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CANADIAN CONTRACT RECORD
A WEEKLY JOURNAL OF PUBLIC WORKS · TENDERS · ADVANCE · INFORMATION · AND · MUNICIPAL · PROGRESS
EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

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BUSINESS NOTES.

N. St. Charles, painter, Montreal, is said to have comprised at 25 cents on the dollar.

Alex Milne, plumber, London, Ont., is announced to have called a meeting of his creditors.

Phillip Gies & Co., tin merchants and plumbers, Berlin, Ont., have dissolved partnership.

J. S. Cown & Co., paints, oils and hardware, Wellington street, Montreal, have assigned. Liabilities $2,500.

W. A. Cole has been appointed assignee of the estate of Wimifred Barbeau, plumber, Ottawa. An offer of 25 cents on the dollar has been made.

The plant of the Canada Pipe & Foundry Co., and William Clendinneng & Sons, Montreal, will be offered for sale by public auction in that city on the 1st of April.

At the annual meeting of the Silica Barytic Stone Co., held at Guelph, Ont., recently, officers were elected for the ensuing year as follows: C. Kloepfer, president, Guelph; W. Mills, vice-president and general manager, Ingersoll, W. Ewart, secretary-treasurer, Ingersoll.

CONTRACTS OPEN.

ST. ALBERT, N. W. T.—A woollen mill is to be built here.

ALBERNI, B. C.—A. M. Chambers is erecting a new hotel at this place.

EBURNE, B. C.—McPherson & Hickey are erecting a salmon cannery here.

OLINDA, ONT.—James Scott and Elmer Ryall will each erect new brick houses in the spring.

NEWMARKET, ONT.—The council has decided to raise $9,000 to install an electric light plant.

BOTHWELL, ONT. The construction of a system of waterworks and electric light is being agitated.

STIRLING, ONT. — The Oddfellows society will probably erect a new hall, at a cost of $5,000.

AYLMER, ONT.—The Aylmer Canning Co. will erect large additions to their buildings this spring.

GALT, ONT.—A new wing to the hospital will be erected during the coming summer. Estimated cost $5,000.

MOSSOMIN, N. W. T.—Mr. O. Neff has offered a free site for the proposed new building for the Western Oddfellows.

OWEN SOUND, ONT.—A delegation has requested the Dominion government to assist in building a dry dock in this city.

RENFREW, ONT.—The by-law to provide $68,000 for constructing a system of waterworks will be voted on at an early date.

CAMPBELLFORD, ONT.—A local capitalist is promoting a scheme for an electric railway from Campbellford to Norwood.

BELLEVILLE, ONT. — Jas. Hamilton wants tenders until the 20th inst. for erecting a brick house on Alexander street.

GRAND VALLEY, ONT.—Three blocks of stores and a new Methodist church will be built here during the coming summer.

PORTAGE LA PRAIRIE, MAN.—A stone foundation is to be placed under the Lake of the Woods mill and elevator during the coming summer.

THESSALON, ONT.—The town council are putting in water mains, with about a mile and a half of four inch pipe. Estimated cost, $6,000.

VICTORIA, B. C.—The City Council has passed a by law authorizing the corporation to issue debentures for $120,000 to meet current expenses.

SAULT STE MARIE, ONT.—A scheme is being agitated for the construction of a street railway between the east and west sections of the town.

BRITANNIA, ONT.—The government will be asked to make a grant towards constructing a breakwater in front of the village, estimated to cost $3,000.

WEBBWOOD, ONT.—Proposals are invited by Wm. Irving, township clerk, for the purchase of $4,000 of debentures, bearing interest at 5 per cent. per annum.

NAPANEE, ONT.—A committee of the *Presbyterian church congregation has* been appointed to carry out the proposed improvements, which will cost about $2,500.

KINCARDINE, ONT.—Mayor McPherson and Colonel Scott interviewed the Minister of Public Works last week requesting a grant for harbor improvements at this place.

PRESCOTT, ONT.—Tenders are invited by T. R. Melville until the 9th inst., for *the erection of a building to be used as a* floral hall for the South Grenville Agricultural Society.

BERLIN, ONT.—The Board of Trade is considering a proposition to connect the town with the C. P. R. at Galt by the construction of a steam railway, estimated to cost $120,000.

PEMBROKE, ONT.—A movement is on foot to secure the construction of the Pembroke Southern railway from here to Golden Lake. The town will be asked to take stock to the amount of $25,000.

STRATFORD, ONT.—Mr. David J. Baxter, architect, has prerared plans for alterations to a residence at Orillia, for Mr. Wm. Orr, of Brechin. Tenders for the work will be called at Orillia in a few days.

ST. THOMAS, ONT. Surveys have been made for the extension of the Lake Erie and Detroit railway from St. Thomas *to Dutton.—The city council has given the* first reading to a by-law to provide $50,000 for a municipal electric light plant.

RAT PORTAGE, ONT.—C. W. Belyea, chairman Board of Public Works, invites tenders until the 9th inst., for the delivery of 50,000 feet of tamarac lumber; 20,000 feet 2" plank, 16 feet long, and 20,000 feet 12 feet long, also 10,000 feet, 3 x 6, 16 feet long.

VALLEYFIELD, QUE.—The new warehouse for the Montreal Cotton Company will be three storeys, 170 x 90 feet, stone foundation, wood walls, roof covered with iron. Estimated cost, $10,000. The work is in charge of the manager of the company.

KINGSTON, ONT.—A large addition is to be built to the Rockwood Asylum during the coming summer.—A movement has been started to enlarge and improve the Collingwood ave. Baptist mission church. A committee has been appointed to report on the most feasible plan.

WOODSTOCK, N. B.—Preliminary surveys of the Woodstock and Centreville railway have been commenced. Upon the completion of these, plans will be prepared and submitted for approval, after which construction work on the road will be commenced. Mr. Frank W. Lawlor is the chief engineer.

FORT WILLIAM, ONT.—A deputation from this town has requested the Minister of Public Works to erect a new post-office

and custom house here.—G A. Parker, of Minneapolis, is promoting a scheme to erect a large flour mill here. The mill will cost $200,000, and a bonus of $50,000 is asked from the town.

