

## MISCELLANEOUS.

## A New Kind of Telegraph Lines.

In the East Indies a line of telegraph has been laid down, and is now in working order between Calcutta and Kedgerie, a distance of 72 miles. This has been done by a Dr. O. Shaughnessy, an Irish gentleman. It is now proposed by the Governor-General of India, Lord Dalhousie, to unite all the important places in the British possessions in that country by electric cords. This will embrace lines of 8,800 miles long. The line which has been constructed differs entirely from any of our lines in America. The conductor (a wire with us) is laid part of the way under ground, in a cement of melted rosin and sand, and is a five-eighth of an inch iron rod. Part of the way it is carried over ground on bamboo poles, fifteen feet high, coated with coal, tar, and pitch, and strengthened at various distances by posts of saul wood, teak, and iron wood from America. The bamboo posts are found to resist storms which have uprooted trees the growth of centuries. Though the bamboo soon decays, yet its amazing cheapness makes the use of it more economical than that of more durable and more costly materials. The branch road from Bishlopore to Moyapore passes through a swamp; the country is little less than a lake for five months; the conductor runs on foot paths between the island villages, and for some miles crosses rice swamps, creeks and jeels on which no road or embankment exists. The most difficult and objectionable line was selected to test the practicability of carrying the conductors through swampy ground, and it has been perfectly successful. The Hudee river crosses the Kedgerie line half-way, and varies in breadth from 4,200 to 5,800 feet. A gutta percha wire, secured in the angles of a chain cable, is laid across and under this river, and this chain is found to afford perfect protection from the grapnels of the heavy native boats which are constantly passing up and down.

The advantages of the iron rod as a substitute for the wire, are stated to be complete immunity from gusts of wind, or ordinary mechanical violence; if accidentally thrown down, they are not injured, though passengers, bullocks, buffaloes, and elephants may trample on them: they are not easily broken or bent; owing to the mass of metal, they give so free a passage to the electric currents, that no insulation is necessary; they are attached from bamboo to bamboo without any protection, and they work without interruption through deluges of rain; the thickness of the wire allows of their being placed on the post, without any occasion for the straining and winding apparatus, whereas the tension of wires exposes them to fracture, occasions expense in construction, and much difficulty in repairs; the thick rods also admit of rusting to take place, without danger, to an extent which would be fatal to a wire. On several occasions, one village forge, carried by two coolies, has been found sufficient for welding a mile of rods in a working day. The rods, moreover, are not likely to be injured by crows or monkeys. Swarms of kites and crows perch on the lines through the swamps but they cause no harm; the correspondence flies through their claws without interruption, though on one occasion a flash of lightning struck the wet rod, and killed some scores of them. The importance of this discovery of the superiority of rods over wire will be fully appreciated in a country like India, where the line must often run through a howling wilderness, tenanted by savage beasts, or more savage men. The lines must therefore protect themselves, and this is secured by the use of thick rods.

## A Fish Nursery.

Dr. Samuel J. Stratford, of Toronto, Canada, has asked Nova Scotia for a salt-water lake. He desires to make a fish nursery for salmon, lobsters, oysters, &c. The French have lately been turning their attention to schemes of the kind, and the doctor thinks he could carry out successfully at Lake Bras d'Or, in Cape Breton, a plan which, he says, would prevent the extirpation which threatens these floating ailments of man. He pro-

poses to erect defences at Barra Strait, which would prevent the escape of fish, and feed and protect them in the spacious enclosure. He would do this in such a way as that navigation should not be hindered. He has a method of preserving his fish alive, and so exporting them, in salt water, to foreign countries. And he expresses his confidence that he could not only supply the markets of Canada and the United States, but also those of England and the continent of Europe. This is a matter gastronomically interesting to more than one hemisphere; and we hope the Nova Scotian Legislature will give us all a chance for a little good, cheap salmon, to say nothing of the shell fish.

