

Another interesting statement is the following, from Lockwood's diary, as to the relative merits of Kane and Hayes: "Have been reading Kane and his travels. He is my *beau ideal* of an arctic traveller. . . . Hayes does not compare with him. Though beautifully written, there is an air of exaggeration about Hayes's book which destroys its interest. Dr. Pavy, who has hitherto been the advocate of Hayes, since his return from Carl Ritter Bay, seems to have changed his mind about him, and now agrees with Greely and me that Hayes never reached Cape Lieber. To have done so, he must have performed in part of his journey ninety-six miles in fourteen hours, — an impossibility." This, be it understood, is from Lockwood's diary as given by Lanman. The volume further contains a good portrait of the explorer, a poor map of his explorations, and no index.

THURSTON'S MATERIALS OF CONSTRUCTION.

THIS work, the author states in his preface, is an abridgment of the larger work by the same author, entitled 'Materials of engineering.'

It contains in a compact form for ready reference a large amount of valuable information concerning the properties of materials used in engineering constructions, and is undoubtedly one of the most complete works of the kind yet published in this country.

Students and practical engineers can hardly find any compilation better suited to supplement their theoretical text-books on the mechanics of engineering constructions than this. The work is not free, however, from some of the imperfections and faults which have characterized nearly all books of this kind, heretofore produced, by English and American authors. The title which is given to a text-book is perhaps of little consequence in itself; but under the titles 'Theory of strains,' 'Strength of materials,' 'Mechanics of materials,' etc., we have a variety of works, some of which are devoted to the exposition and demonstration of the theorems of applied mechanics relating to the action of external forces upon the parts of structures, and the resistances which oppose such forces, with a minimum amount of space devoted to the properties of the materials used; and in others the properties of materials, more or less fully treated, with a minimum amount of demonstration of mechanics so applied, but with working formulas, either introduced without demonstration or from experiments, — empirical formulas, — largely interspersed. This min-

Text-book of the materials of construction. By R. H. THURSTON. New York, Wiley, 1885. 8°.

gling of engineering constants and descriptions of the properties of materials with both demonstrated and empirical formulas, is perhaps necessary in such a work as that of Professor Thurston; but it requires great discrimination and art to accomplish this satisfactorily. The handbooks of Trautwine and Haswell are exceedingly useful works of this character. Professor Thurston aims to go a step farther in his formulas and explanations; but the mixing-up of theoretical demonstrations and formulas without demonstration is a fault in a text-book for students.

Some subjects are treated at great length, while others receive less notice; as, for example, those connected with metallurgy on the one hand, and the non-metallic materials on the other.

The introduction of pictures of a few of our most common trees, etc., in illustrations of timber, are out of place, and affect the character and dignity of the work, as such imperfect illustrations of familiar objects, seen almost daily and hourly in nature, are apt to prejudice the reader against the author.

Notwithstanding these defects, however, the work is a very valuable contribution to engineering as a book of reference for nearly all important questions connected with the properties of materials.

EXPLORATIONS IN ALASKA BY THE BROTHERS KRAUSE.

AMONG explorations in Alaska of late years, not purely for geographical purposes, the journey of the brothers Krause, under the auspices of the Bremen geographical society, holds a prominent and worthy place. Its progress was noted and its results chronicled from time to time in our pages. Numerous papers by the travellers themselves have appeared in European journals, the last being an account of the brachiopods and lamellibranchiate mollusks collected in Bering Sea and Strait, by Dr. Arthur Krause. Kurtz, Peters, von Martens, Reinhard, Hartlaub, Müller, Meyer, Richters, Arzruni, Poppe, and Kirchenpauer have reported from time to time on the natural history, mineralogy, and ethnology of the expedition. The volume under review is a consensus of all available information, both historical and recent, relating to the very interesting group of aborigines which occupy the greater part of the Alexander archipelago, with outlying villages as far north-west as the Copper River. It does not pretend to monographic com-

Die Tlinkit-Indianer. Ergebnisse einer reise nach der nordwestküste von Amerika und der Berings-strasse, ausgeführt im auftrage der Bremer geographischen gesellschaft in den jahren 1880-81, durch die Doctoren Arthur und Aurel Krause, geschildert von Dr. AUREL KRAUSE. Jena, Costenoble, 1885. 16+420 p., illustr. 8°.

pleteness, which would require far more profound and exhaustive studies, and much more time, than any one has yet found opportunity to give to it; but for the observations of the Messrs. Krause and their predecessors in the same field it is nearly exhaustive, and by far the most complete and satisfactory account of these people anywhere to be found. In the interest of our own students of anthropology, it would seem that an English translation would be extremely useful.

