

by Dr. Meumann, as well as all formal assemblies of the members of the *Institut*, are held in room 6. Here, too, are the central batteries and the larger pieces of apparatus for demonstration. On the other side of the corridor is the cloak room, marked E, serving also as a storeroom for the charts and diagrams used in the lectures. No. 7 is the First Assistant's room.

Rooms 8 to 12 are arranged more especially for work in acoustics. In No. 8, for instance, the large phonometer is set up as a fixture. In room 9 are placed various acoustic instruments; the room is, moreover, connected by telephone with No. 12. Rooms 10 and 11 are for a variety of uses, for chronometric work, or for experiments such as those on '*Zeitsinn*.' Next to room 11 is a small protective antechamber leading to No. 12, the silent room with double partitions and doors. Besides the transmission of sound by telephone, these acoustic rooms permit direct air communication by means of lead pipes. In some cases the pipes are bent around an intermediate room, passing, for instance, from No. 9 around No. 10 to No. 11. In others the pipes pass without bend, directly from one room to the other.

In room 13 are lockers for tools and for chemicals. No. 14 is the well-lighted library and reading room.

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AMERICAN ORNITHOLOGISTS' UNION.

THE Fourteenth Congress of the American Ornithologists' Union convened in Cambridge, Mass., Monday evening, November 9th. The business meeting was held at the residence of Mr. Charles F. Batchelder. The public sessions, lasting three days, were held in the Nash lecture room of the University Museum, commencing Tuesday, November 10th.

William Brewster, of Cambridge, Mass.,

was reelected President; Dr. C. Hart Merriam and Mr. Robert Ridgway, of Washington, Vice-Presidents; John H. Sage, of Portland, Conn., Secretary; Wm. Dutcher, of New York, Treasurer; Charles F. Batchelder, Major Chas. Bendire, Frank M. Chapman, Chas. B. Cory, Drs. Jonathan Dwight, Jr., A. K. Fisher and L. Stejneger, members of the Council. One active and seventy-eight associate members were elected.

By a change in the by-laws ex-Presidents of the Union are now *ex-officio* members of the Council.

Mr. Wm. Dutcher, Chairman of the Committee on 'Protection of North American Birds,' read an interesting and most valuable report of the work done by his committee during the past year. This report will be published in *The Auk* and reprinted as a separate pamphlet.

The Union was honored by the presence of Miss Maria R. Audubon, granddaughter of the renowned naturalist. In her behalf Dr. Elliott Coues exhibited some recently discovered manuscript journals of John James Audubon, including the one giving an account of his famous trip up the Missouri river. A vote of thanks was tendered Miss Audubon for her kindness in allowing the manuscript to be seen.

Under the title 'Ornithological Publications, Present and Prospective,' Dr. Elliott Coues laid before the Union an advance copy of the 'Report of the World's Fair Ornithological Congress,' and stated that he was engaged in the preparation of a new edition of his 'Key to North American Birds.' He also mentioned other works that would soon be given to the public.

A prominent feature of the Congress was the open-air talk by Mr. Abbott H. Thayer, demonstrating his theory of the principles of protective coloration.

Mr. Thayer placed three sweet potatoes, or objects of corresponding shape and size, horizontally on a wire a few inches above

the ground. They were covered with some sticky material, and dry earth from the road on which they stood was sprinkled over them so that they would be the same color as the background. The two end ones were then painted white on the under side, and the white color was shaded up and gradually mixed with the brown of the sides. When viewed from a little distance these two end ones, which were white below, disappeared from sight, while the middle one stood out in strong relief and appeared much darker than it really was. Mr. Thayer explained that terrestrial birds and mammals which are protectively colored have the under parts white or very light in color, and that the color of the under parts usually shades gradually into that of the upper parts. This is essential in order to counteract the effect of the shadow, which otherwise, as shown by the middle potato, makes the object abnormally conspicuous and causes it to appear much darker than it really is. In the case of Mr. Thayer's experiment some of the witnesses could hardly believe that the striking difference in the visibility of the three potatoes was entirely due to the coloring of the under side, and Mr. Thayer was asked to color the middle one like the two others in order that the effect might be observed. Mr. Thayer complied with the request, painting the under side of the middle potato white, and shading the white up into the sides as in the case of the others. The effect was almost magical. The middle potato at once disappeared from view. A similar experiment was tried on the lawn. Two potatoes were painted green to resemble the green of the grass above which they were suspended. One was painted white on the under side and at once became invisible when viewed from a little distance, while the other showed plainly and seemed very dark, the shadow, super-added to the green of the under side, mak-

