

son streets, cost \$1,000.—At a recent meeting of the vestry of the Church of Ascension a committee was appointed to take into consideration a project for the enlargement of the schoolroom.—The Council are considering the enlarging of the market.

TORONTO, ONT.—At a recent meeting of the Property Committee of the City Council it was decided that the sum of \$1,000 be placed in the estimates of next year to be awarded to the authors of the best architectural plan for enlarging and improving the St. Lawrence Market, by the inclusion of the old City Hall and drill shed. It was also decided to order the preparation of plans for adding an additional storey to the Registry Office.—The question of converting the old Immigration sheds into a public abattoir was also discussed. Commissioner Coatsworth having reported that \$6,500 would put the buildings into the desired shape, the matter was deferred to the next meeting.—A deputation from St. Andrew's Society recently waited upon the Mayor and urged the necessity of having a new hardwood floor laid in the Horticultural Pavilion. It will cost about \$1,000.—New stained glass windows are to be put in the chancel of Christ Church, Deer Park.—Mr. D. B. Dick, architect, has completed the plans for the new building to be erected for the Haven and Prison Gate Mission. The cost of execution will be \$16,000. At a recent meeting of the promoters it was urged that the work be proceeded with at once.—Building permits have been granted as follows: W. F. Mountain, 120 Jameson ave., det. 2 storey and attic, bk. dwelling, 10 Jameson ave., cost \$4,000, Arthur Moore, 627 Jarvis street, large 1 storey r. c. storage warehouse, s. side Shaftesbury avenue, cost \$1,200, George Barrett, Yonge street, det. 2 storey and attic bk. dwellings, 263 McCaul st., cost \$2,800; H. J. Tharll, 57 Dunn ave., pr. s. d. and one det. 2 storey and attic bk. dwellings, s. w. cor. King and Springhurst sts., also one det. same kind, 59 Dunn ave., cost \$15,000; Mrs. A. Belford, Close ave., two det. 2 storey and attic bk. dwellings, 208—10 Cottingham st., cost \$9,000.

FIRES.

The new Comstock block on Court House avenue, Brockville, was damaged by fire last week to the extent of \$4,000.—Mr. Joseph Cooper's planing factory at Bracebridge, Ont., was totally destroyed by fire on Sunday last; loss, \$3,000; no insurance.—The Keelersville cheese factory, near Kingston, Ont., was burned to the ground on Wednesday. The factory was owned by Mr. Rothville, Jones' Falls.—The buildings of J. S. Thorn and the Kelly block, owned by James Kelly, at Sarnia, Ont., were destroyed by fire last week. The total loss is \$2,300, which is partly covered by insurance.—The establishment of M. Gray & Co., dealers in hardware, stoves, etc., Orangeville, Ont., was completely destroyed by fire on Monday last, entailing a loss of \$10,000, which is mostly covered by insurance.—The tug C. G. Munro, owned by Cook & Lindsay, of Port Colborne, Ont., was burned on Wednesday last. The boat was valued at \$5,000, most of which is covered by insurance.—The store and residence of E. B. Nash, Cookstown, Ont., was destroyed by fire recently. The loss is said to be heavy.

CONTRACTS AWARDED.

LONDON, ONT.—The McClary Manufacturing Company have awarded the contract for a \$10,000 addition to their works to Messrs. Tambling & Jones.

WINNIPEG, MAN.—The contract for short pipe sewers on Tenth street south and Dagnair street has been awarded to Messrs. Dobson & Jackson, at the price of \$2,048.

QUEBEC, QUE.—D. Ouellet, architect, has awarded a contract to Mr. Thos. Caron, of the parish of St. Aubert (1stlet), for the inside decoration of the R. C. Church of the said parish, to be in pine wood, with carved ornaments, altars, pulpits, pews, etc., the ceiling to be painted in white with gold ornamentation. Cost, \$6,300.

TORONTO, ONT.—The contract for alterations to No. 1 police station has been awarded to Messrs. Wilson & Hanc, at \$680.—The decoration of the Legislative Chambers in the new Parliament buildings has been awarded to Messrs.

Elliott & Son.—Mr. John Fielding, of Belleville, has been awarded the contract for erecting the bridge over the railway tracks at the western cattle market. The price is \$4,248.

