authority which would reduce it to the level of a municipal board?" It may be safe to say, that, until the English house of commons does consent to divide its authority with some kind of a legislative body in which the Englishmen who happen to live in Canada and Australia shall have a voice, every scheme for an 'Oceana' will prove 'chimerical and absurd.'

MINOR BOOK NOTICES.

New theories of matter and force. By WILLIAM BARLOW. London, *Sampson Low & Co.*, 1885. 8°.

MOST theorists, in seeking to escape from the difficulties in the way of an adequate conception of the luminiferous ether, would hesitate to embrace a theory which involved either the denial of the conservation of matter or the acceptance of the emission theory of light; and yet the author of 'New theories of matter and force' has no craven fear of either or both of these conclusions. Ordinary matter, he conceives, is a mixture of two hypothetical ethers in a highly condensed state. The properties of these ethers are peculiar. Both have inertia, and, when unrestrained, expand indefinitely like gases. One is more compressible than the other, and cohesion in each is proportioned to the density. To avoid all appearance of action at a distance, this cohesion is not supposed to be an attraction, but rather a clinging-together of contiguous particles. This seems to require these ethers to be continuous; but this is no serious embarrassment to our author, who finds no difficulty in reconciling perfect continuity of substance with any desired degree of compressibility. Owing to the diminution of the cohesion with the density, these ethers have the remarkable property that the expansive force increases as the volume becomes greater. By means of these two ethers we have the fundamental machinery for the complete explanation of matter, gravitation, light, heat, and electricity. The greater part of the book is devoted to the application of the theory throughout the whole realm of physics, supplementary hypotheses being courageously introduced when necessary. The main phenomena of light are explained by a combination of the wave and emission theories, as interpreted in the light of two ethers. It is much to be regretted that the author, before publishing his theory, did not subject it to a scrutiny at least as rigid as that which led him to reject the accepted views. The scientific imagination has an important use when stimulated by knowledge and guided by reason; but before we lightly cast aside those theories which are the result of the most profound thought, not of one mind, but of many, and which have been slowly elaborating during patient years, and set up in their stead our own brief conceits, we may well pause and consider.

The determination of rock-forming minerals. By Dr. EUGEN HUSSAK. Translated by Dr. E. G. Smith. New York, *Wiley*, 1886. 16°.

THIS is a work of which we cannot speak favorably. Dr. Smith's evident lack of acquaintance, both theoretical and practical, with the subject, has compelled him to make a close literal translation from the original; and, as would be expected, numerous errors have thus crept in, in addition to the many in the original. The whole spirit of the German language is such that close translations of technical works are rarely happy in their results — certainly never, except when one is most thoroughly familiar with both the language and the subject under consideration. It is very much to be doubted whether Dr. Smith possesses either of these qualifications; otherwise he would never have made such errors as 'the entrance face of the light' (*eintrittsfläche*) for 'plane of incidence,' and 'shell-formed' (*schalenförmig*) for 'zonal.'

Along Alaska's great river. By FREDERICK SCHWATKA. New York, *Cassell*, 1885. 8°.

THIS excellently illustrated volume describes the journey of Lieutenant Schwatka's exploring-party from Portland, Ore., through the beautiful inland passage along the north-west coast of America, as far as Sitka in Alaska, thence overland to the head waters of the Yukon River, which was explored with considerable accuracy by his expedition as far as Fort Yukon. Schwatka's raft-journey down the Yukon, and his explorations in that region, have been often referred to in these columns. Capt. C. W. Raymond, of the engineer corps of the army, had surveyed and charted the Yukon River from Fort Yukon to its mouth, about a thousand miles, as early as 1869, and Schwatka pays a deserved tribute to the accuracy of that officer's work. In fact, the large chart of reference accompanying the volume appears to be a reduced copy of Raymond's chart, which is said to be the best in existence of that part of the great river. It is to be regretted that Schwatka's time for this exploration was limited to one short summer, and that his arrival at St. Michael's had to be so arranged as to anticipate the departure of the last vessel going south from that point in the fall. Otherwise it is almost certain that he would have explored a much wider region, thus adding much to our knowledge of that almost unknown American territory.