are found to outlast the closer grained varieties, on the hypothesis that the air having free access soon coagulates the softer particles of the wood, even the finer pores, rendering them impervious to the decomposing influences causing rot, etc. Then, again, some woods shrink rapidly without checking, in seasoning, closing up these pores, shutting out, as it where, all these disturbing influences, becoming more solid, dense, and non-porous with age ; other woods, on the contrary, do not get much smaller in circumference in drying, but the pores expand to meet the inequalities of seasoning, hence become practically more porous, though the rings may become more dense with age, hence may be considered a short-lived wood.

Generally speaking, however, those woods containing the greatest amount of cellulose, gluten, and those soluble elements, may be considered quick rotters from the simple fact that, as the solvent enters, usually water, making a solution of these fixed elements, fermentation ensues very energetically and rapidly, and fermentation and decomposition really being two names for one process, the results are very apparent. On the other hand, those woods containing the greater proportion of resinous and gummy matter will stand the longest, inasmuch as these elements, not being soluble in water, are not affected by its presence. Hence the moisture goes in and goes out about in the same condition, but of course there are exceptions to all rules.

Since the advent of iron, superseding wood in all large structures, the limit of elasticity becomes an important test. It was not many years ago, however, that the builder was just as careful concerning this property as he now is of the iron he uses in the structures. He wanted to know to what extent the timbers, and joists, and scantling, could be bent by a load, and would come back to their original shape when the loads were removed. This is what the tests to determine elastic limit do tell us, and nothing more.

Speaking of timbers, joists, etc., brings up another question of great importance to builders and producers as well, and that is whether a stick eight by eight inches will carry a heavier load without breaking than two pieces eight by four laid by the side or on top of each other, and which is the strongest method when two pieces are used as suggested. Now if the stick eight by eight inches, no matter how straight or crooked the grain, nor how knotty, if sawed in two—of course allowing for the waste in sawing—are placed alongside of each other, in the same relative position in which they grew, will hardly bear any heavier weight than the original ; but if either piece is changed in position, end for end, side for side, etc., and then placed alongside, the combination will bear twenty-five per cent., at least, more weight than the original stick without breaking : and, moreover, if each of these halves be sawn in twain longitudinally, and treated in the same manner as the halves, the resistance to breaking pressure is correspondingly increased.

The solution of this is extremely simple. Any and every piece of timber, however sound and strong, has its weak places and its strong places. Now, by sawing in two and changing the ends, the weaker places of one half are strengthened by the strong places of the other half, and must possess a more even structure throughout, and the halves being of themselves divided, the tendency to produce an evenly balanced whole is augmented.

This argument can be easily demonstrated by means of some very cross-grained pieces of any timber. Measure the force required to break a piece, split in two, change the ends, and see how much more it will stand ; the breaking tendency of the grain of one place bears upon the non-breaking tendencies of the other, acting as a brace like a cantilever bridge.

TO FIND THE DIAMETER OR CIRCUMFERENCE OF A CIRCLE.—1st. To find the circumference, the diameter being given. *Rule*—As 7 is to 22, so is the diameter to the circumference. *Example*—If the diameter of a circle be 84.5 inches, what is the circumference? As 7 is to 22.0, so is 84.5 to 265.751, the circumference required. 2nd. To find the diameter, the circumference being given. *Rule*—As 22 is to 7, so is the circumference to the diameter.

CONTRACTS OPEN.

CARMAN, MAN.—The Baptists are about to erect a new church.

SHELBURNE, ONT.—Dr. Norton is having plans prepared for a new residence.

GANANOQUE, ONT.—A town hall will be erected, the material to be stone.

INGERSOLL, ONT.—The C. P. R. propose to erect a handsome passenger station here.

VANCOUVER, B. C.—Mr. Hugh Keefer will build a factory for turning granite columns.

MILTON, ONT.—The plans for Knox Church have been finally revised, and tenders will be asked.

CLAYTON, ONT.—A number of improvements will be made this year, including a dock 70 x 30 feet.

ST. THOMAS, ONT.—The water works committee have decided to advertise for the various works required in the extension of the system.

MEAFORD, ONT.—The plans for the High School prepared by Mr. W. R. Graham are about complete, and tenders will be asked for in a few days.

ARNPRIOR. ONT.—Mr. Clarke will erect a fine brick building on Daniel St.—Messrs. McCreary & Whyte are going to build a new sash and door factory.

BRANTFORD, ONT.—The plans for the proposed new drill shed will, it is said, have to be modified, the Government grant not being so liberal as was expected.

PENETANGUISHENE, ONT.—A by-law will be submitted on the 16th of August to provide for the issuing of debentures to the amount of $20,000 for waterworks.

SMITH'S FALLS, ONT.—In the supplementary estimates of the Dominion Government $4,000 has been granted for the purchase of a site for a post office and Custom house.

OTTAWA, ONT.—The members of the newly formed Church of England congregation, consisting of the secessionists from St. George's church, have decided to erect a new church edifice on Elgin street, to be known as Grace church.

WINDSOR, ONT.—The Board of Education have advertised for tenders for the new first ward school ; the following by-laws will be submitted on June 11th $40,000 for water-works, $15,000 for an electric light plant, and $5,000 for market purposes.—The by-law granting $27,000 for school purposes has passed.

HAMILTON, ONT.—The T. H. & B. Railway will probably purchase the old post office building and remodel it to serve the purposes of their head office.—The council has given notice of its intention to construct cedar block roadways on Cameron St., Herkimer St. and Burton St.—The Royal Templars of Temperance will erect a large building with a public hall capable of seating from 800 to 1,000 people.

VICTORIA, B. C —The Board of Trustees of the Pandora St. Methodist Church have decided to build the new church with stone, thus increasing the cost about $10,000. The total cost will be in the neighborhood of $60,000.—Among the building operations contemplated are Y. M. C. A. hall, court house, the Cunningham block, new public library, the city water-works system, and about 150 residences.

LONDON, ONT.—A flagstone pavement will be constructed on Queen's Avenue.—Tenders will be received at the City Engineer's office until May 22nd for calsomining and repairs to plastering at the General Hospital — The council gives notice of its intention to block pave portions of King St., Talbot St., York St., and Queen's Avenue, unless petitions against the work are presented by ratepayers interested.

KINGSTON, ONT.—The Queen street school is to be re-furnished.—The Collegiate Institute Board ask the assistance of the council towards the erection of a new building, estimated to cost about $30,000.—Negotiations are in progress for the purchase of a site for a new Presbyterian church on the corner of Princess and Gordon streets.—A by-law will be submitted to the ratepayers immediately, authorizing the expenditure of about $8,000 in the erection of a fire hall —The School Board has sent one of its members to Toronto and Hamilton for the purpose of enquiring into and reporting upon improved systems of heating.

TORONTO, ONT.—The Property Committee will again recommend to the council that permission be granted McIntyre & Storm to erect an $80,000 hotel in Centre Island as soon as City Surveyor Sankey will have his new plan of the Island ready.—The University authorities will instruct their architect to prepare plans for the proposed new library.—The council will submit a by-law to the people authorizing a grant of $20,000 towards the erection of a girls' industrial school.—Plans will be immediately prepared for a high level bridge across the Don at Queen St.—The following building permits have been granted : Mrs. McCready, pr. 2 story and attic brick dwellings and alterations, John St., N. of Richmond St., cost $4,500 : Mr.