCHANGE.—We are requested to state that in consequence of the destruction by fire of building No. 229 Broadway, Mr. Orwig's patent sale exchange has been located at No. 111 Fulton street.

IT has been estimated that a tun and a-half of water falling one foot per minute, will grind and dress a bushel of wheat per hour.

If hydrogen gas be breathed for a few moments it has the curious effect of changing the voice. The effect very soon disappears.

13,392 tons of water are every day converted into steam and discharged into the air from locomotive engines alone in Great Britain.

AS MANY as 12,500 facets have been counted in the eye of a dragon-fly.