summer it occurred to me to verify his conclusions.

In the Anthropological Building was a large collection of "totem poles," carved implements, and drawn figures from Alaska, also from California, Mexico, Central America, and Peru, as well as from other parts of the Americas. In many places Japan was largely represented.

There is a most striking difference between the arts of the western coast and the interior of America. They have something of the grotesqueness of Japan, but not much other likeness. They are akin to those of ancient Mexico, and would indicate that the arts and the people of the western coast were of like origin; that the "totems" and other figures of Alaska and Vancouvre are survivals of the arts of Central America and ancient Mexico.

P. J. FARNSWORTH.

Clinton, Iowa, Nov. 12, 1893.

ON THE SYSTEMATIC POSITION OF THE DIPTERA.

As a student of diptera, I have been interested in the recent letters by Professors Packard, Smith and Riley in *Science*, on the systematic position of this order of insects, and wish to express my entire concurrence in the views presented by these gentlemen. That the diptera, or some of them, are the most specialized of insects—that they depart most from the primitive type of insects—seems to be almost without argument; but that they therefore hold the highest position among insects by no means follows. Even the advocates of the supreme rank of the order have never ventured to carry their conclusions to the logical ultimatum, and give to the sheep-tick, or, better yet, the wingless, eyeless bat-tick, the highest rank. That the bat-tick is the most specialized among diptera admits of no question; that it is one of the most degraded of flies is equally certain. The whale and the bat are more highly specialized animals than is the dog; but, nevertheless, they have a very inferior rank.

I have collected flies for years, and have necessarily observed their habits somewhat closely, but I have never seen anything in them that might be called intelligence. Man's claims to preëminence in the animal kingdom rest almost wholly upon his intelligence: for the same reason, preëminence among insects must be conceded to the hymenoptera.

S. W. WILLISTON.

BOOK-REVIEWS.

Lecons de Chimie, a l'usage des Eleves de Mathematiques speciales. Par HENRI GAUTIER, ET GEORGES CHARPY. Paris, Gauthier-Villars et fils, Quai des Grands-Augustins 55 471p., Ill., 1892, 9Fr.

We take pleasure in announcing to students of chemistry in this country the above able work of MM. Gautier and Charpy, which while designed, according to its title, particularly for students of mathematics is of highest interest to all chemists. The title is misleading to American readers as the book is in no sense a volume of difficult and complex mathematical theories as one might suppose but an extraordinarily clear exposition of the ground work or base of chemical science, mathematical in its exact and succinct statements. It is not wished to imply that chemists should avoid mathematical because they are such even though they may deal with chemical theory, but it is nevertheless a fact that the mathematical training in many of our colleges (we speak of special courses in chemistry) has been pushed to the wall. There is a reason for this, a doubtful one however, in the shortness of the collegiate course which necessarily prevents more than an introductory knowledge of chemistry even when this subject is taken alone. The main difficulty rests in the confusion of college and university and in the effort to complete one's education in the four years following the "high school" graduation.

The authors aim to present the subject to students, not as a mass of facts and recipes, but as a science which while it may be as yet more or less imperfect is already far advanced in definite form. This is particularly the purpose of the first part of the book, which deals

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