HARRISTON, ONT.—Geo. Gray, architect, is preparing plans for the following buildings: Mr. John Bradley, three-storey brick block and stone basement, pressed brick and cut stone front; Jos. Meiklejohn estate, two-storey brick block with stone basement; M. F. Beck, two-storey brick residence and a wholesale leather warehouse.

HAMILTON, ONT.—Conversation with local architects goes to show that building operations in this city the coming season are likely to be on a much more extensive scale than for many years past.—Mr. Robert Clohecy, architect, invites tenders until 5 p. m. on the 7th inst. for the erection of a block of stores and residences, to be constructed of stock brick and heated by hot air.—E. Patterson has taken out a permit for erecting a two-storey brick dwelling on East ave. south, to cost $2,000.

ST. CATHARINES, ONT.—Quinn Bros., proprietors of the Russell House, will build an addition of 30 rooms, with brick front, to their hotel during the coming summer. This addition will be heated by hot water. They have also let the contract to Cook & Son for new bar fixtures.—Plans are being prepared by W. B. Allen, architect, for an addition to the general and marine hospital. The material employed will be pressed brick, hot water heating apparatus. Cost about $5,000. Tenders will be called for the 12th inst.

ST. JOHN, N B.—Plans are invited by the Board of School Trustees until April 15th for a new High School building, to be erected on Union street, at an estimated cost of $40,000. The building is to be of brick, with stone facings, the school rooms two storeys high, 28×32 feet. There will be an exhibition hall, with a seating capacity of 600 persons.—It is understood that the work of constructing the Restigouche and Victoria County railway will be proceeded with this summer. Mr. F. R. Boselly is president of the company.—The C. P. R. intend rebuilding 160 feet of North Rodney wharf and enlarging their flour sheds.

MONTREAL, QUE.—Coroner McMahon has requested the Mayor to endeavor to induce the city to co-operate with the Provincial government in constructing a new morgue.—The municipal council of St. Lambert has voted the sum of $75,000 for the construction of an aqueduct, and tenders for the work will shortly be asked.—The annual report of the Harbor Commissioners recommends the construction of a pier and other improvements.—Work will shortly be commenced on the proposed additions at the hospital for the insane at Virden, plans for which have been prepared by Mr. A. T. Taylor. The addition will be 216×43 feet, built of La Prairie red brick and two storeys high.

LONDON, ONT.—Mr. C. G. Horetzky, sanitary engineer of the Provincial government, has presented a report to the city council on the construction of a sewerage system. It is probable the scheme outlined by Mr. Horetzky will be carried out. The cost of the disposal works alone, exclusive of sewerage, is estimated at $61,000.—It is understood that the erection of the new Grand Trunk car shops will be commenced early in the spring.—Tambling & Jones have taken out permits for three brick residences, one on Wellington street and two on Horton street west. The former will cost $2,500 and the latter $3,5000.—The Board of Education will ask the city council to grant $58,000 for building a twelve-roomed school on Colborne street, two four-roomed schools in the northern part of the Second and Fourth wards, and an addition to several of the present buildings.

OTTAWA, ONT.—The bill incorporating the Montreal & Ottawa Railway Company has passed the railway committee of the Dominion Government. The road must be completed in four years, and the company must build twenty-three miles the first year.—The Anglican congregation have purchased two lots on Mutchmor street and propose erecting a new church building.—The Government were last week requested to grant a bonus of $3,000 per mile for the construction of 70 miles of the Rainy River railway from Antikokan Range to the head of navigation on Rainy lake.—J. E. Hanna, M. D., has purchased a lot, corner O'Connor and Maria streets, and proposes erecting an office and residence thereon.—The necessity of providing a steam plant for the waterworks is being urged upon the city council, and steps will probably be taken at an early date towards that end.—The congregation of the New Edinburgh Presbyterian church have decided to enlarge the church building and erect a new sunday school hall. The cost will be about $5,000.—Robert Surtees, city engineer, will receive tenders until the 11th inst., for the construction of plank sidewalks required during the year.

WINNIPEG, MAN.—Additional school accommodation is required, and the School Board will probably be urged to complete at once the new Dufferin school.—The city engineer will be asked to lay before the council full particulars regarding the proposal by the city to construct its own system of waterworks.—Repairs to the Main St. bridge have been commenced. If the $10,000 to improve the bridge is granted the new piers will be built next fall.—Charles H. Wheeler, architect, invites tenders until the 10th inst. for remodelling Cauchon block on Main st. Separate or bulk tenders will be received.—In the Provincial Legislature a resolution has been passed granting aid to the Lake Dauphin Railway. The proposed line will start at Portage la Prairie and extend about 150 miles north westward.—Plans are being prepared by Chas. H. Wheeler, architect, for a solid brick and stone residence for P. Burnett, to be erected on Notre Dame avenue west.—The city engineer has been instructed to prepare plans for a bridge over the Canadian Pacific railway tracks at Salter street.—The contract will be let about the middle of the present month for the proposed improvements to St. Mary's church, plans for which have been prepared by Samuel Hooper.

