

originally built, she was 75 feet long, 23 feet wide, 10 feet deep, and 7 feet 6 inches in draft, with very full ends, bluff scow bow, built very heavy with double frame to stand the heavy work required of her. As the demands of river navigation increased, a better buoy service was necessary, and it was decided to lengthen the Scout by 25 feet to be added to the bow, change her engines, increase her speed, lighten her draft and

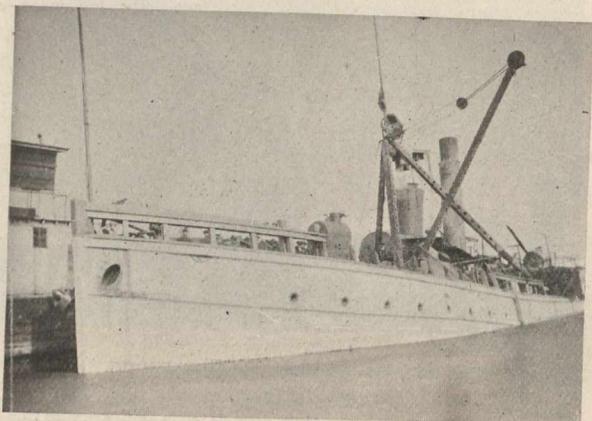
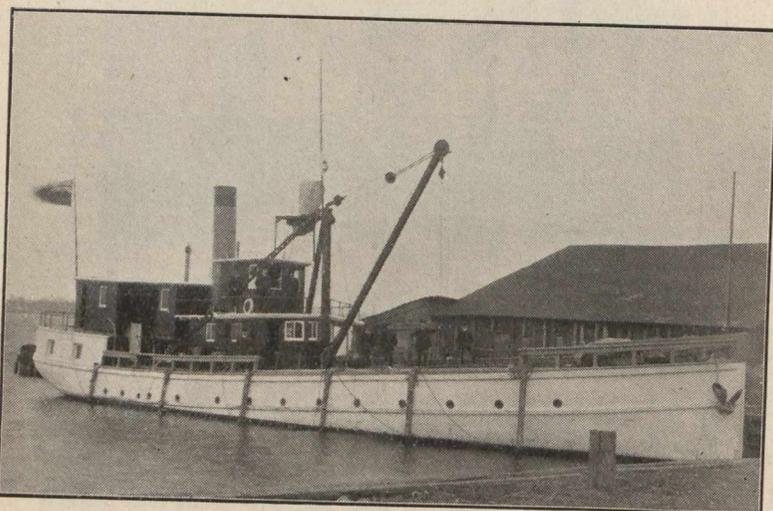


Fig. 3.

improve her accommodations. The contract for lengthening the steamer was taken by the Davis Dry Dock Co., of Kingston, and was executed during the winter of 1903-04. At the time the contract was taken the steamer was frozen solidly in 12 inches of ice with no dock or railway open upon which to do the work, so the contractors raised the forward part of the boat above water (the stern resting on hard bottom in eight feet of water), by placing through the hull below the clamp strakes a heavy stick of oak timber under which were hydraulic jacks on each side of the steamer. A pontoon about 25 ft. square and four feet deep was built and placed under the bottom of the steamer, and piles were driven along the line of the



Dominion Government Steamer Scout, before the Accident.

new keel when it was laid. New machinery was supplied by the Kingston Foundry. The steamer had twin screws driven by 10 by 12 high pressure engines, but the engines were replaced with fore and aft compound 9 and 16 by 14 using the same boiler, shafts and wheels. The advantages gained by the changes were: draft reduced from 7 ft. 6 in. to 6 ft. 2 in.; speed increased from $7\frac{1}{2}$ to 10 miles per hour; saving in fuel of from 10 to 15 per cent.

(Photos 1, 2, and 3, are by A. W. McMahon, Kingston.)



DOMINION TELEPHONES.

"The Bell telephone octopus is finding it more difficult to plant its fibres in every nook and corner of the Canadian structure than it was to secure the control of this essential public service in the States. The Government has given a pledge that during the current year a careful investigation will be made with the view of ascertaining if it may be expedient to have

the Government own and operate the entire long-distance system. Inspired by this hope, the General Assembly of Manitoba has refused to confer a franchise which would cover that entire territory and unite all its municipalities in the one general system. Likewise the town of Fernie has refused to grant a local charter, believing that even the local "calls" should be under the general province system. With characteristic progressiveness all the cities of the Western Provinces have joined this public ownership crusade, and are applying collectively to the Dominion Parliament at Ottawa for legislative protection against the Bell Telephone Company, which has of late, in its last determined struggle, been establishing its charter right to make use of the streets and highways not only without the consent, but against the direct will, of the municipal corporations charged with the maintenance and supervision of city thoroughfares. The outcome is too remote for specific prediction, but it is very evident that the public demand for a national telephone service is widespread. The "Toronto Globe" insists that it is the first public utility that the Government should control. It is not an institution of costly operations like either the telegraph or the railroads. In fact, it is infinitely simpler and more profitable than the post-office. For Canada's good let the Dominion Telephone come. Then the United States may learn through Canada's doing."—Collier's Weekly.



POWER FROM GARBAGE.

The question of using garbage destructor plants for generating electric power having recently come before the Toronto city council, Mr. Rust, the city engineer, was asked to make a report on the subject. In this report which has now been presented, Mr. Rust says that while a number of destructor plants in England are used for generating steam for electric lighting and other purposes, no city in America has adopted this practice, largely owing to the low calorific value of the waste material. In England a large amount of unconsumed coal is obtained from the open fires, whereas in this country the coal is almost entirely consumed. It is found that to realize satisfactory and economical results, it is necessary to obtain an evaporation of at least one pound of steam per pound of refuse, and he doubts that such good results could be obtained in this country. In England the best results are obtained in the mining district where coal is cheap.

Among cities in England where successful steam raising destructor plants have been in operation are, Oldham, Farrington, Fulham, St. Helens, Shoreditch, Cambridge, Accrington, etc. The results obtained from these cities demonstrate that a considerable amount of energy can be obtained from refuse furnaces and that the refuse from each locality has a particular and fairly distinct calorific value. A great difference may be noticed among these plants in the amount of water evaporated per pound of refuse burned. This, however, may be usually accounted for owing to the different class of refuse dealt with or the design of the plant. It has, however, been found that in most continental cities it is impossible to raise steam of any value.

Regarding the Shoreditch (London) plant, Mr. Rust quotes the following from a technical journal:—

"The Shoreditch Combined Electric Supply Works and Refuse Destructor is perhaps the largest of this kind at present at work. The average amount of refuse received per day is 84 tons. After leaving the electric light engines, the exhaust steam is passed from a main to heaters in the public baths and wash house, adjoining the generator station and the gas from the feed pump is used for heating a free library. Experience at Shoreditch shows that in operating coal fires in conjunction with refuse, the full efficiency of the coal is not obtained as in an independent boiler, the reason being that during the process of clinkering the refuse furnaces, a considerable amount of cold air unavoidably finds its way to the boiler tubes. The clinker and fine ash are used for making mortar and concrete and artificial paving stones. There is considerable fluctuation of steam pressure which is troublesome at times. The calorific value of refuse at Shoreditch works out from the tests as practically one pound of water per pound of refuse burned. The trouble