COST OF QUARRYING.

Mr. Roger Rigley recently read a paper before the Western Pennsylvania Mining Institute, upon the "Cost of Excavating and Handling Rock." Among other things, he said:

The average weight of a cubic yard of sandstone, or conglomerate in place, is given as 1.8 tons, and of compact granite, gneiss, limestone, or marble, 2 tons, or an average of 1.9 tons, or 4,256 pounds. A cubic yard, when broken up ready for removal, increases about four-fifths in bulk, and one-fourteenth of a cubic yard, or 177 pounds, in a wheelbarrow load. Experience shows that with wages at \$1 per day of 10 hours, 45 cents per cubic yard is sufficient allowance for loosening hard rock. Soft shales and allied rocks may be loosened by pick and plow at a cost of 20 cents and 30 cents per cubic yard. The quarrying of ordinary hard rock requires from one-fourth pound, to one-third pound, and sometimes one-half pound of powder per cubic yard. Drilling with a churndriller costs from 12 to 18 cents per foot of hole bored. Upon these data Mr. Rigley estimates the total cost per cubic yard of rock in place, for loosening and removing by wheelbarrow (labor assumed \$1 per day of ten hours) as follows: When distance removed is 25 feet, total costs equals \$0.537; when 50 feet, \$1.549; when 100 feet, \$0.573; when 200 feet, \$0.622; when 300 feet, \$0.768; when 1,000 feet, \$1.011, and when 1,800 feet, \$1.401. This is exclusive of contractors' profit.

When labor is \$1.25 per day, add 25 per cent. to the cost price given, when \$1.50 per day, add 50 per cent, and so on. In hauling by cart, the cost of loading, which will be about 8 cents per cubic yard of rock in place, and additional expense of maintaining the road, must be added. Allowing then, 851 pounds as a cart load, the total cost per cubic yard is estimated, when removed 25 feet, at \$0.596; when 50 feet, \$0.599; when 100 feet, \$0.605; when 200 feet, \$0.617; when 300 feet \$0.655; when 1,000 feet, \$0.717, and when 1,800 feet, \$0.940.—Stone.

USEFUL HINTS.

To remove old paint, wet the place with naphtha, repeating as often as is required. As soon as it is softened, rub the surface clean.

The new paving brick factory to be erected in Springfield, Ill., will be located in the western part of the city, and a novel feature in connection with this factory is the proposed shipment of the product to the several railroad stations by the street-car lines. One motor will draw five trucks heavily loaded with brick. The cars run regularly between 6 a.m. and 12 midnight for passenger traffic, and the brick trains will fill in the remaining six hours time.

SIZE FOR WALL PAPER.—When you have a border with loose red lines on the edges which are sure to rub up when wet, just give them a size of water glass on the face a few moments before you paste the border and the paste on the

other side will have no effect upon the color. You can either size the entire border, or pencil down the red or other loose and high colored places. If you are putting up decorations, or putting in small panels of delicate paper, just give the face of the paper a coat of water glass varnish and let it dry before you cut or paste your paper, and you need have no fear of your colors washing up or the paper getting clouded by the use of the brush or roller.

To preserve hempen ropes exposed to a moist atmosphere, it is recommended to impregnate them according to one of the two following receipts, which are quite inexpensive. 1. Dissolve about 4 ounces of soap in 1 quart of water, draw the dry through the solution and dry it. Then give it a thin coat of hot tar and dry it in the air. 2. Dissolve 5½ ozs. of blue vitriol in 1 quart of water and put the dry in the solution, allowing it to remain 4 days. A coating of hot thin tar completes the process, after which the rope is dried in the air. The blue vitriol protects the fibres from the attacks of small animals, as well as from moulding and rotting. The coating of tar fixes the blue vitriol in the fibres.

MUNICIPAL DEPARTMENT.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

Thomas A. Connell, of Prescott, brought an action against the town claiming \$6,000 damages for injuries received owing to the alleged negligence of the defendants' servants in blasting out a culvert or drain across Wood street in that town. The action was tried at Brockville by Mr. Justice Street and a jury and a verdict given in favor of the plaintiff for \$3,000 and costs. The defendants appealed to the Chancery Divisional Court and the appeal was dismissed. They are now appealing to the Court of Appeal.