## Modern Cyclopean Wall.

A recent number of the "Allgemeine Zeitung," contains an interesting account of a visit which the writer had made to inspect the progress of building a wall in the manner called Cyclopean, at Dilsternbrook, near Kiel, in Schleswig-Holstein. He considers the effect of the work and the style of execution far superior to any of the numerous remains called by the same name, which he has seen in Italy, and goes so far as to give it the preference over any other kind of walls, so far as the plain vertical surface of the material, apart from ornamental accessories, is concerned. He thinks that the polygonal stones, exerting their pressure in all directions, must insure stronger work than the squared stones, however closely jointed, which only act in the direction of gravity. Indeed, the innumerable number of many sided and multangular stones of all sizes seem so run together into one compact mass, of which neither time nor age will get the better. Neither mortar nor any other means of binding the stones together is employed; but the greatest care is taken in fitting the granite blocks one into the other, the vacant spaces in the wall as it is carried up being accurately taken off with a lead tape, (bleistanger) forced with a hammer into all the angles of the openings, and then applied to the flat hewn face of the block best suited, and next to be brought to its proper shape by the workman. From the workmen he learned that the directions given them by the architect were, "Five-sided and six-sided blocks, seldom four-sided; straight lines, joint upon angle and angle upon joint, according to the lead tape, and only inclined junctions between the blocks were found to be in every graduation between the perpendicular and the horizontal, without coinciding with either of them. In this obliquity of the joints the author detected the arch principle of construction as applied to the work, and the workmen pointed out to him that each stone either pressed or supported, with every one of its sides, however numerous. Herr Mahnke was the name of the builder, who had said that the cost of the work was less than that of a square stone wall; that it was much stronger, so that he should have used it in several larger buildings if he had been acquainted with it sooner; moreover, that this kind of building was to be preferred, because every stone, large or small, can be used up in it. Generally, the writer holds this polygonal or Cyclopean kind of building to be especially applicable in, first, hydraulic works, as it offers nowhere a continuous joint to the water; second, in fortifications; third, for railways in substruction and deep coverings, and in the cellar story and even in the next story of large buildings and palaces. In these mortar would be used, not as a means of connecting the stone, but only as pointing to the joints, so that the immediate contact of the stone should not be interrupted. In conclusion, the writer recommends the adoption of this method of building according to determined and clearly defined principles and rules, as altogether practical wherever the material for polygonal blocks is found.

## Rain.

The drops of rain vary in their size, perhaps from one twenty-fifth to one-fourth of an inch in diameter. In parting from the clouds, they precipitate their descent till the increasing resistance, opposed by the air, becomes equal to their weight, when they continue to fall with a uniform velocity, which is therefore, in a certain ratio to the diameter of the drops; hence thunder and

other showers, in which the drops are large, pour down faster than a drizzling rain. A drop of the twenty-fifth part of an inch, in falling through the air would, when it had arrived at its uniform velocity, only acquire a uniform celerity of eleven feet and a half per second; while one-fourth of an inch would acquire a velocity of thirty-three feet and a-half.

## Discoveries in Persia.

The commissioners at present engaged in running the boundary line between Turkey and Persia have, in the prosecution of their work come upon the remains of the ancient palace Shushan, mentioned in the sacred books of Esther and Daniel, together with the tomb of Daniel, the Prophet. The locality answers to the received tradition of its position, and the internal evidence, arising from its correspondence with the description of the palace recorded in the sacred history, amount almost to demonstration. The reader can turn to Esther, chap. i. v. 6, there he will read of a "pavement of red, and blue, and white, and black marble in that palace." That pavement still exists, corresponding to the description given in sacred history, and in the marble columns, dilapidated ruins, the sculpture and the remaining marks of greatness and glory that are scattered around, the Commissioners read the exact truth of the record made by the sacred penman.

Not far from the palace stands a tomb; on it is sculptured the figure of a man bound hand and foot, with a huge lion in the act of springing upon him to devour him. No history could speak more graphically the story of Daniel in the Lion's Den. The Commissioners have with them an able corps of engineers and scientific men, and most interesting discoveries may be expected. The Persian arrow-heads are found upon the palace and the tomb. Glass bottles, elegant as those placed upon the toilet table of the ladies of our day, have been discovered, with other indications of art and refinement, which bear out the statements of the Bible. Thus, twenty-five hundred years after the historians of Esther and Daniel made their records, their histories are verified by the peaceful movements of the nations of our day.

## Agriculture in California.

On the 7th of last October, a large agricultural fair was held at Sacramento, which was quite an affair. An address was on that occasion delivered by Dr. John F. Morse, in which he made the following statements relative to farms of different gentlemen. He said that, on the garden of Mr. Bennett, numbering 30 acres, were raised 60 bushels of grain per acre. He employs 10 men, and realizes \$595 weekly. The garden of Messrs. Smith and Barber, numbering 30 acres yields \$60 a day.

Mr. Southwick, on his farm, keeps 125 cows, at a cost of \$600 per month. He sells 176 gallons of milk daily, at \$1 per gallon. He realizes \$63,000 annually from his dairy alone. General Hutchinson, on 80 acres, realized 50 bushels per acre, which weighed 52 pounds to the bushel, and was worth \$91,584.

