

quires the Institute either to absorb in their entirety all the other engineering societies in Canada, or else to control their actions (a) by enrolling and enlisting the support of a majority of members of each society, or (b) by "packing" the membership of the other societies with loyal members of the Institute.

In any event we do not agree with Mr. Lamb that the Mining Institute need go out of business, no matter what legislation the E. I. of C. may be fortunate enough to secure. The Canadian Mining Institute has had a long and—so far as we know—honorable career, rendering specialized service in one particular field. It is unlikely that the Engineering Institute of Canada, with its many general problems and its diversified interests, will be able to supplant entirely such specialized societies as the Canadian Mining Institute. Why should it?

This is the day of specialization, and while engineers will band together in one society to attain certain broad objects, they will seek other services in other channels at the same time, and there is no reason why they should not do so without in the least being disloyal to the interests of the general society. The mining engineers who belong to the E. I. of C. will no doubt continue to appreciate the Canadian Mining Institute and the mining trade papers; the electrical engineers will still feel the need of the electrical trade journals, and possibly of the A.I.E.E.; the chemists will maintain their individuality and their subscriptions to specialized papers and societies; and the civil engineers and contractors will continue, we trust, to read those papers that are specially edited and published in their interests.

PERSONALS

W. P. GROSS, of the staff of C. C. Worsfold, government engineer, British Columbia, has been placed in direct charge of the dredging operations on the Fraser River.

E. C. KERRIGAN, until recently purchasing agent of the St. Lawrence Bridge Co., Montreal, has been appointed general purchasing agent of the Great Lakes Engineering Works, Detroit, Mich., succeeding James S. Keightly, resigned.

SIFROY FORTIN, of Ottawa, who has recently been appointed deputy director of the Public Works Department, will succeed Alex. Martin, who has retired, as deputy chief engineer of Montreal. Mr. Fortin will take charge of the roads, sewers and surveying departments, the appointment to take effect on September 1st of this year.

H. M. FREEBURN has resigned as assistant engineer of the Pennsylvania State Department of Health to become associated with the engineering staff of Wallace & Tiernan Co., Inc., of New York City, manufacturers of chlorine control apparatus and sanitary engineering specialties. Following his graduation from the sanitary engineering course of Pennsylvania State College, Mr. Freeburn was an instructor at the institution and was in charge of experimental sewage work, later joining the State Department of Health.

OBITUARIES

Capt. WILLIAM G. AMSDEN, son of L. G. Amsden, vice-president of the Consolidated Optical Company, Toronto, has been officially reported to have fallen in action on August 8th. Capt. Amsden went overseas as a lieutenant with the 220th Battalion a year ago last May, and had been in the fighting line for over a year. He

was a graduate of the School of Practical Science, Toronto, and was engaged as engineer with the Consolidated Optical Company when he enlisted. Capt. Amsden was in his 30th year and unmarried.

Capt. O. L. CAMERON, B.Sc., died August 10th in France of wounds received during a recent battle. Capt. Cameron was a graduate of the School of Practical Science, Toronto, class of 1913, and until his enlistment last year was in charge of waste water surveys for the Waterworks Department of the city of Toronto. He enlisted with the 208th Battalion but was transferred to the 54th Battalion and reverted to the rank of lieutenant in order to get to France. He was again gazetted as captain shortly before his death. Capt. Cameron lived at 127 Barton Avenue, Toronto.

WHAT IS SHIP TONNAGE?

(Continued from page 182)

tons" are very often used. "Deadweight carrying capacity," abbreviated "D.W.C.," is the difference in displacement tons between the displacement at light load (usually with no stores, coal or oil fuel on board) and the full load displacement. So the deadweight capacity is an approximate measure of the maximum total weight of fuel, stores and cargo that can be put on board a ship without sinking her below her designed load water line.

It would be somewhere near the normal proportion for a ship to have deadweight capacity equal to two-thirds of her full load displacement, so that the deadweight tonnage of a vessel of 9,000 tons displacement would be something like 6,000 tons, with a light load displacement of 3,000 tons. The launching weight of such a vessel would ordinarily be considerably less than 3,000 tons, since there would be quite a weight of machinery and fittings to be put in her after launching.

When we come to the registered tonnage of a vessel, we find that is a very different matter from deadweight tons. A "register ton" is 100 cubic feet of space in a hull. It hasn't much to do with actual weight, as is shown by the fact that a "shipping ton" for package freight is taken as 40 cubic feet, referring to a ton of 2,240 pounds, and this comes fairly close to the weight for an average cargo.

To trace the origin of the register ton of 100 cubic feet, we have to go back to the year 1854, when in connection with new legislation for shipping it was found that, under the then existing measurement rules, the registered tonnage of the entire British merchant marine was 3,700,000 tons, and the total cubic contents of the same vessels was estimated at 363,400,000 cubic feet—a ratio of 1 to 98. To keep the registered tonnage at about the same value that it had then, and to simplify calculations, the register ton was officially made 100 cubic feet of enclosed space. The United States adopted this measurement standard in 1864.

The "register under-deck tonnage" is the number of register tons of 100 cubic feet included in the total space in the ship's hull below the tonnage deck. The tonnage deck is the upper deck, on ships with two decks, or the second deck from below, if there are three or more decks.

"Gross tonnage" is the total of register tons obtained by adding to the register under-deck tonnage the volume of any permanently enclosed space for stores or cargo above the tonnage deck.

"Net register tonnage" is the gross tonnage less the space for boilers and machinery and crew's quarters.