of Ochotsk. A submarine eruption in the Straits of Ourinack (lat. 54° 36' N., longitude 135' W.) is reported by Captain Newell, of the "Alice Frazer." A column of water was projected upwards to a height of several hundred feet, and immediately following this, immense masses of lava were thrown into the air whilst the sea for miles around, and for many days after, was covered with floating fragments of pumice. The principal earthquake experienced in San Francisco itself, during the year 1856, occurred on the 15th February, at about half-past five in the morning. Several buildings were injured; and the shock appears to have extended over an area of about one hundred and forty-three miles in length, by sixty-six in breadth.

ROCK METAMORPHISM.

Professor T. Sterry Hunt, of the Geological Survey of Canada, has lately made known a very interesting illustration of metamorphic phenomena arising from the action of alkaline silicates on carbonate of magnesia or of iron, or earthy carbonates generally. His experiments shew that when a mixture of silica and carbonate of magnesia is boiled with carbonate of soda, the silicate of soda, at first formed, is decomposed by the magnesian carbonate; and secondly, that the regenerated carbonate of soda is enabled to take up a new portion of silica: the result being a continued silification of the magnesia through the agency of the alkaline carbonate. Mr. Hunt finds that, if pulverized quartz be boiled for several hours with corbonate of soda and carbonate of magnesia, a large amount of magnesian silicate is formed; and that, if we suppose a solution of alkaline silicate (which will never be wanting among sediments in which feldspar exists) to be diffused through a mixture of siliceous matter and earthy carbonate, we shall have, with a temperature of 112° Fahr. or perhaps with less, all the conditions necessary for the conversion of the sedimentary mass into pyroxenite, diallage, serpentine, talc, rhodonite, &c., all of which constitute beds in our metamorphic strata. If, also, aluminous matter be added to the above, the elements of chlorite, garnet and epidote will be present.

WATERS OF THE ST. LAWRENCE AND OTTAWA.

Professor Hunt has also communicated to the Philosophical Magazine for April, 1857, analyses of the waters of the St. Lawrence and Ottawa rivers, accompanied by some interesting observations, the concluding portion of which we give below. The subject will be found more fully discussed in the Report of the Geological Survey for 1854, now on the eve of publication.

1. *Water of the River St. Lawrence* (10,000 *parts.*)

A. Obtained.		*B. Calculated.*	
Carbonate of Lime	0.8033 grm.	Carbonate of Lime	0.8033
Carbonate of Magnesia	0.2537	Carbonate of Magnesia	0.2530
Chlorine	0.0242	Silica	0.3700
Sulphuric Acid	0.0687	Chloride of Potassium	0.0220
Silica	0.3700	Chloride of Sodium	0.0226
Chloride of Sodium	0.1280	Sulphate of Soda	0.1229
Chloride of Potassium	0.0220	Carbonate of Soda	0.0061
Residue, dried at 300°f	1.6780	Fe O and Mn O, Al O and P O	traces.
Residue, ignited	1.5380		