William H. Davis, on a farm of 600 acres, keeps 2,000 head of stock. J. M. Horn, of San Rose Valley, has a farm of 200 acres, which produces 80 bushels of barley to the acre; also, 150 acres of potatoes, producing 300 bushels per acre. They are worth \$4 per bushel; besides large crops of wheat and oats.

Mr. E. S. Beard, of the same Valley, has 540 acres in barley, wheat and oats, yielding, on an average, 50 bushels per acre. Also, 260 acres of potatoes, yielding 250 bushels per acre. Aggregate amount in value, \$260,000.

At a late meeting of the Farmers' Club in this city (N. Y.) Mr. Shelton, of California, stated that Indian corn did not generally flourish in California. It grew to an enormous height with small crops, from 20 to 25 feet high, at least. The climate is exceedingly changeable. Mr. S. said that he saw some Canada corn four to six feet high, the ears being near the ground. The westerly winds rush in at San Francisco, and rarify the hot air in the valley where stands the city. The branches of trees are all bent to the eastward. Various trees are so injured by wind and sand that they become stunted and grow up in a bush form. As soon as the rainy season be-

gins, clover commences to grow, and grows very bushy and tender. The Indian Squaws gather baskets full, every day, making a kind of beverage of it. The hills and valleys are covered with wild oats and clover. The cattle and stock get very fat on these oats and clover. The clover comprises some fifteen or twenty varieties of every hue and color. The grasses are very fine; the native timothy yields from two to five tons per acre. It is ten feet high. The pin grass is of a very curious growth. An acid clover grows very abundant in the valleys; the natives make a lemonade of it; it is very healthy. He gathered one bushel of sour clover weighing 3 lbs.

The Rev. Mr. Filch, of California, stated that vegetation began in November, and dried up in June. Drought continues till November, and generally without dew. The people commence cutting barley about the last of May, and let it lay on the ground over two months, not raked up.

## English Manufactories.

There were, in Yorkshire in 1850, according to tables made up, 532 woollen factories for spinning only, with 629,838 spindles, and an aggregate power of steam and water combined, of 7,431, furnishing employment to 20,153 persons, of which number 5,063 were females above 13 years of age, and 3,819 boys, 13 to 18 years—the balance being males above that. Of the weaving and spinning establishments not enumerated in the above, there were 180, employing 295,611 spindles, 30,604 power looms, and 14,002 hands, of whom 7,800 were females. Of other woollen factories besides these, there were 159, employing 6,128 persons, the number of spindles, etc., not being stated. These, however, do not include the worsted mills, which, strictly speaking, are woollen manufactories, and are arranged under another head. The number of yards of cloth annually produced is not named, nor are the wages of the hands stated; but it appears that there has been an increase since 1834 throughout the kingdom, of woollen and worsted factories, of 51 per cent., and that the hands have increased 116 per cent., while the increase in the consumption of colonial and foreign wools, which form less than one-half of the whole consumed, has been 64 per cent. From this statement, necessarily much abridged, it will be seen that the manufacture is extensive in England, and rapidly and steadily increasing.

## Safety Lamp.

The ordinary spirit lamps are open to many objections, some of which have been obviated by a new safety spirit-lamp, invented by Alexander J. Walker, of New York City, who has taken measures to secure a patent. The improvement consists in the employment of a movable circular plate, resting on a flange round the inner neck of the lamp, and to which the wick tubes are fixed. This plate is connected with the cap or top of the lamp by means of a vertical rod, a spiral spring being wound round that part which is between the before-mentioned cap and plate. Now, when the top is unscrewed, this rod slides down and carries with it the wick tubes, by which the light is immediately extinguished. In like manner the rod, which is made to slide freely through a circular opening in the centre of the plate when the top is screwed on, raises the wick tubes, while the before-mentioned plate being pressed down by the spring, prevents any flow of liquid otherwise than by the proper manner.

## Railroad Brake.

Ledyard Colburn, of Birmingham, Conn. has taken measures to secure a patent for a new railroad brake. The invention consists of a wrought-iron shoe, which is suspended on either side of the wheel in the ordinary manner, and worked like the common brake. It can also be used in cases of extreme danger by the engineer pulling a lever, which springs the knuckle joints of the shoes, and causes them to fall on the rail under the wheels, thus raising the latter slightly from the track and stopping them, as well as throwing the friction and wear on the shoes.

The Albany and Susquehanna Railroad has been so far located as to be ready for contract. Bids for its construction have been invited, which will be opened on the 1st of December.