

grow, not even a shrub, and from which animal life is almost completely banished. Only in its valleys and its waters is there any abundance of animal life; and consequently its human inhabitants are confined mainly to the valleys and the coast. Finmark has a population of 18,000 Laps and 8000 Fins (the Norsk element is insignificant, being only 1 in 300); but these are actually increasing, the Laps having doubled, and the Fins more than doubled, between 1860 and 1887, in spite of the almost chronic condition of poverty in which they, especially the Laps, live, the frequent hunger from which they suffer, and the dirt which characterises their persons and miserable dwellings. They are, nevertheless, healthy as a whole, though the infant mortality is high; and, in spite of their wretched conditions, they are entirely free from those scourges of civilised life—consumption, cancer, calculus, dropsy and dysentery. The Laps are contented, honest (except as regards reindeer), unambitious, improvident and very drunken; their luxuries being brandy, coffee and tobacco. Imprisonment with bread and water is no hardship to a Lap who has been sent to the house of correction for reindeer stealing; he returns from Trondhjem with the air of a travelled man who has acquired distinction.

In discussing the question of the amelioration of the condition of the Laps, Dr. Reusch writes like a far-seeing statesman. He wishes to see them Norwegianised and civilised by the State, and by the mildest methods; he regards the school as the most effective agent, and recommends free education, free food and lodging for children far distant from their homes, and the compensation of the parents by the State for the loss of the services of the children. He admits that there may be individual cases of oppression on the part of Norwegians, which are never heard of, because the Laps cannot or do not write to the papers like the Danes in Schleswig, or the Germans in the Baltic provinces of Russia. In addition to his own observations, the author has availed himself of all trustworthy local information regarding ethnography, commerce, fisheries, industries, natural history, natural products, and mentions the Pasvig River as the only locality in Europe where diamonds are to be found. He enters very fully into the social condition of all the races in Finmark—Lap, Fin, Norwegian, and the Russian traders. The book is an exceedingly interesting one, and is well illustrated; but it is written in Norsk, a language with which, unfortunately, not many are familiar.

JAMES C. CHRISTIE.

OUR BOOK SHELF.

Weitere Ausführungen über den Bau der Cyanophyceen und Bacterien. By Prof. O. Bütschli. (Leipzig: Wilhelm Engelmann, 1896.)

SOME five years have elapsed since Prof. Bütschli first published his investigations on the structure of some of the sulphur bacteria: *Chromatium*, *Ophidomonas*, and *Beggiatoa*, and his views on this subject have been circulated and discussed far and wide. In the above work Prof. Bütschli has restated at greater length, and at the same time more precisely, the position which he has been led to assume with regard to this delicate question. We say "delicate question," because at present an opinion one way or another can only be based upon

the degree of staining dexterity possessed by the investigator, and the results obtained are directly dependent upon the skill with which such operations are manipulated, whilst their interpretation is also subject to the individual intelligence or originality of the experimenter. Prof. Bütschli's own words will best express the object which he has had in view in the publication of the present pamphlet. "Although I have made no fresh investigations in this direction during the years which have elapsed since I first published my views, it has appeared advisable to me for some time past to once more express myself on this question, and to support my opinion by the publication of micro-photographs. . . . I have, therefore, studied afresh during the past winter the greater number of the preparations I made in the years 1889-90, and I can only add that although some preparations have suffered in the interval, I have found everything exactly as I described it in 1890. . . . In the following exposition, which I have put together as briefly as possible, I have principally dealt with the doubts which have been thrown at, and attacks which have been made upon, my former statements." In taking up this essay the reader is, therefore, plunged into a keen scientific controversy, and for those who are concerned one way or the other, the subject-matter is replete with interest, and the scientific *littérateur* will gratefully accept the exhaustive bibliography bearing upon the question; whilst even the layman, who possibly feels but slender interest in the problems surrounding the structural character of these lowly forms of life, cannot but admire the beautiful plates with which the text is illustrated.

A Dictionary of the Names of Minerals, including their History and Etymology. By A. H. Chester. Pp. xv. + 320. (New York: John Wiley and Sons. London: Chapman and Hall, Ltd., 1896.)

THE study of mineral names by Prof. Chester was originally begun in the interest of Murray's New English Dictionary: the results of years of patient work and search are conveniently collected together in the volume now issued. In the case of each name a record is given of the name of its author, the year of the first publication, a reference to the work in which the name was announced, the derivation, the reason for the name, and a description of the mineral sufficient to indicate the one to which the name was intended to be applied. For many names the information has been already given in Dana's "Mineralogy"; Prof. Chester has gone to much trouble in the attempt to fill up the gaps which remain, but he gives a long list of names relative to which further information is still required. The book will be useful, not only to those who are interested in nomenclature, but to all who wish to have in a single small volume a brief statement of the chemical composition of the minerals to which names have at any time been given. It may be added that Prof. Chester appends a list of the authors of mineral names with the names for which each author is responsible.

L. F.

Principii della Teoria Matematica de Movimento dei Corpi. Gian Antonio Maggi, Professore ordinario della R. Università di Pisa. Pp. 503. (Milano: Ulrico Hoepli, 1896.)

BY omitting illustrations, examples and exercises, and diagrams, the author has managed to give a very compact treatise on all the ordinary formulas of Theoretical Dynamics, including a little Hydrostatics. The author has incorporated into his treatment the most modern ideas of Clifford and Mach; his analytical treatment is elegant and condensed; but a little geometrical and pictorial treatment would give some relief to the procession of equations.

G.