TORONTO, ONT.—The Property Committee of the School Board will ask for $18,000 to cover the cost of repairs, alterations and improvements to buildings.—At a recent meeting of the ratepayers of school section No. 20, York county, in which is situated the village of Norway, it was decided to appoint a committee consisting of the trustees and Mr. J. W. Miller, to get alternative estimates on the cost of enlarging the present building, and of erecting an entirely new building. The report of the committee will be presented about the end of March.—The Fire, Water and Light Committee recently discussed the erection of a new central fire hall on Bay street. It is not probable, however, that funds for its erection will be forthcoming.—McKendry & Co. are making preparations to enlarge their dry goods store by the addition of the store to the north adjoining.—Aldermam Boustead has stated that the six-foot wooden conduit could be placed in proper repair, at an outlay of $20,000.—By the will of the late H. A. Massey the following donations are made for the erection of new buildings: $50,000 for the erection of a suitable boarding hall and home for lady students at Victoria college, Toronto; $50,000 for a new building at the Weslayan Theological college, Montreal; $100,000 to the Methodist church for erecting a Deaconesses' home, training school and hospital on the grounds of the Metropolitan church, Toronto, or at such other place in Toronto as the executors may approve of; 50,000 to the American University, Washington, D. C., to erect a building to represent Canadian Methodists in that university.—A deputation last week interviwed the Mayor in connection with the proposed monument to the memory of Governor Simcoe, the founder of this province. It was stated that the cost of the statue would be about $20,000.—A communication has been received by the York County Council from J. Whitney & Son, on behalf of a Chicago client, asking for a sewer extension from Albert street to Mackenzie ave. It is understood an oil refinery is proposed to be erected, to cost $37,000.—The report of Mr. James Mansergh, C. E., on the question of providing an ample water supply for the city of Toronto, has been received. Mr. Mansergh recommends that the supply be taken from Lake Ontario as at present, by improving the pumping system. The cost of the improvements is estimated at $5,435,312, made up as follows: tunnel under bay and pipe across Island, $486,000; subsiding reservoir, $110,000; filter beds, $2,055,000; pumping plant to filters, $110,000; tramway across island, $15,000; new pumping stations and engines $450,000; 36-inch main from Bathurst and College to Rosehill reservoir, $135,500; 36-inch main, Eglinton reservoir to Rosehill reservoir, $89,250; 20-inch main from 36-inch main to high level pumping station, $27,000; 24-inch main, high level station to Eglinton reservoir $108,000; 36-inch main, pumping station to Rosehill reservoir, $680,000; 24-inch main, Eglinton reservor, to high level district, $108,000; 24-inch main, Rosehill to Eglinton, $320,000, contingencies and engineering supervision, $741,562.—The Building and Sites Committee of the Separate School Board will recommend at the next meeting that two brick schools be erected, at a cost not exceeding $2,000 each, one on Sackville street, and the other on Bathurst street.—A building permit has been granted to Jethro Worden, for a 3 story and basement brick hotel, s. w. cor. Adelaide and Johnson streets, cost $9,000.

FIRES.

The residence of Mrs. Lafortune at 1909 St. Catharine street, Montreal, was destroyed by fire last week. Loss, $4,000.—The Chemical Laboratory of the Ontario Agricultural College, Guelph, Ont., was damaged by fire on the 26th ult. Loss on building $7,500, on apparatus, $1,500. No insurance. It is probable that a sum for rebuilding the college will be placed in the supplementary estimates.—The residence of George Elrick on Carey Road, Victoria, B. C., has been burned. Loss, $3,000. Insurance $1,000.—Henning's block at New Westminster, B. C., which was recently burned, was insured for $7,500.—J. W. Drake's furniture factory at Windsor, Ont., was consumed by fire on the 25th ult. Loss $3,000; insurance $1,500.—A building at Halifax, N. S., owned by George T. Henry, has been damaged by fire to the extent of $2,500.—A number of buildings at Burk's Falls, Ont., have been destroyed by fire. Among the losers are R. H. Manning, Wm. Wilson, Samuel Cross and Mrs. D. Wilson.—The furniture and musical show rooms of Gordon & Keith, at Halifax, N. S., were completely consumed by fire on Monday last. It was a six-storey building. The loss on the building amounts to $7,000, partially covered by insurance.—The premises of Parrish & Lindsay, grain dealers, Brandon, Man., have been damaged to the extent of $5,000.—W. H. Berkinshaw's frame dwelling at Trenton,

Ont., has been burned.—The Dixon house, with hall and stables, at Brucefield, Ont., owned by Wm. Dixon, were burned on Tuesday last. Loss partially covered by insurance.—A four-story building on Hollis street, Halifax, N. S., owned by the Queen's Hotel Company, was recently damaged by fire to the extent of $5,000. Insurance, $4,000.

CONTRACTS AWARDED.

KINGSTON, ONT.—It is probable that a local firm will secure the heating contract for the new Frontenac school.

CORNWALL, ONT.—The debentures recently offered for sale were purchased by R. Wilson Smith, of Montreal, at par.

HAWKESBURY, ONT.—A contract for a Roman Catholic church, to cost $30,000, has been given to Mr. Fauteux, of Montreal.

HALIFAX, N. S.—The Board of Fire Commissioners will recommend the acceptance of the tender of M. E. Keefe for the erection of a new engine house. Contract price, $7,000.

QUEBEC, QUE.—The judges have decided to recommend to the Champlain Monument Committee the acceptance of the design sent in by Messrs. Paul Chevre and Le Cardonell, French artists.

TORONTO, ONT.—The tender of Northey and Co., for a duplex compound condensing pumping engine for the Island water works system, has been recommended for acceptance. Contract price, $2,260.

HUNTINGDON, QUE.—Tenders for the construction of two abutments, wing walls and approaches for the steel bridge across Trout River were received as follows: Joseph Tallon, $1,090; John Elder, jr., $1,232. The former has been accepted.

ST. CATHARINES, ONT.—The Welland Vale Manufacturing Co. propose to erect a bicycle factory about 66 x 106 feet in size, to cost about $8,000. They have let the contract for mason work to S. Boyd, and for painting and glazing to Geo. Wilson.

QUEBEC, QUE.—The North Shore Turnpike Trust Company have awarded a contract for a bridge to replace that known as Scotts bridge, to B. Leclerc, of this city, and A. Rosseau, of Montreal. It is to be of iron, 170 feet long, and will cost $8,000.

MONTREAL, QUE.—Arthur J. Cook, architect, has awarded contracts for a house at Westmount for Archibald McGowan as follows: Masonry and brickwork, A. Charette: plumbing and heating, J. Creed & Son; plastering, H. Contant; painting, H. O'Brien. Other contracts not let.

OTTAWA, ONT—Joseph Bourque, of Hull, has been awarded the contract for building the wing of the new reformatory at Alexandria. Amount of tender, $95,000. Messrs. Viau & Lachance were the next lowest tenderers, at $117,000. The highest tender was $180,000.—Tenders for annual supplies for the Board of Works have been awarded as follows: cedars, F. H. Cluff; plank, D. Storey; hardware, McDougal & Cuzler; sewer pipes, McKinley & Northwood.—Contracts for erecting a new store for Messrs. Orme & Sons have been let as follows: Masonry and brickwork, Holbrook & Sutherland, carpentry, T. Hodgson; plastering, Campbell & Sutherland; steam fitting, Butterworth & Co.—Tenders for erecting a new store for Mr. Stevens have been accepted as follows. Masonry and brick work, Holbrook & Sutherland; carpentry, T. Shaw; plastering, Campbell & Sutherland; steam fitting, McKinley & Northwood.

NEW COMPANIES.

