

Ambursen automatic aerial tramways.....	55,000
Sundries.	3,000
	\$150,000

Total Cost of Manufacturing Peat.

Power.—Taken from our own power plant, 150 E. H. P., for 6 months at \$10 per E. H. P. year.	\$ 750
Taxes.—Municipal, school, and provincial....	2,000
Repairs.	4,000
Gasoline, lighting, oil, and sundries.....	5,000
*Depreciation—7½ per cent. upon \$100,000..	7,500

Total cost per ton on yearly output of 174,000 tons of 65 per cent. peat at 11.07 cents... \$19,250

Wages cost per ton on yearly output of 174,000 tons of 65 per cent. peat at 26.00 cents 45,490

Grand total (37.07 cents per ton).... \$64,740
(To be Continued).

BOOK REVIEW

SUBSIDENCE RESULTING FROM MINING. Young & Stoek. University of Illinois Bulletin. Bulletin No. 91. Published by the University of Illinois, Urbana. Chapman & Hall, Ltd., London, European Agents.

The University of Illinois has issued a work on "Subsidence Resulting from Mining," by L. E. Young and H. H. Stoek, which contains much valuable data on a subject that is a constant source of trouble to coal miners, especially where coal mines are worked in populated districts. The work is a result of a co-operative agreement between the Engineering Experiment Station of the University of Illinois, the Illinois State Geological Survey and the United States Bureau of Mines.

Dr. Young is the mining engineer for the Illinois Coal Mining Investigations, and Mr. Stoek is Professor of Mining at the University of Illinois, and was formerly the editor of that excellent mining periodical (now unhappily absorbed in another technical periodical) known first as the "Colliery Engineer" and later as "Mines and Minerals."

The work deals with the whole problem of coal mine subsidence very comprehensively, giving details of actual subsidence, shows the geological conditions that affect subsidence, reviews the historical theories relating to subsidence and makes some new contributions to the data on this subject. The work goes extensively into the technical details of filling the waste, both by ordinary stowing and by "flushing" or hydraulic filling. Full references to the legal aspect of subsidence are made. Not the least valuable feature of the work is the most extensive bibliography appended, which fills twenty-five closely printed pages, and seems to have been drawn from the mining literature of the whole world.

The University of Illinois has already achieved a reputation for its monographs on engineering problems, which will be added to by this latest publication.

The work contains some interesting references to sub-aqueous mining, and Canadian readers will note the references to work of this character at Wabana Mines, Newfoundland, and at the coal mines of Cape Breton Island.—F. W. G.

* **Note.**—It is considered that the land from which the peat has been taken can be used for agricultural purposes. In that case it could be disposed of at a price equal or nearly equal to that originally paid. Hence there is no need to provide a depreciation fund with regard to the land.

ADVANCES IN METHODS OF ORE TREATMENT.

During the week of February 19-24 the annual Northwest Mining Convention was held in Spokane, Washington. The season of the afternoon of February 23 was under the auspices of the Columbia Section of the American Institute of Mining Engineers, and at this Prof. Francis A. Thomson, head of the Department of Mining Engineering of the State College of Washington, Pullman, Washington, presented a paper entitled "Advances in Methods of Ore Treatment in the Last Five Years," the purpose of the author, however, having been to confine himself to non-ferrous metallurgy, and to touch only on those points of progress which he considered of surpassing importance. The following is an abstract of the paper.

Flotation Concentration.—Far exceeding all other metallurgical events in significance, actual or potential, stands the progress of froth flotation. Five years ago all of us were skeptically inclined as to the effectiveness of this method of concentration, but we were mistaken. Today the flotation process takes rank as the leading single process of ore treatment in the United States. The distribution of the quantity of ore treated as between major processes in the United States is about as under:

	Tons per Annum
Flotation concentration	30,000,000
Copper smelting	26,000,000
Gravity concentration	25,000,000
Gold and silver milling	13,000,000
Lead smelting	5,500,000
Zinc smelting	1,000,000

Probably about the same proportion will apply to the World's production, except that the proportional tonnage treated by copper smelteries will be less and that by gold mills greater than is shown in the foregoing table.

It would, perhaps, be easier to show what minerals the flotation process is not adaptable for than to enumerate all to which it is being applied, for ores of gold, silver, copper, lead, molybdenum, cinnabar, tungsten, and others are being successfully treated by it, and it is proposed to apply this process to other substances as far apart as placer gold and anthracite coal.

Electrolytic Process.—Next in significance to flotation may be placed the electrolytic process for the recovery of zinc. In this process the zinc concentrate is roasted, and then it is leached with sulphuric acid made from the roasting-furnace gases; the solution, after purification, is electrolyzed and the zinc is precipitated on aluminum sheets, from which it is stripped and melted into ingots. The zinc thus produced is of exceptional purity and commands a higher price than that produced by distillation, to the extent of a premium of two cents a pound.

Notwithstanding the protests of the furnace-zinc men, the electrolytic zinc process is successful, and it is going to make zinc distillation look to its laurels. One great advantage possessed by the electrolytic process is its suitability for the treatment of lower grade and in certain respects more complex zinc ores than is possible by the fire method. Owners of lead mines in the West have long suffered from penalties levied for the zinc content of ores they shipped to lead smelting works. If electrolytic zinc plants shall become attachments of lead smelteries, as at