Composition of Ash.

	No. 1.	No. 2.
Mineral matter insoluble in acid	19.30	17.46
Oxide of iron and alumina....	23.30	20.20
Carbonate of lime	42.50	44.64
Phosphoric acid	0.797	0.604
Potash.....	0.65	0.48

Some few weeks previous to making the above analyses a correspondent who was burning this peat in an open grate submitted a sample of the ash so obtained, the object being to ascertain the fertilizing value of the ash for garden purposes. This ash afforded the following data:—

	Per cent.
Lime*.....	26.55
Phosphoric acid	0.80
Potash.....	0.695

*Equivalent to carbonate of lime, 47.41%.

Analysis of Ash.

SiO_2.....	19.30
Al_2O_3.....	7.78
Fe_2O_3.....	6.22
CaO.....	31.39
MgO.....	14.33
K_2O.....	1.51
P_2O_5.....	1.03
CO_2 (by diff.)	18.44
	100.00

The tests so far made have demonstrated that peat can be economically and efficiently utilized in producer gas engine plants, for the production of power. The operation of the Government peat gas producer plant has proven to be as simple as that of an anthracite producer gas plant: and may be economically substituted for those producer plants using imported coal—when the price of coal is in the vicinity of $3.50 per ton, and the price at which peat can be obtained is not more than $2 per ton.

EFFICIENT METHODS OF MIXING, TRANSPORTING, AND PLACING CONCRETE ON SUBWAY WORK.

In building section 11-A-3 of the Fourth Avenue Brooklyn Subway, the Tide-Water Building Company and T. B. Bryson, of New York, employed methods in connection with the concrete work which are particularly interesting at this time when there is so much discussion regarding the efficiency of contractors' plant and field arrangements. A careful investigation of the actual operations performed in handling the sand, gravel, and cement, and the subsequent concrete shows that the arrangement and selection of suitable machinery, such as the mixer, cranes, etc., with adequate means for the transportation and placing of the material, has been most successful. The concrete construction was of such a nature that an overload f equently had to be thrown on the entire system, requiring the continuous operation at a very rapid rate, of all machinery from the Ransome mixer and conveying machinery down to the crane at the point under construction for a period of from 12 to 16 hours. These periods of hard, continuous service occurred on the days when one of the 80-ft. monolithic sections was concreted. Though the concrete plant was designed for an output of 45 yards per hour, with the 1-yard Ransome mixer it continually exceeds this considerably; in fact, the contractors have a record of placing 305 yards of concrete in 5½ hours, and this time includes unavoidable delays, such as shifting the position of the chute leading from the elevated hopper on the forms to the part being concreted. To date, about 40,000 yards of concrete have been placed and there has not been a hitch in the entire system since its inauguration.

The gravel and sand are unloaded from the barges at the company's dock on the Gowanus Canal by a locomotive crane which empties its clam-shell bucket into overhead bins that discharge through swinging gates into 4-yard side dumping cars which are hauled to the mixing plant one-half mile distant by 18-ton locomotives. Entering the cut at street grade the cars dump the sand into a depressed bin holding about 1,000 cubic yards on one side of the mixing building and the gravel into a 2,000 cu. yd. bin on the opposite side. Directly underneath each of these bins is a continuous horizontal belt conveyer which carries the aggregate to a centrally located belt and bucket elevator running up to the small bins above the mixing platform which is situated on the same level as the material track. All the conveyers are driven by one induction motor. From the sand and stone bins chutes with gates guide the material to the measuring hopper, the top of which is level with the mixing platform on which the bags of cement are placed ready for use. The water is measured by two tilting barrels connected to a 400 cu. ft. tank on the outside of the roof, the tank being supplied by the city mains. After the ingredients are proportioned 1:2½:4½ they are released into the 1-yard Ransome mixer directly below. This mixer is driven by an induction motor and runs about 12 R.P.M. It is operated by one man who controls the gate from the hopper and raises and lowers the tilting chute from which the mixture is further guided by chutes into 2-yard automatic bottom dumping buckets on cars below which run on either of two parallel tracks at about the subway grade.

The concrete is then hauled by locomotives to the section under construction where a locomotive crane hoists and empties the buckets into an elevated hopper located on and about ten feet above the forms. The mixture runs down an inclined chute by gravity and as the chute is pivoted to the hopper and has a wheel at its extended end it may be swung to any part desired to be concreted.

The standard section of the subway is 60 ft. wide and 19 ft. high, the four tracks being separated by walls. Collapsible travelling steel forms were used on the work and were made up in units of 40 ft. length with the section the shape of the tube. The concrete was run directly into the forms already described, but on the roof it was spread over the surface by hoes when finishing. About 2,500 tons of reinforcing steel and 60,000 yards of concrete will be finally used in this work.

The contractors report that the cost of labor in mixing, transporting, and placing the concrete in the steel forms averages about 30 cents per yard. As the concrete was handled mechanically throughout, no skilled labor was required in this connection. During the month of March 6,135 yards were placed, according to the Public Service Commission's measurements, and concrete at all times were rigidly inspected by their engineers.

This subway is being built for the City of New York, under the Public Service Commission, for the First District, of the State of New York, Alfred Craven, Acting Chief Engineer; Frederick C. Noble, Division Engineer; Henry L. Oestreich, Senior Assistant Division Engineer; by the Tide-Water Building Company & Thomas B. Bryson, of New York, Stephen Pearson Brown, Chief Engineer; Claude T. Wilson, Principal Assistant Engineer; Robert Eldredge, General Superintendent.