MONTREAL, QUE.—Beaver Bag Company, seeking incorporation; capital, $100,000. Applicants, Edward Kirk Greene, John Leckie, Charles Allen Smart, John Edgar and Eben McAdam.

VANKLEEK HILL, ONT.—Temiscamingue Lithographic Stone Mining Co; capital, $100,000. Officers, Dr. R. P. Pattee, president; W. S. Mooney, vice-president; Donald McInnes, secretary-treasurer.

VANCOUVER B. C.—Union Logging Co., seeking incorporation; capital, $15,000. Objects, general lumbering. Promoters, Daniel McIntyre and Fred'k Daniel McIntyre, of Vancouver, and Geo. E. Atkinson, of the State of Washington. French Creek Gold Mining Co.; capital, $200,000. Provincial trustees, D. M. Linnard, Rossland; W. G. Johnson and D. G. Marshall, Vancouver.

VICTORIA, B. C.—Anacortas Packing Co., granted incorporation; capital $30,000. Promoters, R. V. Winch, Vancouver; J. H. Todd, Victoria; John H. Walker, Ilwaco, Wash.; Daniel Cook, Eburne; Arthur Ward, David Miller and C. F. Todd, Victoria.—Nest Egg Mining Co., applying for incorporation; capital $500,000. *Objects, general mining.* Promoters, Pat Aloysius O'Farrell, of Spokane; A. B. Erskine and Geo. Alan Kirk, of Victoria.

SOME EXPERIMENTS WITH MORTARS.

We do not often write about mortars although bricks and mortar invariably go together, but in the face of the attention which has during the past few months been given to the subject by our foreign contemporaries, we must needs step aside to consider some rather illuminating experiments which have just been made.

Builders are a class of people whom we naturally have to conciliate. They are usually most worthy men, but possessed with various prejudices, whilst their commercialism is admirable, however inconvenient we may sometimes find it. Now, it is a common belief amongst builders, especially amongst brick layers and foremen, that it is much more advantageous *to mix lime mortar some days before* it is wanted, rather than to mix it immediately before the bricks have to be laid.

To test this popular superstition—if we may be forgiven the expression—samples of mortar have recently been taken on successive days from two separate heaps of larger size. Small cubes of bricks were molded from these samples, and set aside for a definite period of weeks, and then broken, in order to estimate their tensile strength.

The following were the results:—

Sample.	Days in heap after mixing.	Days exposed to air as a small brick.	Average breaking stress in lbs. per sq. in.
Mortar No. 1	3	50	34.6
" "	4	49	38.6
" "	6	48	38.1
" "	7	46	39.3
Mortar No. 2 .	4	48	36.0
"	5	47	38.0
" "	6	46	41.2
" "	6	45	41.5

The amount of calcium silicate formed was found to be exceedingly small, even after very long intervals of time.

Another notion that is very common amongst those who have to deal with the building of bricks into brickwork is that sugar and blood are very good things to mix with the mortars especially with hydraulic mortars. Consequently, experiments were undertaken to test these views.

Hydraulic mortar tempered with sugar and water, at the rate of half a pound of sugar to the gallon, was found to be considerably stronger than the same mortar tempered with water alone. This was found to be true only if the mortar were allowed to harden exposed freely to the atmosphere. If the mortar were used for subsquares brickwork, no advantage was found to follow upon making the extra expenditure and taking the extra trouble *with sugar.*

The same mortar was also tempered with bullock's blood, diluted with one third of its volume of water. The mortar was then molded in a brick mold, and was found to set somewhat more quickly. It also showed a considerable increase in strength, both when exposed to the air as well as when laid under water.

Here are some experimental data.—

	lbs. per sq. in.
1. Tempered with water alone.....	63.00
2. " " sugar solution, and exposed to water during 38 days...	62.75
3. " " sugar solution, and exposed to air during 38 days. .	65.4
4. " " diluted blood, and exposed to water during 37 days...	68.3
5. " " diluted blood, and exposed to air during 37 days ..	69.8

So it seems there is some truth in these old notions; and those who hold them will now be able to give scientific reasons for their faith.—British Clay Worker.

ONTARIO LAND SURVEYORS.

The fourth annual meeting of the Association of Ontario Land Surveyors opened in the Parliament Buildings, Toronto, on the 25th of February. Mr. M. Gaviller, Collingwood, occupied the chair, and Mr. A. J. Van Nostrand, Toronto, acted as secretary.

Among those present were. Messrs. G. B. Kirkpatrick, K. Gamble, A. J. Van Nostrand, H. W. Selby, G. B. Abrey, T. B. Speight, R. T. Johnson, V. Sankey, R. P. Fairburn, J. F. Whitson, C. Laird, Toronto; H. DeR. Sewell, Port Arthur; A. Niven, Haliburton; George Ross, Welland; J. W. Tyrrell, Hamilton; H. J. Bowman, Berlin; J. Warren, Walkerton; Jas. Dickson, Fenelon Falls; C. E. Fitton, Orillia; E. Stewart, Collingwood; M. J. Butler, Napanee; Jos. DeGurse, Windsor.

Mr. Sankey read the report of the Committee on Publications, and Mr. Gamble the report of the Committee on Biography.

The annual address was delivered by the president, Mr. Gaviller, of Collingwood. He referred to the success that had attended the society during the past year, in membership, finance and activity, and to the excellent work done by the committees. The drainage laws were now in such shape as to be easy of interpretation. The matter of a topographical survey of the province was receiving attention, and the desirability of such a work was becoming apparent. It was also, he thought, advisable to appoint a committee to compile legal cases and decisions affecting surveyors.

Mr. J. De Gurse, of Windsor, read a paper on "Concrete in Bridge Foundations."

The report of the Committee on Standard Measures was presented.

At the evening session papers were read by T. Harry Jones, of Brantford, on "The Maintenance of a Separate Sewerage System," M. J. Butler, Napanee, on "Some Notes on Concrete and its Application to Various Works," H. J. Bowman, Berlin, on "Road Metal," and others.

The second day's proceedings were held in the Canadian Institute, and consisted of the presentation of reports and the reading of various papers, among which were the following: "The Ditches and Water Courses Act of 1894," by B. J. Saunders, O. L. S., C E., Brockville; "Sectional Surveys," by P. S. Gibson, O. L. S., C. E., Willowdale; "Crown Surveys," by James Dickson, O. L. S., Fenelon Falls, A Road or not a Road," by M. Gaviller, O. L. S., Collingwood. In the evening the association held their annual dinner at McConkey's.

