

(ix.) To keep in close touch with, and seek the aid of, all Commonwealth and State Government Departments, learned and professional societies, and private enterprises concerned with, or interested in, scientific industrial research.

(x.) The co-ordination and direction of scientific investigation and of research and experimental work with a view to the prevention of undesirable overlapping of effort.

(xi.) To advise the several authorities as to the steps which should be taken for increasing the supply of workers competent to undertake scientific research.

(xii.) To recommend grants by the Commonwealth Government in aid of pure scientific research in existing institutions.

(xiii.) To seek from time to time the co-operation of the educational authorities and scientific societies in the states with a view of advancing the teaching of science in schools, technical colleges and universities, where its teaching is determined upon by those authorities.

(xiv.) To report annually and from time to time to Parliament.

(3) The Committee gave careful attention to the relation between the proposed institute and the existing Commonwealth Laboratory. It was recognized that the daily routine of customs, naval and military stores, and other departments requires the performance of a great deal of important scientific work, particularly chemical analysis of material, and that the laboratories in which such routine scientific work is carried out must necessarily remain under department control, though they might with advantage be co-ordinated and their equipment increased. On the other hand, as the work of the proposed institute develops there will be an increased scope for work in national laboratories devoted to special branches of research and experimental investigation which are not otherwise provided for. Such laboratories and their scientific staffs should, in the Committee's opinion, be kept distinct and placed under the control of the institute.

In the future it will be necessary to undertake experimental work in connection with the growth of our naval and military defence, the testing of materials with regard to the physical reasons underlying deterioration and change of structure due to mechanical and heat treatment, and as to failure in operation under varying conditions, the testing and trying out of processes in connection with the metallurgical industry and biological and geological problems.

The highly specialized intricate work of standardizing electrical instruments and other scientific apparatus for use as substandards by different Government departments and other institutions in which research work may be carried on would also naturally fall within the functions of the institute.

A convincing reason for drawing a line of distinction between laboratories primarily for scientific research and laboratories primarily for the necessary routine work of departmental testing is that any attempt to combine the two would lead to confusion and hamper and weaken both branches of activity, and would tend to drown the research work for which the institute is being created.

It cannot be too strongly insisted that the qualifications of a staff for "researching" are different in character from those of a staff which is to carry out scientific routine testing.

(To be concluded in next week's issue.)

THE GREATER WINNIPEG WATER SUPPLY.

THROUGH the courtesy of W. G. Chace, B.A.Sc., chief engineer, we are able to present herewith some photographs of the work being carried out by the Greater Winnipeg Water District, together with some information as to the progress being made.



Fig. 1.—East End of Siphon at Boggy River Crossing.

During the season of 1915 work was carried forward on the concrete aqueduct at the following points:—

		Progress in 1915.	
Contract No. 30	Mile No. 23	6,525	lin. ft.
	" 24	7,405	"
Contract No. 31	" 33	5,925	"
	" 40	*1,800	"
	" 43	3,055	"
Contract No. 32	" 51	4,995	"
	" 57	8,925	"
	" 65	†9,401	"
Contract No. 33	" 71	6,060	"
	" 77	4,033	"
Contract No. 34	" 85	5,266	"
		65,390 lin. ft.	

* Circular pressure section.

† Including Whitemouth River crossing.

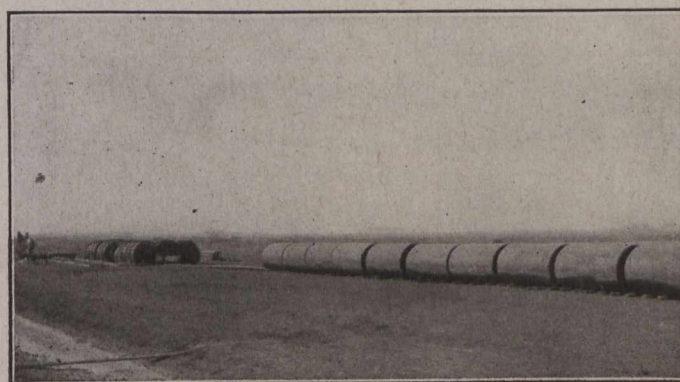


Fig. 2.—Steel Forms for Circular Pipe.

Throughout the winter, work was carried forward by the contractors at the following river crossings: Birch River, Boggy River No. 1, Falcon River.

The east end of the siphon at Boggy River crossing No. 1 is shown in Fig. 1. The boat-house structure is shown on the east bank of the river. A similar boat