CANADIAN PEAT RESOURCES AND THEIR POSSIBILITIES.

Sulphate of ammonia, the chief by-product of European peat plants, is a valuable fertilizer worth about $60 per ton. The world's production last year is estimated at 1,365,000 tons, worth about $80,000,000. The chief importing countries are, according to the Journal of the Canadian Peat Society, as follows, the figures representing excess of consumption over production:—

	Tons.	Value.
United States and Canada ...	58,000	$ 3,500,000
Japan	115,000	7,000,000
Java	57,000	3,500,000
France	15,000	900,000
Spain and Portugal	42,000	2,500,000
Italy	15,000	900,000
	302,000	$18,300,000

Of these amounts the portion supplied by Germany and Austria was:—

	Tons.	Value.
Germany	90,000	$5,400,000
Austria	30,000	1,800,000
	120,000	$7,200,000

These figures show the existence of extensive markets which might be supplied, in part at least, by Canada, and of an opportunity to capture some share of the trade of Germany and Austria in this product.

The extent and rapid growth of the domestic market for artificial fertilizers is shown by the following statement of Canadian imports for 1902 and 1903 and the past six years:—

Year.	Value.	Year.	Value.
1902	$ 84,996	1910	$548,493
1903	112,256	1911	586,453
1908	403,171	1912	620,147
1909	529,660	1913	737,656

Many Canadian peat bogs are rich in nitrogen, and therefore suitable for this industry, and enquiries have already been made by British capitalists with a view to establishing chemical works in Canada, provided that a sufficient supply of peat can be guaranteed.

OPACITY OF BACTERIAL SUSPENSIONS.

In an article appearing in the January, 1915, issue of The Indian Journal of Medical Research, Major H. C. Brown and Capt. E. W. O'G. Kerwan deal with the standardization of bacterial suspensions by opacity. The following aspects of the subject are dwelt upon: (1) The relation of opacity to the weight of dried organisms contained in a known volume of bacterial suspension; (2) the variability of different organisms in this respect; (3) the relation of the opacity of a bacterial suspension to the number of organisms contained therein. The authors endeavored in the first place to prepare some chemical emulsion, the opacity of which would remain constant. This was a 1 per cent. suspension of barium sulphate in a 1 per cent. aqueous sodium citrate solution, diluted as required to form a standard opacity tube. It was found that the size of the organisms has some effect on the opacity of a given weight. A numerical equivalent was made by direct count of Staphylococcus aureus, which was proved to give concordant figures.

BACTERIOLOGICAL STANDARD FOR DRINKING WATER.

THE following are the maximum limits of permissible bacteriological impurity in drinking water, as adopted by the U.S. Treasury Department, in connection with the supply to the public by common carriers engaged in interstate traffic:—

1. The total number of bacteria developing on standard agar plates, incubated 24 hours at 37 degrees C., shall not exceed 100 per cubic centimeter. Provided, that the estimate shall be made from not less than two plates, showing such numbers and distribution of colonies as to indicate that the estimate is reliable and accurate.

2. Not more than one out of five 10 cc. portions of any sample examined shall show the presence of organisms of the bacillus coli group when tested as follows:

(*a*) Five 10 cc. portions of each sample tested shall be planted, each in a fermentation tube containing not less than 30 cc. of lactose peptone broth. These shall be incubated 48 hours at 37 degrees C. and observed to note gas formation.

(*b*) From each tube showing gas, more than 5 per cent. of the closed arm of fermentation tube, plates shall be made after 48 hours' incubation, upon lactose litmus agar or Endo's medium.

(*c*) When plate colonies resembling B. coli develop upon either of these plate media within 24 hours, a well-isolated characteristic colony shall be fished and transplanted into a lactose-broth fermentation tube, which shall be incubated at 37 degrees C. for 48 hours.

For the purposes of enforcing any regulations which may be based upon these recommendations the following may be considered sufficient evidence of the presence of organisms of the Bacillus coli group.

Formation of gas in fermentation tube containing original sample of water (*a*).

Development of acid-forming colonies on lactose litmus agar plates or bright red colonies on Endo's medium plates, when plates are prepared as directed above under (*b*).

The formation of gas, occupying 10 per cent. or more of closed arm of fermentation tube, in lactose peptone broth fermentation tube inoculated with colony fished from 24-hour lactose litmus agar or Endo's medium plate.

These steps are selected with reference to demonstrating the presence on the samples examined of aerobic lactose-fermenting organisms.

3. It is recommended, as a routine procedure, that in addition to five 10 cc. portions, one 1 cc. portion, and one 0.1 cc. portion of each sample examined be planted in a lactose peptone broth fermentation tube, in order to demonstrate more fully the extent of pollution in grossly polluted samples.

4. It is recommended that in the above-designated tests the culture media and methods used shall be in accordance with the specifications of the committee on standard methods of water analysis of the American Public Health Association.

It is pointed out, in connection with the above recommendations, that such supplies constitute a special case because of the following reasons:—

(1) The supplies come from widely diversified and mixed sources.