

may demand. The track sections, switches, frogs, cross-overs, etc., are made up on the interchangeable sectional unit plan, much the same as are modern filing cabinets. Any workman of ordinary intelligence can put the sections together and get the whole system ready for use. Should the movement of material change or extensions be required, this unit system of construction lends itself in a most flexible way to such changes or additions. Equipment of cars can also be made standard and interchangeable, which effects great convenience and economy.

A valuable feature of the Hunt System is the employment of a flexible running gear and outside flanged wheels on the cars and a special construction on the outer rail of curves, by means of which, as claimed by the manufacturers, a loaded car runs around a curve of as small a radius as 18 feet, as safely and requiring as little power as on straight-way. It is evident that with such flexibility of the system, the cars of a narrow gauge railway can reach any point that could be reached by trucks and wheelbarrows, including the movement of cars to different floors by elevators.

### THE CHEMIST AS AN AID TO EFFICIENCY.

The industrial chemist points the way to great increases in efficiency, particularly in the item of buying supplies, according to Mr. Arthur D. Little, president of the American Chemical Society. In a paper on "The Chemist in Manufacturing," he says:

Chemistry points out the only proper way to buy supplies, which is on the basis of their industrial efficiency by means of specifications defining the quality desired and rigid tests to make sure that quality is secured. Independent estimates by those in exceptional positions to know place the efficiency value of supplies as purchased and used by American manufacturers at 60 per cent. of what it should be.

Similarly the industrial chemist has a large control over the efficiency of labor. He may increase this efficiency, that is, the output of the individual laborer, by supplying more efficient processes, as Bessemer did in case of steel, Tennant in case of bleaching, or Le Blanc and Solvay in the manufacturing of alkali. He may raise the efficiency of the laborer through education, as when firemen are instructed in proper firing methods or when cooks in the sulphite pulp mill are given boiling schedules; in one instance within our knowledge such schedules raised the efficiency, not of the cooks alone, but of the entire plant as well, over 50 per cent.

Nowhere has the industrial chemist greater scope for the effective exercise of his trained and organized common sense than in the control of processes and the elimination of wastes, and nowhere are the results he has already obtained more valuable. Their influence upon productive industry has been dramatic and profound. One need only point out that the whole art of modern steel-making is under the strictest chemical control, and quote Carnegie to the effect that it has been revolutionized thereby. No industry affords a better example of the value of such control or furnishes more striking instances of the profitable utilization of wastes. The conversion of slag to cement and fertilizer, the development of 10,000 horse power from the waste gases of a single furnace, are but steps in the development which will soon make pig iron the by-product of the furnace which derives its chief revenue from the waste of yesterday. With the open-hearth furnace still utilizing less than 10 per cent. of the energy of its fuel, let no chemist think the door of opportunity has closed.

### WATER-POWER BRANCH.

*The Canadian Engineer* learns of a recent change in the organization of the Department of the Interior at Ottawa, of particular interest to engineers—the creation of a water power branch and the appointment of Mr. J. B. Challies as superintendent. The new branch is charged with the responsibility of all matters connected with the administration of water powers in Manitoba, Saskatchewan and Alberta, and also of all matters relating to irrigation, reclamation and power in the railway belt of British Columbia. In addition to a head office organization at Ottawa, the new branch comprises an extensive corps of experienced field engineers, having headquarters at Winnipeg, Man.; Calgary, Alta., and Kamloops, B.C., engaged in reporting on water power projects and the investigation of the water resources of the west, with particular reference to power. These investigations are being carried on under the advice of prominent consulting engineers, and when completed will be furnished the profession in the form of blue books. *The Canadian Engineer* hopes to publish a full account of these investigations in subsequent issues.

The superintendent of this work is a graduate of the School of Practical Science, class 1903, and an associate member of the Canadian Society of Civil Engineers. Mr. Challies' many friends will be glad to learn of his selection for this important work.

### PERSONALS.

MR. JOHN W. EBER has been appointed superintendent of the Toronto, Hamilton and Buffalo Railway in succession to Mr. H. H. Adams.

MR. A. S. ANDERSON has been awarded the Boiler and Inspection Co. scholarship for general proficiency in the Department of Mechanical Engineering of the University of Toronto Faculty of Applied Science.

DR. J. W. S. McCULLOUGH, chief health officer for the province of Ontario, will be the provincial representative at the International Congress on Hygiene and Dermography, which meets at Washington during the late summer.

MR. A. W. GRAY, formerly county roads superintendent in Frontenac, Ont., will be made assistant provincial engineer of highways, and MR. ARTHUR SEDGWICK will, according to report, be appointed second assistant engineer of the Provincial Highway Department.

### OBITUARY.

MR. EDGAR CHAPMAN, a mining engineer of New Liskeard, was found dead in his berth on the North Bay Grand Trunk Railway train. Mr. Chapman was connected with the Casey-Cobalt mines, north of New Liskeard. Two months ago his wife predeceased him after an illness of nearly three years. He was on his way to Toronto to spend the week-end with his daughter.

### MEETINGS.

The Regina Engineering Society held their inaugural dinner at the King's Hotel on the evening of May 2nd last. Sixty-five members and guests sat down. After the usual toasts were proposed, the toast of "Canadian Industries" was proposed by Mr. Thornton, who pointed to the dependence of the success of our industries on the engineering