Several papers were also presented on the third day

In the nominations of officers, Mr Willis Chipman, O. L. S., C. E., Toronto, was elected president; Mr. T. H. Jones, O. L. S., Brantford, vice-president, while Mr. A. J. Van Nostrand was re-elected secretary treasurer. Messrs. George Ross, O. L. S., Welland, and A. P. Walker, O. L. S., C. E., of Toronto, were appointed auditors. These were elected by acclamation.

GLASS IN IMITATION OF WOOD.

Recently a patent was granted for an ingenious process for making glass veneers for interior decoration. The invention relates primarily to the production of ornamental glass, which may be either semi-transparent or opaque, and is made to represent highly polished wood of any description. When used as veneering it is particularly adapted for vestibule and other doors; the exterior of the glass having the appearance of highly polished wood, while in the interior of the house it shows semi-transparent.

The process by which the effect is produced is to cloud a sheet of plain or ground glass on the reverse side with a liquid dye of a proper color to represent any desired wood. The dye is applied by means of a sponge, which is so manipulated as to bring out the semblance of the grain of the wood on the surface of the glass. A badger brush is used to soften the shading. The glass is then covered with varnish. This leaves the grain clear, distinct and "fast," without the necessity of using any gelatinous substance, which would render it liable to shrink into "crinkles," thus spoiling the effect. To complete the operation the glass is slightly heated, and the various shades required for the particular wood to be imitated are caused to flow over it by means of a syringe.

The merging of the shadings into each other is prevented by slightly heating the glass. The whole is made semi-transparent by another coat of varnish, which preserves and protects the dyes. The exterior surface then presents the appearance of a finely polished wood finish.

According to some of the English architectural papers an investigation of the means to be adopted for more efficiently warming school buildings has been concluded by a special sub-committee of the London School Board. This committee after consulting the architect and heating engineer are of the opinion that 10 superficial feet of warming space for every 1000 cubic feet of area should be required as the standard up to which it is desirable to work, it being understood that this standard should be raised 12 feet in the case of the top floor, and also in the case of those class rooms situated furthest from the furnace and subjected to a greater amount of cooling surface.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

MUNICIPAL DEPARTMENT

SEWAGE DISPOSAL.

The city of London, Ontario, appears to be in earnest with regard to its sewage disposal. A few days ago Doctor Cl. T. Campbell, the Chairman of the Board of Health, laid before the members, among others, a report by Mr. C. G. Horetzky, Sanitary Engineer of the Provincial Government, upon that most important subject.

Several schemes were reviewed, but the simplest and most effective, and that most likely to be carried out in the end, appears to be Mr. Horetzky's, who recommends the utilization of the Cove lands for filtration purposes. Those lands can be reached by three different gravitation routes. The whole subject seems to have been thoroughly investigated, and the report, besides giving a succinct description of some important works in the States for purposes of comparison, lucidly sets forth the work necessary for a complete system of filtration, and gives details of every item of expenditure.

The cost of the disposal works alone, is estimated at $61,000, exclusive of sewerage.

In order to preclude the possibility of mistakes in a work involving such a considerable outlay, Mr. Horetzky advised that an engineer of the Massachusetts Board of Health should be called in to report further upon the scheme. This proposal is endorsed by Mr. Campbell. In this connection it may be stated that nearly all the sewage disposal works attached to different provincial institutions have been designed and carried out by Mr. Horetzky, who, during the past few years, has made a study of this important branch of engineering, and has visited and closely examined the best installations of the kind in the United States.

The finest plant yet constructed by the Provincial Government from Mr. Horetzky's plans, and which has, during the summer of 1895, been completed by him, is that of the Rockwood Hospital at Kingston. This is used solely for the chemical treatment of sewage, land disposal being in this case out of the question. The works, exclusive of the sewerage, comprise mixing apparatus for the application of the chemicals, tanks for the sedimentation of the sewage, and rapid artificial filters for the further purification of the sewage effluent which leaves the filters in as clear a state as the lake water. The most modern appliances are used, and the disposal of the sewage sludge, which has been a problem in nearly all works of the kind in Europe and America, has been successfully solved in these works, by an automatic contrivance devised by Mr. Horetzky.

Several kinds of chemical treatment have been tried here during the past summer, the Herring brine process, the ferozone, and at present the simple alum treatment, of 7 grains sulphate of alumina to every gallon of sewage.

The superintendent of the Hospital, Doctor Clark, speaks in the highest terms of the entire success of this latest effort on the part of the local Government in the inauguration of what, it is to be hoped, may result in a general system of sanitation throughout the province.

LOCATING A PUBLIC WATER-SUPPLY.

By Daniel W. Mead.
(Concluded.)

The stream-flow is largely derived from the ground water, which flows toward the river with a surface slope more or less rapid in accordance with the porosity of the water-bearing strata in which it occurs. It is seldom that the water flows from the river to the land, even in extreme high waters; for the rivers, especially in high waters, carry much silt, and an outward current soon stops all pores by filling them and makes a practically impervious bed. This is the cause of failure in filter galleries which depend on the seepage of rivers for their supply. The streams sometimes flow through beds of sand and gravel, the visible stream being but a portion of the whole, including the invisible one which flows around and under it. This phenomenon is not largely developed in this area in any one stream, but is locally developed on most of the streams. The possibility of utilizing such ground waters by large wells, drive wells, or filter galleries will be readily understood. These beds of sand and gravel are sometimes continuous for great distances, and, being surrounded by comparatively impervious clay, they exist in what may be called underground reservoirs or lakes, or, as broad underground streams, flow through the gravel and sand toward their outlet in some distant watercourse. They derive their supply directly from the rainfall on their watershed, the extent and character of which is usually difficult to determine, though on these features the availability of such sources for large water supplies depends.

Surface and ground waters are liable to be contaminated by any organic filth on their watersheds. These waters are seriously affected by the settlement of the country. In many places where the population is still small and scattered these waters may be pure and satisfactory for domestic use. But along the streams where the larger cities are situated and in all thickly inhabited localities the increase of population has rendered them unfit for use. The streams are now often used as the dumping-ground of waste materials, both liquid and solid, and, although stringent sanitary laws may in the main prevent gross pollution of these watercourses, it can never keep from them all of the liquid and solid accompaniments of a dense population. Waters once receiving organic matters retain them indefinitely, for, although the comparative amounts may be lessened by dilution, deposition, and bacteriological agencies, there is not a river long enough to entirely purify itself during its flow from source to sea, when once thoroughly contaminated.

