

ture of care and time. Still another point that should have been treated in greater detail is the use of the ortho-chromatic plate.

On such points as the last two mentioned there is a lack of practical information which will give the book less of a circulation than it should have and deserves to have on account of its many excellent qualities.

FRANK WALDO.

#### BOOKS RECEIVED.

*Man, Past and Present.* A. H. KEANE. Cambridge University Press. 1899. Pp. xii + 584.

*A Short History of Free Thought; Ancient and Modern.* JOHN M. ROBERTSON. London, Swan, Sonnenschein & Co., Ltd.; New York, The Macmillan Company. 1899. Pp. xii + 446.

*Vital Statistics.* ARTHUR NEWSHOLME. London, Swan, Sonnenschein & Co.; New York, The Macmillan Company. 1899. Pp. xii + 353.

*Handbook of British, Continental and Canadian Universities, with special mention of the Courses open to Women.* ISABEL MADDISON. New York, The Macmillan Company. 1899. Pp. iv + 174.

#### SOCIETIES AND ACADEMIES.

##### THE SCIENCE CLUB OF THE UNIVERSITY OF WISCONSIN.

At the meeting of the Club held on May 12th papers were read by G. C. Comstock on 'Some Recent Applications of Photography to Astronomical Discovery' and by F. H. King on 'The Flow of Liquids through Porous Media.'

Officers for the ensuing year 1899-1900 were elected as follows: President, Mr. Charles R. Van Hise; Vice-President, Mr. Edward Kremers; Secretary and Treasurer, Mr. Charles F. Burgess.

On the evening of May 6th the Club gave a



MEDAL OF THE SCIENCE CLUB OF THE UNIVERSITY OF WISCONSIN.

*Every-day Butterflies: A Group of Biographies.* SAMUEL HUBBARD SCUDDER. Boston and New York, Houghton, Mifflin & Company. 1899. Pp. 386.

*A Selected Biography of the Anthropology and Ethnology.* WILLIAM Z. RIPLEY. Boston, Trustees of the Boston Public Library. 1899. Pp. 159.

*Thatsachen und Auslegungen in Bezug auf Regeneration.* AUGUST WEISMANN. Jena, Gustav Fischer. 1899. Pp. 31.

*Traité élémentaire du mécanisme chimique fondée sur le thermodynamique.* P. DUHEM. Paris, Hermann. 1899. Pp. 381.

dinner in the Madison Guild Hall in recognition of the election of its first President, Mr. George Cary Comstock, to the National Academy of Sciences, and the awarding of a medal to its second President, Mr. Stephen Moulton Babcock, by the Legislature of the State of Wisconsin.

On June 22d the first award of the Science Club Medal will be made to that member of the senior class of the University of Wisconsin who presents the best thesis giving the results of his own original investigation of a scientific

subject. Dies have been prepared by Thomas Moring, of London, from which a medal in bronze will be struck annually for this purpose.

WM. H. HOBBS.

TORREY BOTANICAL CLUB, MARCH 29, 1899.

THE first paper was by Francis E. Lloyd, on 'The Functions of the Suspensor,' and was illustrated by drawings and a series of microscopes exhibiting slides.

Mr. Lloyd described the structure of the suspensor typical of the genera *Galium*, *Asperula*, *Vaillantia*, etc., and showed that haustoria are formed which absorb food from the endosperm. The large basal cell of *Capsella* was shown also to possess a function quite similar, because, as the preparations showed, the basal cell destroys the tissue of the inner integument in its vicinity and thus becomes imbedded in it.

The second paper was by Mrs. E. G. Britton, on 'The Ferns of the Eastern United States,' illustrated by the stereopticon.

Mrs. Britton exhibited mounted specimens of all the rarer ferns of the Eastern States, many of them of her own collection, giving the range of each species. She also exhibited lantern slides made from photographs of these ferns taken as they grow. Those of the maiden-hair, hart's tongue and beech-fern were taken from the fernery in the New York Botanical Garden; five of them were views from the Catskill Mountains taken by Mr. Van Brunt; Mr. Hulst contributed one from Lake George, and Mr. Lorenz five from Willoughby Lake, Vt. Others were Adirondaek views taken by Stoddard. Mrs. Britton stated that she would continue to fill in the omissions where she had not been able to obtain photographs, and hoped to complete her collection in the future. She expressed the hope that as the interest in ferns increases, the love of them would likewise grow, and that the rarer ones would not be exterminated by useless transplanting to locations where they will not survive. It was stated that thus far Rutland county, Vermont, shows the greatest number of ferns of any county in the Eastern States, having 42 species and 10 varieties. There are seldom more than 20 species in any locality, except where there is a great variety of soil and habitat, as at Jamesville, N. Y.,

where Professor Underwood has found 34 species. Long Island has 25 and Staten Island 23 species.

In further illustration, the Torrey Club collection of ferns and many sheets from the Columbia collection were exhibited, also a series of photographs from Professor Atkinson, showing the variations produced by cultivation of *Onoclea sensibilis*.

An exhibit to illustrate *Onoclea sensibilis* in the fossil state was also furnished by Dr. Hollick, being of special interest as the only living species which is actually found fossil.

