easily calculated with most common types of brackets, with reinforced concrete the eccentricity could only be calculated from considerations of elastic flexure, and the problem was a much more difficult one. There was, however, no longer any excuse for claiming ambiguity since the problem had been analysed very completely in "Reinforced Concrete Design" and numerical examples fully worked out. The author took as an example the case of the outside column of the building, working it out in detail, showing very great increases in stress over the values as ordinarily calculated. If thoughts of eccentricity were banished, either from ignorance or under stress of competition, the actual maximum stress would have been 1,300 lb. per sq. in. It is interesting to note that the outside pillar in good design did not suffer much reduction in size-up through the last three tiers. This was in accordance with the best practice in steel-frame buildings.

In conclusion, Mr. Faber said that without suggesting for a moment that the engineering staffs of several constructional firms were not fully as efficient as many consulting engineers, he did feel that the system of competitive designs and lump sum prices penalized good designing by such firms, and secured the work to those responsible for the most risky design. The only correct system, in his opinion, was for the architect to entrust the design to an engineer who had his confidence and to invite tenders on the design which he prepared. The architect and building owner were then likely to obtain a sound construction and if they used their discretion in the choice of the engineer the work would not cost more than the minimum consistent with safety.

The best constructional firms would be protected by being protected from competition with weak design and bad workmanship. In considering tenders, he held that an engineer should give preference to those firms whose detailing and workmanship he knew he could rely upon. He urged this in the interest of the building owner, knowing as he did the importance of good details and good workmanship.

OIL FROM CARBONACEOUS DEPOSITS.

Interesting data is gradually coming to light in regard to the employment of low temperature for distilling the various products from coal and other carbonaceous substances, and from these it appears that the distillation has been carried out more with the object of obtaining products other than oil. Since, however, oil has come to be one of the most important power producers attention has been directed to distilling carbonaceous substances with the sole purpose of obtaining oil therefrom, and there can be little doubt that this is a line of investigation and working which will occupy the most prominent place in the future.

Damage to the extent of $500,000 was done by fire which broke out on April 18 on the premises of the Alberta Lumber Company at Vancouver, B.C.

It has been announced at Pittsburg that a company has been organized to manufacture ferro-manganese from American ores, capitalized at $12,000,000, and to be located at Dunbar, Pa. Heretofore ferro-manganese has been imported from England and Germany, with the exception of small quantities manufactured by the largest interests for their own use.

The laying of telephone cables across St. John Harbor, N.B., is being planned and the New Brunswick Telephone Company has engineers busy selecting landing places for the cables. It is reported that tenders have been submitted by several companies for the supplying of the cables, and plans and specifications submitted. It is expected the work will be completed by July 1st. According to the engineers, 16 tons of cables will be needed for the work.

PROGRESS ON THE SIMPLON TUNNEL.

It is probable that by the end of the year the Second Simplon tunnel, 12 miles 588 yards in length, will be half completed. It is the longest tunnel in the world and is being constructed in the Alps by the engineers of the Swiss federal railways to cope with the remarkable growth of tourist and goods traffic on the Simplon route. It runs parallel to the existing tunnel, and is being made by an enlargement of the parallel working gallery made by the engineers of the former tunnel. The cost is estimated at $6,925,000.

Apart from the use of explosives for blasting, compressed air is the sole power in use within the workings. The rock drills are operated by air, and the excavated material is drawn away by locomotives driven by air under a pressure of between 180 and 190 atmospheres.

One of the features of this new tunnel, according to a Swiss correspondent of The Engineer, is the adoption for the dry portions of the tunnel of a masonry lining of artificial stone instead of the natural stone hitherto employed in Alpine tunnelling. This artificial stone is composed of cement, limestone, and sandstone, and is being made at the Brigue end of the tunnel. The correspondent suggests that this new departure, which was strongly opposed at first, was influenced by the success with which composition stone and ordinary bricks have been used in England. The work of lining is stated to have been simplified by this new practice.

The nature of the rock at the northern end of the tunnel is stated to necessitate an immediate lining of the excavated portion, and timbering is being freely used to resist the immense pressure. No blasting is permitted during the passage of a train through the original Simplon tunnel, as the distance between the tunnel and the heading is only 26 feet. The risk involved upon the first tunnel is stated to have been estimated at $600,000.

The first Simplon tunnel, it may be remembered, was constructed by the Swiss firm of Brandt, Brandau, and extraordinary precautions were taken for protecting the health and lives of the workmen. The precautions, however, were justified by the results, and a singularly difficult piece of engineering was carried through with a marked absence of illness. The necessity for a parallel gallery for ventilation and drainage purposes made the progress with the original Simplon tunnel less rapid than that now taking place.

The first Alpine tunnel, the Mont Cenis, is seven and a half miles long, and took over 13 years to construct. The St. Gothard, nine and three-quarter miles long, took nine and three-quarter years; the Arlberg, six and a quarter miles long, three years; the Simplon, twelve and a quarter miles long, six and a half years; and the Lötschberg, nine miles long, four years. At the present rate of progress Simplon II. should be completed in about four and a half years.

The following is a statement of the sewers and surface drains laid during 1913 at Vancouver, B.C. :—

	Feet.	Miles.
Ward 1	4,680	.88
Ward 2	4,123	.78
Ward 3	1,336	.25
Ward 4	15,319	2.90
Ward 5	11,585	2.19
Ward 6	38,922	7.37
Ward 7	4,720	.89
Ward 8	6,249	1.18
	86,943	16.46