The ground waters may, as a rule, be regarded as less liable to gross pollution than the open streams of the country, as they do not offer in such an unobstructed manner the temptation of the means of rapid disposal of waste. And, when only slightly polluted, the filtering qualities of the soil often afford a means of clarification, where the matter causing pollution is not too concentrated or constant in supply. Such sources of pollution as vaults and leaching cesspools, however, often overtax the purifying powers of the soil, and cause a local pollution of the ground water even more dangerous than that of the polluted streams.

The fact of the limited occurrence of water in all strata has been already noted; hence, if the amount of water needed is small, the drill will find it in almost any deposit in amounts proportional to the porosity of the stratum or the occurrence of cracks and fissures in it. Outside of this general consideration, several deposits are especially important for their water-bearing qualities. Of these, the Potsdam sandstone is the most important. It has an outcrop of about fourteen thousand square miles, affording an ample watershed. From this source are derived numerous artesian and deep wells, which have been developed throughout the extent of the outcrop. The St. Peter sandstone is next in importance in this area as a source of water. Its outcrop extends over about three thousand square miles, and in a large part of this area it lies above the Potsdam and is first encountered by the drill. Its elevation is, however, less than that of the Potsdam, and hence its waters have not usually as great a head, and consequently do not as often furnish flowing wells.

The drift deposits are sometimes so extended that they may produce all phenomena observable in the lower strata, such as artesian flows and copious springs at numerous points within this area. Many of the other deposits of this area may be made available as sources of water-supply by driving infiltration tunnels through their mass, the tunnels being of sufficient extent to produce the necessary amount of water.

The deep and artesian waters often flow through miles of material and are effectually filtered from all organic contamination, and, if unpolluted at their outlet, are organically pure. Wells drawing their water from such sources offer a supply second to none in organic purity and freedom from all risk of contamination. While the deep waters are organically pure, they are very likely to contain much larger percentages of inorganic salts than surface waters.

Enough has been said to show that, in searching for the most favorable water-supply, it is important that local conditions be ascertained and local geology and topography understood, in order that all possible sources may be known and the probable cost of obtaining water from each and the probable quality and quantity of the same may be judged.

PERSONAL.

Mr. E. Berryman, C. E., of Sherbrooke, Que., has resigned his position as Chief Engineer of the Quebec Central railway, and will take up his residence in Montreal.

Mr. A. W. Campbell, C. E., of St. Thomas, who has been prominently associated with the Good Roads movement since its inauguration, has been appointed to the position of Provincial Highway Commissioner by the Ontario Government. The office has recently been created, the salary being $1,500 per year.

Mr. George Gould, of Walkerton, Ont., who for many years held the position of clerk of the county of Bruce, but who was recently compelled to resign owing to ill-health, died at his home on the 23rd of February. He had reached the age of 76 years, being one of the pioneers of that district. In his death the county loses an efficient servant and respected resident.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

Prices of Building Materials.

CONDITION OF THE MARKET.

TORONTO: In general hardware, galvanized iron, and iron pipe trade has shown a little more life during the past week. Some good orders for glass have also been placed. Cement is fairly good, at unchanged quotations. A slight advance in cut nails has taken place.

MONTREAL: The heavy metal trade occupies the firmest position among builders' supplies. The cement market is quiet, but a few local orders for spring trade are being placed. Firebricks continue firm at $17 to $21 per thousand. Glass presents no new features, and orders are very limited.

LUMBER.

CAR OR CARGO LOTS.

	Toronto.		Montreal	
	$	$	$	$
1¼ to 2 clear picks. Am ins...	13 00@	16 00	40 00@	45 00
1¼ to 2 three uppers, Am ins.		37 00	40 00	45 00
1¼ to 2, pickings, Am ins....		26 00	27 00	30 00
1 inch clear.....			40 00	45 00
1 x 10 and 12 dressing and 1 better.....	20 00	22 00	18 00	20
1 x 10 and 12 mill run.....	16 00	17 00		19 00
1 x 10 and 12 dressing.....	20 00	22 00		18 00
1 x 10 and 12 common.....	13 00	14 00	8 00	10 00
Spruce culls.....	10 00	11 00	8 00	10 00
1 x 10 and 12culls.....	9 00	10 00		9 00
1 inch clear and picks.....	28 00	3200	35 00	40 00
1 inch dressing and better....	20 00	22 00	18 00	20 00
1 inch siding, mill run.....	14 00	15 00	12 00	16 00
1 inch siding, common.....	12 00	13 00	10 00	13 00
1 inch siding, ship culls.....	11 00	12 00	10 00	11 00
1 inch siding, mill culls	9 00	10 00	8 00	9 00
Cull scantling.....	8 00	9 00	8 00	9 00
1¼ and thicker cutting up plank.....	24 00	26 00	22 00	25 00
1 inch strips, 4 in to 8 in. mill run.....	14 00	15 00	14 00	15 00
inch strips, common.....	11 00	12 00	10 00	12 00
1¼ inch flooring.....	16 00	17 00	12 00	15 00
1¼ inch flooring.....	16 00	17 00	12 00	15 00
XXX shingles, sawn, per M 16 in.....	2 40	2 50	2 60	2 60
XX shingles, sawn.....	1 40	1 50	1 60	1 70
Lath.....	2 00			1 50

VALUED QUOTATIONS.

