vigorously endeavouring to capture foreign markets of which Great Britain had enjoyed almost a monopoly. Mr. Chamberlain is the courier in advance of the political movement of the day, and few statesmen have been so representative of the trend of public opinion in the United Kingdom.

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Another notable utterance was that of Lord Brassey at the annual meeting of the London Chamber of Commerce. He has no fears for England. He said:

"I believe the British, on even terms, are well able to hold their own in industrial struggles, proof of which was furnished by the fact that the exports per head of Great Britain were nearly double those of the United States.

In regard to the shipping combine, it was idle to expect or claim a monopoly of the North Atlantic. It was certain sooner or later, that some movement similar to that initiated by J. P. Morgan would be brought about by the United States.

Let us not lose our national dignity in unavailing and groundless alarm. Our position as a maritime nation is assured beyond the reach of competition, and we shall hold our position against all comers, because we build ships more cheaply, and, with or without foreign crews, sail them more cheaply than any of our rivals."

## PERSONAL.

Mr. W. C. Baber has been appointed head of the actuarial department, in the Royal Victoria Life Insurance Company, he was previouly connected with the actuarial department of the Sun Life. Mr. Baber is a student member of the Institute of Actuaries.

## HOW SMOKE EXPLODES.

How smoke explodes in a burning building was graphically shown the Fire Insurance Society in its rooms by Underwriters' Inspector Wm. McDevitt. Mr. McDevitt set a two-story building about three feet high, on a table. Then he partly filled it with smoke from pieces of burnt wood. Thrusting in a gas jet, a smart explosion followed, and a tongue of flame and smoke 10 feet long shot out of the windows. The inspector also endeavoured to make, on a small scale, what firemen call a back draft, which is really a downward explosion of smoke through elevator shafts or stairways where there are iron window shutters, but the roof of his little house was blown off, and the smoke went up instead of downward.

The inspector used only plain wood to produce the smoke for his explosions. Varnished or oiled wood would, he said, have been more effective, as producing more and thicker smoke. Before giving his practical illustrations of the explosive force of hot smoke, he briefly explained the causes of such explosions. In a fire, he said, free carbon rises and mixes with hydrogen, methyl, alcohol, creosote, and other gases are also present in smoke. These become heated to the point of ignition, and an explosion is the result. Of itself smoke would explode, he said, at a temperature of from 600 to 800 degrees, but frequently it is ignited by sparks or by coming into contact with a flame.

"When the smoke becomes ignited," the inspector went on, "the interior of the building is instantly converted into a mass of flame. The Hunt-Wilkinson fire strikingly exemplified that. When I first saw the fire great volumes of dense black smoke poured out of the windows. Suddenly there was an explosion, and the smoke was transformed into such flame as I never saw before."

Very thick smoke, when ignited, the speaker said, becomes a pillar of flame, and rolls through a room with such force as to shake the walls and make the windows rattle. If sprinkled with water there would be no explosion. Where formerly firemen tried to keep smoke in, under the impression that it smothered the fire, they now immediately break in windows or skylights to let it out.

Several ways of preventing such explosions were described by Mr. McDevitt. In large stores, he said, if an air shaft of sufficient size were in the center there would be no lateral spread of fire.—"Philadelphia Public Ledger."

## ACKNOWLEDGMENTS.

Thanks are tendered for following publications:

Statistical Year Book of Canada for 1901.—Issued by the Department of Agriculture, Ottawa. Edited by Mr. George Johnson, F. S. S., Statistician. This is the 17th year of issue of this invaluable compilation of Canadian statistics, which are brought up to the current year, all along the line. It is the fashion of some M. P.'s to disparage this volume and belittle the ability displayed in its preparation. It would cure such critics were they compelled to spend a few days in work of this nature, which they would soon find to require a degree of mental ability much above the average, and a capacity for, as it were, organizing statistics that is a special gift. The Year Book is most useful, very reliable, and admirably arranged, and altogether a credit to the country.

Journal of the Institute of Actuaries., No. CCIV. —The leading contribution of this number is a paper by Mr. Ryan, Actuary of the British Empire Mutual Life, on, "The case for Census Reform." The paper points out a variety of defects in the system of taking the Census, and the desirability of its being more frequently taken. That, however, in Canada, would necessitate much greater speed in compiling the data, for, by the present methods, one Census is only finally completed and its results published, when another has to be arranged. A Census every 5 years might be carried out on a simple scale, that might be completed in a week and issued to the public in a month, and the more elaborate one be only every ten years. Mr. Ryan gives a Census table of England and Wales, but no data as to Scotland and Ireland, which is an unfortunate omission in an otherwise very able and valuable paper. The other papers are, "The Business Management of Foreign Life Companies, by Dr. Karl Sommer, with actuarial notes on Deferred Annuities and other matters.

Insurance Engineering, which has a variety of articles of considerable interest such as, "Burnt Districts;" "Portland Cement Concrete as a Protection from Fire," by C. S. Norton, B.S.; "Value of Organized Expert Insurance Inspections," by Mr. F. M. Griswold; "Eliminating the Conflagration Hazard," by Mr. Everett U. Crosby; "The Architect as a Rate Maker;" "The Skyscraper Problem;" with interesting news, comments, data, etc., etc.

The Income Account of Railways in the United States, issued by the Interstate Commerce Commission.—As usual with American official reports this is excellently arranged, and very neatly executed.

Department Reports.—The Geological Survey Depart-