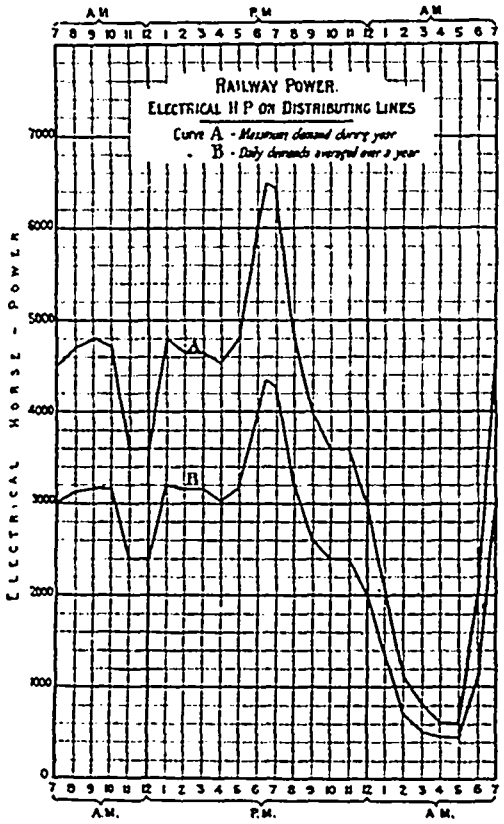
the alternating (on the score of price and unsuitability where speed regulation is required) appear to be within reach of correction in the near future, that method will be adopted for this case. The demand curves are based upon the actual load curves of one of the present stations, with allowance for the other operating companies' loads. In all it represents about 1,100 H P. of motors installed, to be driven from a two or three phase motor circuit, fed directly through reducing transformers from the transmission line, at a voltage of say 2,000, and again reduced by individual transformers at the motors.

The curves shown in the accompanying figure are the actual records for the past year for the railway company's plant. As at the present time only direct current motors are applicable to this purpose, means must be adopted for transforming the alternating to direct current for the trolley circuit. This is easily



accomplished by means of rotary transformers with small loss. These rotaries are practically direct current generators, with collector rings through which the alternating current flows to the windings driving the machine as a motor, while from the commutator connected to the same windings the direct current, which has been commutated from the alternating, flows to the trolley line.

(Continued in next issue)

—The Jas. Robertson Mfg. Co. has issued a very finely illustrated catalogue of the various bath-room, closet and sink fittings which this firm places on the market. The company also manufactures lead pipe, saws, plumbing goods, brass plumbing goods, fence wire, solder wire, triangular bar solder, paint and varnishes, putty, shot and bullets. The nickel plating plant operated by the firm is on a large scale.

—In the course of a recent address upon building stones by Prof. Julien, of Columbia College, New York, before the Mineralogica Section of the Franklin Institute, some interesting facts were brought out. Professor Julien is an authority on building stones, and an expert in the preparation of thin sections of rocks—sections so thin that they are transparent, and their structure can thus be readily seen under the microscope On this occasion the thin sections were placed in an electric projecting microscope, and the enormously magnified images were thrown upon a screen. The light was polarized by interposing suitable prisms, and under these circumstances each particle composing the stone revealed itself by its shape and color. The mechanical structure, porosity, density, etc., of each variety of stone were shown, revealing the way in which aggregations of rock particles are sometimes loosely held together without orderly arrangement and with spaces between, sometimes dovetailed into each other, and sometimes cemented together into a homogeneous mass. In some of the sections, which were as thin as a sheet of tissue paper, bubbles of liquefied carbonic acid gas were observed in the cavities of the small crystals. This liquid is held in the stone under pressure, and not infrequently the heat of the electric light, or even of the hand, is sufficient to explode it, shattering the specimens. It was easy to perceive from these illustrations why some building stones will stand great compressive strains and may yet be unsuitable for buildings in these latitudes, while other stones, much weaker inherently, may possess greatly superior weathering qualities. The statement was made that no "weathering tests" of building stones worthy of the name have yet been made. It seems very necessary that this should be done.