Mill cull boards and scantling		10 00	10 00	12 00
Shipping cull boards, promiscuous widths.....		13 00		13 00
Shipping cull boards, stocks		16 00		16 00
Hemlock scantling and joist up to 16 ft.....	12 00	12 00		10 00
Hemlock scantling and joist up to 18 ft.....	12 00	3 00	12 00	3 00
Hemlock scantling and joist up to 20 ft.....	13 00	14 00	13 00	14 00
Cedar for block paving, per cord.....		5 00		5 00
Cedar for kerbing, 4 x 14, per M.....		14 00		14 00
Scantling and joist, up to 16 ft		14 00		14 00
" " 8 ft		15 00		16 00
" " 20 ft		16 00		16 00
Scantling and joist, up to 22 ft		17 00		17 00
" " 24 ft		19 00		19 00
" " 26 ft		20 00		21 00
" " 26 ft		22 00		23 00
" " 30 ft		24 00		25 00
" " 32 ft		27 00		27 00
" " 34		29 50		29 50
" " 36 ft		31 00		31 00
" " 38 ft		33 00		33 00
" " 44 ft		34 00		36 00
Cutting up planks, 1¼ and thicker, dry.....	25 00	28 00	25 00	30 00

B. M.

1⅜ in. flooring, dressed, F M.	26 00	30 00	28 00	31 00
1½ inch flooring, rough, B M.	18 00	22 00	18 00	22 00
1¼ " dressed, F M.	25 00	28 00	27 00	30 00
1¼ " undressed, B M.	18 00	19 00	18 00	19 00
1¼ " dressed.....	18 00	20 00	18 00	22 00
1¼ " undressed.....	12 00	15 00	12 00	15 00
Beaded sheeting, dressed....	20 00	35 00	22 00	35 00
Clapboarding, dressed.....		12 00	8 00	12 00
XXX sawn shingles, per M 18 in.....	2 60	2 70		3 00
Sawnlath.....	2 50	2 60	2 50	2 60
Cedar.....		2 90		2 90
Red oak.....	30 00	40 00	30 00	40 00
White.....	37 00	45 00	35 00	55 00
Basswood, No. 1 and 2.....	28 00	30 00	18 00	20 00
Cherry, No. 1 and 2.....	70 00	90 00	70 00	80 00
White ash, No. 1 and 2.....	24 00	35 00	30 00	35 00
Black Ash, No. 1 and 2.....	20 00	30 00	18 00	30 00
Dressing stocks.....	16 00	22 00	16 00	22 00
Picks, American inspection..		30 00		40 00
Three uppers, Am. inspection		50 00		50 00

BRICK—₱ M

Common Walling.....		6 50		6 00
Good Facing.....		8 00		8 50
Sewer.....	8 50	8 00	8 50	9 00
Pressed Brick, Per M:				
Red, No. 1, f.o.b. Beamsville		16 00		
" " 2.....		14 00		
" " 3.....		9 00		
Buff.....		21 00		
Brown.....		24 00		
Roman Red.....		30 00		
" Buff.....		35 00		
" Brown.....		40 00		
Sewer.....		7 50		
Hard Building.....		6 00		

	Toronto.		Montreal.	
Roof Tiles.....		22 00		
Hip Tile.....(each)		20		
Ridge Tile..... "		60		
1st quality, f.o.b. at Port Credit		14 00		18 00
2nd " " " "		12 00		15 00
3rd " " " "		8 00		12 00
Hard building brick.....		6 50		
Ornamental, per 100.....	1 00	10 00		
F. O. B. DON VALLEY.				
Red A.....		18 00		24 00
Red B.....		16 00		20 00
Red C.....		13 00		16 00
Trojan and Corinthian.....		21 0		28 00
Pompeiian.....		22 00		29 00
Athenian and Egyptian.....		25 0		31 00
Tyrian.....		35 00		41 00
Sicilian.....		40 00		45 00
Roman.....		35 00		40 00
Carthaginian.....		40 00		45 00
Ornamental.....	30 00	100 00	30 00	100 00
Common inside.....		6 00		
Hard sewers.....		7 50		
Vitrified pavers		16 00		22 00

SAND.

Per Load of 1½ Cubic Yards		1 25		1 25

STONE.

Common Rubble, per toise, delivered.....		14 00		14 00
Large flat Rubble, per toise, delivered.....		18 00		18 00
Foundation Blocks, per c. ft.		50		50
Kent Freestone Quarries Moncton, N. B., per cu ft., f.o.b..		1 00		
River John, N. S., brown Freestone, per cu. ft., f.o.b.		95		
Ballochmyle	80	90	65	75
New York Blue Stone.....				1 05
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 9 in., per ft.				25
Moat Freestone.....			60	70
Thomson's Gatelawbridge, cu. ft.			75	80
Credit Valley Rubble, per car of 15 tons, at quarry		8 00		
Credit Valley Brown Coursing, up to 10 inch, per sup. yard, at quarry.....		1 75		3 25
Credit Valley Brown Dimension, per cu. ft. at quarry..		60		75
Credit Valley Grey Coursing, per superficial yard.....	1 50	2 00		2 15
Credit Valley Grey Dimension, per cubic foot.....		60		75
Clark's N. B. Brown Stone, per cubic foot, f.o.b.....		1 15		1 00
Brown Free Stone, Woodpoint, Sackville, N.B., per cub. ft.....		1 15		1 00
Madoc Rubble, delivered, per toise.....	14 00	14 50	14 00	14 50
Madoc dimension floating, f. o. b. Toronto, per cubic ft.	30	32		

OHIO FREESTONE, FROM THE GRAFTON STONE CO.'S QUARRIES.

No. 1 Buff Promiscuous.....		70		85
No. 1 Buff Dimension		75		90
No. 1 Blue Promiscuous.....		55		70
No. 1 Blue Dimension.....		60		75
Sawed Ashlar, No. 1 Buff, any thickness, per cub. ft..		90		1 05
Sawed Ashlar, No. 1 Blue, any thickness, per cub. ft..		75		90
Sawed Flagging, per sq. ft., for each inch in thickness.		06½		07½

Above prices cover cost freight and duty paid. For small lots add 5 to 10 cents per cubic foot.

Quebec and Vermont rough granite for building purposes, per c.ft. f.o.b. quarry	33	1 50		
For ornamental work, cu. ft.	35	2 0		
Granite paving blocks, 8 in. to 12 in. x 6 in. x 4½ in., per M		50 00		
Granite curbing stone, 6 in. x 20 in., per lineal foot.....		70		

SLATE.