York v. Township of Osgoode.—Judgment on motion by the plaintiff to continue an interim injunction granted by the local Judge at Ottawa. The defendants took the objection to the motion that the action did not lie, because the rights of the parties were concluded by the finding of the county judge affirming an award in proceedings under the provisions of R. S. O., ch. 220, the Act respecting ditches and watercourses. The learned chief justice holds that the express words of sec. 11, sub-sec. 4, of this Act show that the appeal to the county judge is final, and that the plaintiff has no remedy by action. Motion refused, with costs to the defendants in any event.

WEBSTER v. CITY OF TORONTO.—Judgment on motion by the plaintiff to commit Robert Gray for refusing to be sworn on an appointment for his examination as an officer of the corporation of the city of Toronto, for discovery. Action for damages arising out of a sidewalk accident. The defendants' street commissioner had already been examined, and stated that he himself had general supervision of the road and sidewalks, and that Gray was the foreman under him. The learned Chief Justice holds that the case, is concluded by the judgment of Rose, J., in Thomas v. G. T. R. Co., 12 C. L. T. Occ. N. 42. Motion dismissed with costs to the defendants in any event.

THE COLLECTION OF WATER SUPPLIES.

(Continued from last week)

When the watershed of the stream lends itself to the construction of a reservoir by building a dam across the stream the quantity of water available would be greater than the previous average discharge at that point, according to Mr. Brightmore, because the average distance the rain has to travel before reaching the mass of water is less than before, and a portion of the rainfall which previously fell on the ground now falls directly into the reservoir, resulting in a reduced evaporation and absorption by vegetation. For the same reason the discharge of a catchment basin depends on the distance of its part from the point of discharge. A valley of a stream is suitable for a reservoir if it narrows at a point so as to give the desired volume of storage, and if at the point of contraction there is an impervious stratum at no great depth beneath the bottom and sides. If the rock is near the surface and a hard quality, and stone is plentiful, it would generally be more satisfactory to have a masonry dam. If the gorge is narrow and the rock rises on each side the dam would probably be much cheapened by arching it in plan, in which case its sectional area would be much reduced. If, however, the impervious stratum is at a considerable depth, or is of a soft nature requiring the pressure to be well distributed, an earthen dam would be most suitable, and a puddle trench would, in this case be carried down to the impervious strata. It is, above all things, necessary in such a reservoir to have a good storm overflow big enough to amply provide for the greatest hourly rainfall that could occur. most failures to dams having been due to insufficient overflows.

The water obtained from catchment areas being taken nearer to its source is less likely to be polluted by organic matter than water pumped from a river, although if the water by percolation has taken up iron or lime carbonates, or contains dissolved hydrogen sulphide, the flow along an open channel facilitates the deposit of the former and the escape of the latter.

When the conditions are such that the water table nearly coincides with the surface of the ground, but where there is no natural depression to collect the water in a lake or stream, then the supply may be obtained either from springs or from shallow wells by pumping, or intercepting tunnels or drains. In districts sparsely populated, if springs exist or wells be sunk, they may prove valuable sources of supply. Most towns or cities at one period of their history have been supplied from shallow wells which have been abandoned as they became polluted. In California, for instance, there are a number of shallow artesian wells from 100 to 250 feet deep, much used for domestic supply and irrigation. As such a district becomes more closely populated such wells, unless there is a layer of impervious material above the water-bearing strata, are very liable to contamination. Springs however if removed from the source of contamination, are valuable sources of supply.

The domestic supply of Paris, France is from the spring waters of the Vanne and Dhuis and from artesian wells at Grenells and St. Dennis. Rome is to a large extent supplied by the Acqua Marcia, which derives its supply from the seven Siren springs. Vienna is also supplied from springs, and part of London by the New River, from the springs at Chadwell and Amwell. In some instances, as at Frankfurt-on-the-Main, the springs are in the spring-time supplemented by pumping from deep wells. Spring water is generally free from organic matter, but often contains mineral matter in solution, generally ferro-carbonate and calcium carbonate, both of which are partly deposited by exposure to the air, which also permits the escape of any dissolved hydrogen sulphide. Iron may be removed from solution in water by causing the water to fall in fine streams for about 7 feet, and then passing it through filters,