The volume opens with a sketch of the journey made by the expedition, followed by an historical *résumé* of previous explorations. This is succeeded by an account of the characteristics of the region inhabited by the Tlinkit, a chapter on their history, nomenclature, clans, totemic and tribal relations, and the position of their chiefs. The fourth chapter treats of their villages, houses, festivals, seasonal migrations, the practice of labretifery, native art (well-illustrated), and slave-holding. Then comes an account of their domestic life and customs, shamanism, and dances. A chapter is devoted to the Haida and other adjacent tribes, and another to the history of Russian and other missions among them. Lastly, we have a review of the language from a grammatical stand-point, a vocabulary, a bibliography of the literature of the whole topic, and an index.

The work is carefully and thoroughly done, and will be extremely useful and interesting to students of American anthropology. Since the miners and the missions, the navy and the mercantile element, are introducing all the changes which come with the van of civilization, it would be well, if, with this volume for a starting-point, the rapidly vanishing features of the Tlinkit culture could be permanently and monographically recorded before, as in so many other cases, it is too late. Whatever be done in this direction, we shall owe to Dr. Krause and his brother a debt of gratitude for the record which they have secured and made available, and to the society which made their investigations possible.

GEOGRAPHICAL NOTES.

A mythical Danish island.—On Danish maps near the east coast of the island of Bornholm, in the Baltic, a little island may be found named Christiansö. This is an error, for there never has been any such island there. It seems that about twenty kilometres from Bornholm is a little group of three islets, call Christiansholm, Frederiksholm, and Gräsholm, where long since were some fortifications, now in ruins, called Christiansö. How this name has been transferred to a mythical islet on the coast of Bornholm is a mystery.

A study of the Danube.—T. de Wogan has recently made a canoe voyage on the Danube, and has made a study of its sources. It appears that the river has a total length of 2,840 kilometres, and a total fall of 678 metres. The spring in the garden of Prince Fürstenberg, which has long been considered the source of the river, and is so entitled on a monument at the spot, which has been adorned at great expense by the prince, is only one of several springs in the same region, either of which has an equal claim to be so considered. In the early part of its course, the river loses much water through subterranean passages reached by fissures in its bed. These have been described by Dr. A. Knop, whose experiments have been repeated with confirmatory results by de Wogan.

The condition of Borneo.—T. Burls has visited the ancient capital of Borneo, the town of Bruni. It is situated on a river with muddy banks, about twelve miles from the sea. The houses are poor and small: they are built on piles, and thatched with palm-leaves. The sultan, alleged to be more than a hundred years old, has recently married a girl of fifteen, who is his one hundred and sixtieth wife. His territory has been the seat of several recent insurrections, which he has been powerless to suppress; and it is only a question of whether the authorities of Sarawak or those of the North Borneo company shall take possession of the rebellious districts. More than twenty British subjects of Sarawak were recently killed by the rebels on the Trusan River not far from Bruni.

South American investigations.—André Bresson has recently published a statistical and geographical work on Bolivia. Manuel Uribe Angel has just issued a work on the general geography and history of the state of Antioquia, with maps and twelve plates of antiquities, carvings, pottery, and inscriptions of a date anterior to the Spanish conquest. It contains very curious and important ethnological and linguistic material, beside valuable geographical documents relating to the little-known mountainous region traversed by the Rio Cauca, and bounded by Bolivia and Tolima from the Magdalena to the Atrato.

Travels in Laos.—The explorations of Dr. Neis in Laos during 1883-84 are recently published in more detail than the original accounts gave. Apart from their additions to cartography, they contain interesting notes. On reaching the Nam-u River, which he was the first to explore, some singular caves were observed. One is in a peaked hill, and is reached by steps cut in the rock. The second, near by but at a greater height, is difficult of access, but well repays a visit. The door with which its entrance is furnished is hung between