Roofing (₱ *square*).				
" red... ...		18 00		20 00
" purple..		00		10 00
" unfading green		9 00		6 00
" black		8 00		5 50
Terra Cotta Tile, per sq....		25 00		
Ornamental Black Slate Roofing.....		8 50		

PAINTS. (*In oil, ₱ lb.*

White lead, Can., per 100 lbs.	6 25	5 50	5 50	6 00
" zinc, Can., " "	6 50	7 50	6 50	7 50
Red lead, Eng.....	4 00	5 00	4 50	5 00
" venetian, per 100 lbs.....	1 60	1 75	1 00	1 75
" vermillion.....	90	1 00	90	1 00
" Indian, Eng.....	10	12	10	12
Yellow ochre.....	5	10	3	5
Yellow chrome.....	15	20	15	20
Green, chrome.....	7	12	7	12
" Paris.....	20	25	14	20
Black lamp.....	25	25	12	25
Blue, ultramarine.....	15	20	12	18
Oil, linseed, raw, ₱ *Imp. gal.*	54	59	58	59
" " boiled "	57	63	62	63
" " refined, "	78	85	75	75
Putty.....	2¾	2½	2¾	2¾
Whiting, dry, per 100 lbs.....	75	1 00	60	75
Paris white, Eng., dry.....	90	1 25	90	1 00
Litharge, Eng.....	4	5	4 50	5 00
Sienna, burnt.....	10	15	12	15
Umber, "	8½	12	12	15

CEMENT, LIME, etc.

Portland Cements.—				
German, per bbl.....		3 25	2 55	2 65
London "	2 50	2 75	1 92	2 05
Newcastle "		2 50	1 85	1 95
Belgian, Josson, artificial..	3 40	2 50	2 65	2 75
English, artifical, per bbl..	2 60	2 90	2 55	2 65
Portland Cements.—				
Belgian, natural, per bbl..	2 30	2 40	1 70	1 85
Canadian " ..	2 50	2 50	1 80	1 85
Roman " ..			2 00	2 25
Parian " ..	4 50	4 75	5 00	5 75
Superfine " ..	6 50	7 00	8 00	9 00
Hydraulic Cements.—				
Thorold, per bbl.		1 00	1 25	1 50
Queenston, "		1 0	1 50	1 60
Napanee, "		1 5		1 50
Hull, "		1		1 50
Ontario, "		1 25		
Keene's Coarse "Whites"....	4 50	4 75	4 50	4 75
Fire Bricks, Newcastle, per M	27 00	35 00	15 00	21 00
" Scotch "	27 00	3 00	19 00	21 00
Lime, Per Barrel, Grey.....		40		
" " White.....		50		
Plaster, Calcined, N. B.....		2 00		
" " N. S.....		2 00	2 50	
Hair, Plasterers', per bag...	80	1 00		

HARDWARE.

Cut nails, 5cd & 6cd, per keg		2 50		2 10
Steel " " " "		2 6		2 35

CUT NAILS, FENCE AND CUT SPIKES.

40d, hot cut, per 10 lbs ...		2 55		2 15
30d, " " " ..		2 60		2 20
20d, 16d and 12d, hot cut, per 100 lbs.....		2 65		2 25
10d, hot cut, per 100 lbs.....		2 70		2 30
8d, 9d, " "		2 75		2 35
6d, 7d, " "		2 90		2 50
4d to 5d, " "		3 10		2 70
3d, " "		3 30		3 10
2d, " "		4 00		3 60
4d to 5d cold cut, not polished *or blued, per 100 lbs*.. ...		3 00		2 60
3d to 5d cold cut, not polished or blued, per 100 lbs.....		3 40		3 10

FINE BLUED NAILS.

3d, per 100 lbs.....		4 00		3 60
2d, " "		4 50		4 10

CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.

12d to 30d, per 100 lbs.....		2 50		2 60
10d, " "		2 60		2 70
8d and 9d, " "		2 95		2 80
6d and 7d, " "		3 10		3 05
4d to 5d, " "		3 30		3 20
3d, " "		3 70		3 60

FINISHING NAILS.

3 inch, per 100 lbs..		3 10		2 95
2½ to 2¾ " " "		3 25		3 10
2 to 2¼ " " "		3 40		3 25
1¾ to 1¾ " " "		3 60		3 45
1¼ " " "		4 00		3 85
1 " " "		4 50		4 35

SLATING NAILS.

5d, per 100 lbs.....		3 35		2 95
4d, " "		3 35		2 95
3d, " "		3 75		3 35
2d, " "		4 25		3 85

COMMON BARREL NAILS.

1 inch, per 100 lbs..		3 75		3 35
⅞ " " "		4 25		3 60
¾ " " "		4 75		4 35

CLINCH NAILS.

3 inch, per 100 lbs.		3 35		2 95
2½ and 2¾ " " "		3 50		3 10
2 and 2¼ " " "		3 65		3 25
1½ and 1¾ " " "		3 85		3 45
1¼ " " "		4 50		4 10
1 " " "		5 00		4 60

SHARP AND FLAT PRESSED NAILS.

3 inch, per 100 lbs.		3 75		3 45
2½ and 2¾ " " "		4 00		3 60
2 and 2¼ " " "		4 20		3 75
1½ and 1¾ " " "		4 40		3 95
1¼ " " "		5 00		4 60
1 " " "		5 50		5 10

STEEL WIRE NAILS.

Steel Wire Nails, 75 % discount from printed list

Iron Pipe:

Iron pipe. ¼ inch, per foot..		6c.	6c.
" " ⅜ " " ..		7	7
" " ½ " " ..		8½	8½
" " ¾ " " ..		12	12
" " 1 " " .		17	17
" " 1¼ " " .		24	24
" " 1½ " " ..		30	30
" " 2 " " ..		43	43

Toronto, 65 per cent. discount.
Montreal, 60 to 65 per cent. discount.

Lead Pipe:

Lead pipe, per lb.....	7c.
Waste pipe, per lb.....	7½

Discount, 30 % off in small lots.

Galvanized Iron:

Adam's—Mar's Best and Queen's Head:			
16 to 24 guage, per lb.....		4½c.	4¾c.
26 guage, "		4¾	5
28 " "		5	5¼
Gordon Crown—			
16 to 24 guage, per lb.....		4¼	4½
26 guage, "		4½	4¾
28 " "		4¾	5

Note.—Cheaper grades about ¼c. per lb. less.

Structural Iron:

Steel Beams, per 100 lbs.....	2 75	2 50
" channels, "	2 85	2 60
" angles, "	2 50	2 30
" tees, "	2 80	2 65
" plates, "	2 55	2 35
Sheared stee bridge plate...		2 35

(Corrected up to March 4th)