

something of a collector without being an ophiologist of experience. The high probability that some of his snakes had become mixed has prevented a public record of this alleged locality, in the absence of further evidence.

The collector of living specimens needs especially to guard against being misled by errors of this class, for the reason that living animals are not usually labeled when collected, beyond the possibility of confusion.

A few such cases taken at random from memory in the experience of the Zoological Society are the receipt of a South American heron, said to have been captured near Portland, Oregon; a tayra from west Africa; a bald eagle from Brazil; a southern fox squirrel from Java; a North African species of hedgehog from Manila; and a coyote captured in Porto Rico by soldiers of a volunteer regiment which served in that campaign.

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SHORTER ARTICLES.

PRELIMINARY NOTE ON A NEW ORGANISM PRODUCING ROT IN CAULIFLOWER AND ALLIED PLANTS.

DURING August and September of 1901 my attention was drawn to a disease of cauliflowers in the vicinity of Guelph, Ontario. The plants, which were well grown and cared for, showed symptoms of rot, the interior of the stem, and often all the flowering or edible part being changed into a dark-colored soft mass. Examination of this rotted material revealed the presence of enormous numbers of bacteria. Subsequently, the causal organism was isolated in pure culture, and its pathogenicity and relation to the rot were established by inoculation of healthy cauliflower plants, the production of rot in these plants, and the reisolation of the germ, and its cultivation on various media.

The organism is a medium-sized motile bacillus, with peritrichous flagellæ, five to nine in number, stains slowly with methylene blue (Loeffler), better with carbol-fuchsin. Grows best under aerobic conditions, but is able to grow slightly in atmosphere of hydrogen. Liquefies gelatin; grows on surface agar as a

moist, whitish, slightly opalescent growth, which becomes more massive with age; curdles milk slowly, producing slight digestion, with acid reaction (litmus). Produces heavy cloudiness in bouillon. Changes the red color of rosolic acid peptone bouillon to a light brown. On slices of raw potato, produces a deep creamy growth; the potato is completely softened, with the production of a considerable amount of ammonia. Grows well on raw slices of the following vegetables, producing softening or rotting: cauliflower, cabbage, turnip, rape, radish, horseradish, kale, celery, artichoke, asparagus, carrot, onion, tomato and parsnip. It does not grow on raw beet, and on sugar beet but very sparingly.

The growth on some of the above vegetables, notably cabbage, horseradish and onion, is frequently accompanied with the production of gas bubbles, and disagreeable, offensive odors.

The organism grows best at 25–30° C., but grows well at both 20° and 37° C.

The action of the bacillus on the plant is similar to the *Pseudomonas* described by Potter. It dissolves the middle lamella; the enzyme produced by the bacillus may be isolated from the rotted cauliflower or from bouillon.

The name proposed for the organism is *Bacillus oleraceæ*.

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RECENT MUSEUM REPORTS.

THE annual reports of three of our great museums have appeared within the last few months and may well be considered together. These, in their order of appearance, are the Field Columbian Museum at Chicago, the American Museum of Natural History of New York City, and the United States National Museum at Washington. This last is so far behind the others in date, being for the fiscal year ending June 30, 1900, that it is a little difficult to make exact comparison with them. Each of these institutions expresses a need for more money for current expenses and the National Museum makes its regular annual plea for more room. How necessary more

room has become may be partly understood by reading Mr. Rathbun's report, but only those conversant with the circumstances in the case can fully appreciate the inconvenience, loss of time and money, and danger of loss from fire caused by the existing order of things.

The city of Glasgow is just now finishing a museum that will cost \$1,500,000, and it would seem that a nation so fond of boasting of its wealth as is the United States might at least spend thrice that sum in the construction of a building.

From the reports one gathers that in all these institutions there is special activity in the departments of anthropology and vertebrate paleontology, and in both of these departments the American Museum of Natural History, largely through the liberality of its friends, stands first. Through the activity of its collecting parties this institution has made good progress with its extremely interesting exhibit illustrating the history of the horse family. Although this is now much more complete than any other similar collection extant, the Curator hopes eventually to secure every form between the little Eocene ancestor and the large horse of the Pleistocene, and to add skeletons of typical breeds of modern horses as well.

In paleontology the Field Columbian Museum has added the largest bone of any animal yet found, in the shape of a femur of *Camarasaurus*, six feet eight inches high, while it has also placed on exhibition a complete foreleg of the great *Morosaurus*.

The comment may be made that all these fine fossils have been the result of field work, and that the U. S. National Museum has no funds for this purpose.

As usual the Field Columbian Museum makes a good showing in its exhibition series of mammals, the most notable being a group of African wart hogs mounted by Mr. Akeley. The piece of the year of the American Museum is the bird rock group of Mr. Denslow, and an illustrated pamphlet describing this may be had for the nominal sum of ten cents.

In entomology and botany the National Museum stands first with its accessions of 85,000 specimens of insects, arachnida and

myriapoda, and 27,000 herbarium specimens, and it is a pleasure to add that the greater number of these came as gifts.