Mr. William A. Lawrence, of Hartford, Conn., was introduced by Dr. Rusby, as one who had collected 34 species of ferns about Willoughby Lake, Vt. Mr. Lorenz described the lake and neighboring cliffs, with the illustration of lantern slides, and spoke of the hundreds of plants of *Woodsia glabella* flourishing there close together, fruiting at one inch or at six inches. In the sunshine it becomes more leathery, as if passing into *W. hyperborea*. Mr. Lorenz also finds *Aspidium spinulosum dilatatum* reverting there to the type of the species.

Dr. Rusby and Dr. A. R. Grout also described their visits to Willoughby Lake.

Mr. W. A. Clute exhibited several fronds of *Dryopteris simulata*, collected by him at Babylon, L. I., last summer, and pointed out a distinction from *D. Thelypteris* in the fact that each pinna of *D. simulata* is not of uniform breadth but broader near the middle. It fruits chiefly in the shade, *D. Thelypteris* in the sun.

Dr. Rusby spoke of the beauty of the ferns on the mountain slopes near Plainfield, N. J., and of the localities near there for *Asplenium ebenoides*, *Cystopteris fragilis* and *Cheilanthes lanuginosa*.

Mr. Clute remarked that he had collected 16 species of ferns within a mile of Fort Lee, and 59 species are now growing at the Botanic Garden.

EDWARD S. BURGESS,

Secretary.

ZOOLOGICAL CLUB, UNIVERSITY OF CHICAGO—  
MEETINGS OF WINTER AND SPRING  
QUARTERS, 1899.

Ovarian Structure in an Abnormal Pigeon.—  
The bird in question was the offspring of a

Vienna white (*Columba alba*) and a common ring dove (*Turtur risorius*). She was remarkable for her unusual appearance and manner, and upon dissection the ovary was found to be abnormal. The first thing in the structure of the ovary to strike the attention was the large number of double eggs, that is, two or more eggs lay within the common follicle; they might or might not be separated by a distinct membrane.

Most of the larger eggs were vacuolated, the vacuoles always appearing in connection with the substance of the sphere or yolk-nucleus. This sphere substance seemed to be also closely related to the membrane separating double eggs.

The nuclei in many cases were shrunken and seemed to be degenerating. Nucleoli were frequently present, but in many cases were indistinct and irregular in outline. Mitotic division of the nucleus was never observed, although one or two centrosomes were often present. Many of the eggs, especially the larger ones, were undergoing resorption by means of phagocytes which were the transformed follicle cells. Instances were found where the follicle cells had disappeared along part of the periphery of the egg, leaving behind a deposit of pigment. The doubling of the eggs seemed to be due in most of the smaller ones to division of the primordial egg cell, and in the larger ones to fusion of contiguous cells. The cause of such abnormalities is not known. Some connection with hybridization may be shown later.

MICHAEL F. GUYER.

Titles of papers given during the two Quarters: 'Life-History of *Dicyema*,' Professor W. M. Wheeler; 'Abnormalities in Ovigeneis,' M. F. Guyer; 'Recent Literature on Annelid Morphology,' R. S. Lillie; 'Experimental Production of Meroblastic Cleavage in the Frog's Egg (O. Hertwig), Dr. C. M. Child; 'Recent Experimental Work on the Ctenophore Egg' (Fischel & H. E. Zeigler), Dr. C. M. Child; 'Some Native Americans' (illustrated), A. L. Melander & C. T. Brues; 'The Formation of Giant Embryos in *Ascaris*' (Zur Strassen), H. H. Newman; 'Blind Fishes,' Professor C. H. Eigenmann, of the University of Indiana; 'In-

stincts and Habits of Solitary Wasps (Peckham), Miss M. M. Enteman; 'The Evolution of the Color-pattern in the Pigeon's Wing,' Professor C. O. Whitman; 'The Excretory Organs of Petromyzon,' Professor W. M. Wheeler; 'The Excretory System of Turtles,' Miss E. R. Gregory; 'A Review of the Phosphorescent Organs of Animals' (illustrated), Professor S. Watasé; 'Hybridism in Pigeons,' M. F. Guyer.

#### DISCUSSION AND CORRESPONDENCE.

##### TOTEMISM.

TO THE EDITOR OF SCIENCE: Totemism has been a most obscure subject, and it is only of late that any real light has been thrown on it by the publication of Baldwin-Gillen's 'Native Tribes of Central Australia,' which is ably discussed by Mr. J. G. Frazer in the April and May numbers of the *Fortnightly Review*. Among the Australians an Emu group, *e. g.*, is that who by refraining from killing and eating emus show that by their friendship with emus they acquire power with them, and identify themselves with the emus by blood ceremonies and by masquerading as emus. Now, all this we may interpret as a trap, a bit of animistic cunning like that of the hunter stalking. The Emu men are specialized as a group to a control over the emus by magic rites, making them multiply and be convenient food for the rest of the tribe. Totemism is a cooperation primarily for food supply; "you Grub men get grubs for me by your special kinship with grubs, and we Emu men likewise will get emus for you." The Totemic method is a sly specialization by which a tribe of men get the best of their animistic fellows—emus, grubs, rain, etc.—for their own advantage, and so the Totemic organization is not a religious, but wholly an economic, socialization.

It appears to us that this interpretation, as we have just expressed it, is sufficient, and Mr. Frazer's remark about the motive of 'inconsistency' which restrains from eating Totem, as a cannibalism, presumes too much on the logical power of the native. And cannibalism is a common thing in nature; but among men and most animals is reduced to eating one's enemies or persons of another tribe; hence when the