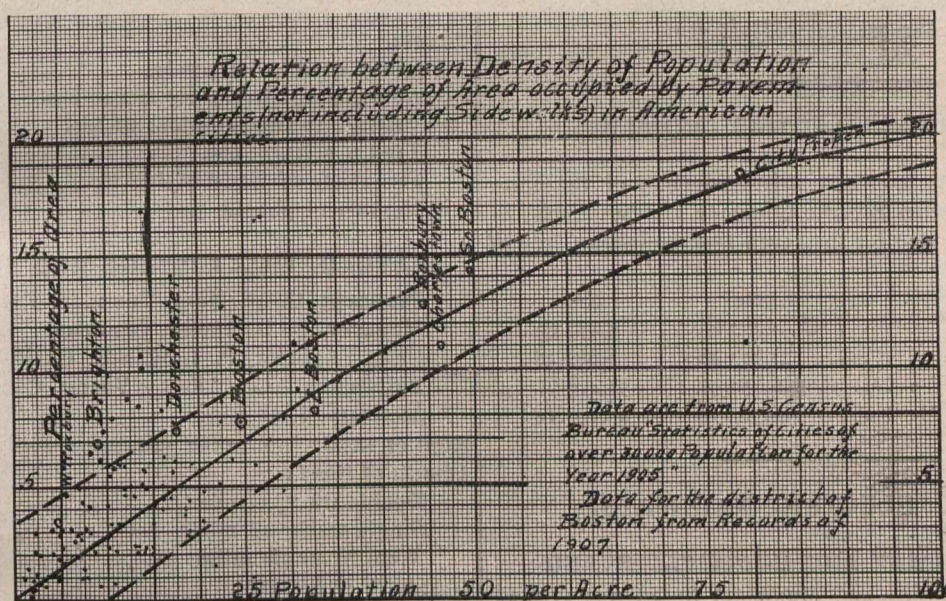Dr. Milton Hersey of Montreal, has been filled by the appointment of Mr. J. A. McRae, M.A., a recent graduate of Queen's. Mr. McRae will do research work and assist with the teaching. Mr. J. K. Robertson, M.A., who has been appointed lecturer in Physics, was born in Perth in 1885 and was educated in the public schools and collegiate institute of Perth. He matriculated at the University of Toronto, in 1903, receiving scholarships in mathematics, classics and general proficiency. During his first year he was scholarship man in mathematics and physics. He received the degree of Bachelor of Arts in 1907, with first class honors in the department of physics. In 1908, he received the degree, Master of Arts, his thesis being "On the Charges Gained by Insulated Metallic Conductors, surrounded by other Conductors, and the Relation of these charges to the Volta Effect." This paper was published in the Physical Review. Mr. Robertson has also worked with Professor McLennan on "The Magnetic Properties of Heusler's Alloys," the results being published in the Physical Review, and with H. A. McTaggart on "The Temperature Variations in the Specific Resistance of Heusler's Alloys," the results being published in the Transactions of the Royal Society of Canada. Mr. Robertson comes very highly recommended and will undoubtedly be a valuable member of the Science Faculty.

MR. LEO. F. GUTTMAN, Ph. D., F. I. C., A. C. G. I., has been appointed as assistant professor. Dr. Guttman has had a distinguished career both as a student and as a teacher. He is a son of Dr. Oscar Guttman, the English authority on Explosives. He spent three years at Central Technical College, London, where he obtained the Diploma as Civil Engineer (A.C.G.I.) He then attended the University of Heidelberg, Germany, where he studied Chemistry for four years, obtaining the degree of Ph. D. (multa cum laude.) After this he was assistant to Sir William Ramsay, University College, London, for two and one half years. He then left England as Chief Carnegie Research Assistant to Professor Baskerville at the College of the City of New York, where after six months, he was appointed to the teaching staff of the same college. After four years teaching experience in New York he now comes to the School of Mining. The extent and completeness of Dr. Guttman's training should make him a highly valued member of the staff of the department of Chemistry.

RELATION OF PAVEMENT AREA TO POPULATION.

For the purpose of determining the relation existing between the population of a given community and the requisite amount of street surface, Metcalf & Eddy, consulting civil engineers of Boston, recently prepared a diagram showing the relation of the density of population to the percentage of the area of the city devoted to pavements in all cities in the United States having a population of 30,000 or more. This diagram, recently published in the report of the engineers to the Boston Finance Commission, is reproduced herewith. Based upon these data a curve was drawn showing the average conditions in cities of various densities of population. Two additional lines, one above and the other below the curve, varying from each other by from 6 per cent. at the lower densities to 2 per cent. at the higher densities, show that a large proportion of the cities fall within these limits, thus indicating that the variation from the plotted curve showing the average conditions is comparatively small.

The data for this diagram were taken from the Special Report of the Department of Commerce and Labor, Bureau of the Census, giving the statistics of cities having a population of over 30,000 in 1905. It is quite probable that the figures indicating the amount of street pavements in various cities, as given in these reports, include unimproved streets, whereas the figures used for Boston and the subdivisions of Boston represent only public streets. If, however, this difference exists, the diagram would indicate more rather than less the normal amount of pavement on public streets.

The districts having the densest population are those of Manhattan, Boston (city proper), Hoboken, South Boston, Charlestown and Roxbury. Unfortunately, these are the only very densely populated communities from which data were

obtainable with which to establish the curve of relation of population to the proportionate area of street surface. On this account it is obviously unfair to base on such meagre data a curve showing the proper relation of street areas to population, unless it is deemed that the existing relation in Boston is proper and requisite to the public needs.

COMING MEETINGS.

American Society of Engineering Contractors.—Feb. 24-26, 1910. Annual convention at Chicago, Ill. Secretary, Daniel J. Hauer, Park Row Building, New York, N.Y.

American Society of Mechanical Engineers.—December 7-10, 1909. Annual meeting New York City. Secretary, Calvin W. Rice, 29 W. 39th Street, New York, N.Y.

American Street and Interurban Railway Association.—October 4-8, 1909. Annual convention at Denver, Colo. Secretary, Bernard V. Swenson, 29 W. 39th Street, New York, N.Y.

National Municipal League.—November 15-19, 1909. Annual meeting Cincinnati, O. Secretary, Clinton Rogers Woodruff, 705 North American Building, Philadelphia, Pa.