The American Museum announces the installation of the famous Bement collection of minerals and of the fine series of gems presented by J. Pierpont Morgan. The National Museum has received on deposit from Dr. Shepard the Shepard collection of minerals which includes many rare forms.

Both the Field Columbian and American Museums make provisions for lecture courses; the latter, indeed, has always made a special point of its lectures to teachers, and has a Department of Public Instruction and one of the best equipped lecture halls in the country. The one institution notes a falling off in its attendance, the other a decided increase, so that at times the lecture hall was insufficient for the accommodation of the public. The National Museum has had no lecture course for several years, but if it has not, it has imparted much direct information in response to requests from various parts of the country, to say nothing of those made by passing individuals. It is noted that 700 lots of specimens were submitted for identification, and that the number of letters answered was about 5,000. It can readily be seen that this work makes great inroads on the time of the scientific staff and clerical force, while it may be said that the direct results to the Museum are few. The indirect benefit, however, is probably considerable, though nothing like that occurring to the American Museum through its Department of Public Instruction.

The National Museum announces the completion of Jordan and Evermann's 'Fishes of North and Middle America,' the American Museum has published the last part of the important 'List of Types of Invertebrate Fossils,' while the Field Museum has issued 'A Synopsis of the Mammals of North America and the Adjacent Seas,' a work that, for the first time, places a comprehensive work on our mammals within reach of every one. The National Museum has published the most papers, as it should with its special appropriation. But this institution is very liberal in the matter of distribution, as well as in publishing

papers by others than the actual or honorary members of its staff.

In the matter of attendance the American Museum of Natural History had 461,026 visitors, the U. S. National Museum 358,587, and the Field Columbian Museum 248,408, this being a falling off from the previous year. The Field Columbian Museum is the most difficult of access locally, the National Museum is the easiest, while the American Museum has the largest adjacent population to draw from.

The expenses of the Field Columbian Museum were \$160,545, of the American Museum, \$191,584, and of the National Museum, \$243,540. But \$17,000 of this last was for publication and \$28,040 for additions, rent and repairs, so that the actual cost of administration was not so great as it might seem.

NOTES ON ENTOMOLOGY.

For a number of years Dr. J. L. Hancock, of Chicago, has been studying that difficult family of grasshoppers, the Tettigidæ. He has now summarized his studies in an elegant volume.*

The work opens with an excellent general account of the family, including much interesting matter on habits, variation, protective coloring, etc. The generic and specific descriptions appear to be good, but the synoptic tables seem to be badly arranged. In fact something appears to have been omitted from several of them, so that they are of little value. The author has apparently no definite idea as to his species and varieties, for what are treated as varieties in one place are elsewhere called species. Altogether the author describes about 85 species, about 48 of which occur in the United States. Unfortunately Dr. Hancock did not see the National Museum collection in time to include two new species and one new variety that are added in an appendix. It seems probable that future study will reduce the number of species in our country.

* 'The Tettigidæ of North America,' published by special grant of Mrs. Frank G. Logan. Chicago. 1902. 188 pages; 11 plates.

Ch. Ferton, well known for his interesting ethological studies on predaceous Hymenoptera, has added another* to his long list of papers on this subject. It includes a great amount of matter of general biologic interest arranged in a number of chapters. There are notes on the variability of instinct in Hymenoptera; on the odor emitted by certain species; lists of Hemiptera, Diptera, and Arachnida gathered by various species as food for their young; on the position of the egg upon the host-insect; on the habit of *Odynerus* and *Eumenes* of suspending the egg to the end of a thread; on the means of protection of certain caterpillars against these Hymenoptera; and finally on intelligence and instinct.

Ferton attributes the curious acts of these insects chiefly to instinct, and declares that acts of intelligence are exceptional with Hymenoptera. Many that appear as such are only habits that one rarely has the opportunity to observe. To the paper are added two plates illustrative of the nesting habits of certain species.

It has long been known that the larva of *Clythra 4-punctata*, a case-inhabiting Chrysomelid beetle, lives in the nests of an ant—*Formica rufa*. But it was not known upon what they fed or how they got into the ant-nest. Mr. Donisthorpe has now settled these points, and in a very interesting article† he gives an account of the entire life history of this insect. The adult beetles escape cautiously from the ant-nest, and feed on the tender foliage of birch. The female then seeks a shrub overhanging an ant-nest and begins oviposition. She covers the egg with a case made of her own excrement, which, when dried, has much resemblance to a birch bud. The eggs are dropped upon the ant-nest and the ants carry them into their galleries. Here the larva hatches and uses the egg-case for its first protection. It feeds upon the de-

* 'Notes détachées sur l'instinct des Hyménoptères mellifères et ravisseurs, avec la description de quelques espèces,' *Ann. Soc. Ent. France*, LXX., pp. 83-148, 1901.

† 'The Life History of *Clythra 4-punctata*,' *Trans. Entom. Soc. London*, 1902, pp. 11-24, 1 pl., by H. St. John K. Donisthorpe.