ing it remarkably conspicuous. The experiments were an overwhelming success. In the discussion that followed, Mr. Thayer called attention to the winter dress of the ptarmigan, and stated that inasmuch as the body of the bird is white all over it is clearly impossible for the under parts to be any whiter, and consequently the bird's shadow would tend to make it conspicuous when standing on the snow. To offset the effects of the shadow the under side of the bird would be lightened by the reflected light from the snow. In addition to this, the black of the ptarmigan's tail would have the effect of lessening the apparent depth of the shadow, thus serving to render the bird less conspicuous. Dr. Merriam stated that additional illustrations of the same kind might be mentioned, and cited those of the polar hare and ermine, in which animals the black of the ears and tail would have the same effect as the black tail of the ptarmigan. Dr. Merriam remarked further that the absence of black from the ears and tail of the polar bear, arctic wolf and arctic fox served to prove the correctness of Mr. Thayer's theory, inasmuch as these latter animals chase their prey, and consequently would be rendered more conspicuous by black markings which, being in motion, would direct attention to them.

The subject created much discussion. A vote of thanks was given Mr. Thayer.

Mr. Louis Agassiz Fuertes gave an exhibition of some of his own unpublished drawings of birds from life. Examples of the work of Mr. Ernest E. Thompson were also shown.

Mr. Edward H. Forbush, Field Director of the Massachusetts Gypsy Moth Commission, asked for information and suggestions regarding the advisability of introducing in the United States foreign birds that feed upon the eggs of the gypsy moth. From the trend of the remarks which followed, it

was evident that such a scheme would be impracticable and undesirable.

The following is a list of the papers read at the sessions:

The Fringillidæ of Dodge County, Wisconsin. WILL EDWIN SNYDER.

An Ornithological Tour in Yucatan and Mexico, illustrated by lantern slides. FRANK M. CHAPMAN.

Some New England Birds Nests, illustrated by lantern slides from original photographs. WILLIAM BREWSTER.

The Philadelphia Vireo (Vireo philadelphicus). JONATHAN DWIGHT, JR.

The Moults of the Song Sparrow (Melospiza fasciata), and of the Red-eyed Vireo (Vireo olivaceus). JONATHAN DWIGHT, JR.

Notes on the Black Rail (Porzana jamaicensis) in Southern Connecticut. JOHN N. CLARK.

Notes on the Birds of Oregon. C. HART MERRIAM.

Some Notes on the Nesting Habits of the White-tailed Kite (Elanus leucurus), with exhibition of eggs. CHESTER BARLOW.

Two Curious Birds' Nests. WILLIAM BREWSTER.

A Series of Redpolls. WILLIAM BREWSTER.

On the Terns of Penikese Island, Massachusetts. GEORGE H. MACKAY.

On the Terns of Muskeget Island, Massachusetts. GEORGE H. MACKAY.

The next meeting of the Union will be held in New York City, beginning November 8, 1897.

JNO. H. SAGE,
Secretary.

NOTES ON INORGANIC CHEMISTRY.

IN an inaugural dissertation (Amsterdam, 1896), W. P. Jorissen makes a contribution to the knowledge of 'active oxygen.' When a number of substances are slowly oxidized in air or oxygen a part of the oxygen becomes endowed with peculiarly active properties. On studying the oxidation of triethyl phosphin $P(C_2H_5)_3$, Jorissen finds that oxygen is taken up from the air in quantity corresponding to the formation of the oxid $P(C_2H_5)_3O$; but if indigo, which is not oxidized by ordinary oxygen, is present, twice the quantity of oxygen is consumed and the indigo is also oxidized with loss of color. Other substances act in

a similar way. The conclusion drawn by the author is that in the slow oxidation of a body the same quantity of oxygen is rendered 'active' as is taken up in forming the primary product of oxidation.

IN the last number of the *Berichte* of the German Chemical Society, Victor Meyer and Max von Recklinghausen give an account of a series of experiments on the slow oxidation of hydrogen and of carbon monoxid by potassium permanganate. Pure hydrogen in a test tube or a flask inverted over a solution of the permanganate is slowly but completely absorbed. Similarly carbon monoxid is in the course of a few days completely oxidized to carbon dioxid. When the solution and gas are shaken in an agitator the same reaction takes place provided the permanganate solution is alkaline or neutral. If, however, it is acid, there is an evolution of oxygen, the quantity being about half that of the hydrogen absorbed. With carbon monoxid and acid permanganate solution there is on agitation also an evolution of oxygen, but not much more than half as much as is the case with hydrogen. This evolution of oxygen is difficult to account for, as in every other known case of oxidation by potassium permanganate the oxygen is wholly consumed in the oxidation process, and none of it escapes. Prof. Meyer suggests a possible similarity of this phenomenon with those of slow oxidation studied by van't Hoff and Jorissen (see above note), where the oxygen molecule seems to divide into two portions with different properties. According to this a molecule of oxygen from the permanganate would divide, one-half going to oxidize the hydrogen, while the other escapes to form molecular oxygen.

IN the same journal G. P. Drossbach describes an investigation of monazite sand in which he finds what he considers to be a new metal, differing somewhat in its prop-