

Driver had passed through the song seasons and had a well-established song formula of their own, I obtained a brood of Baltimore orioles which I believed to be about six days old. The birds were secured at South Orange, N. J., a point several hundreds of miles from the birthplace of my original birds, Timmy and Driver. I shall distinguish these birds, when speaking of them, as the brood of 1897. They were reared in the same way that the other orioles had been, except that they had the *society* of, and were closely associated during their early lives with, the two older orioles.

The moults occurred at the same intervals that I have indicated, and by the winter of 1897-1898 I was able to distinguish the sexes of my four new birds by the characteristics that correlate with sex. Three were males and assumed full nuptial plumage by a partial moult in late January and part of February. The fourth bird was a female.

On my coming to live in Princeton when these 1897 orioles were about seven weeks old, they, as well as Timmy and Driver, had an especial room given over to their use, and from that time on the birds knew little or nothing of cage life.

After the spring or, rather, late winter moult of 1898, Timmy and Driver began to sing as they had done in the two previous years. At this time friends, good field ornithologists, familiar with the conventional song of the Baltimore oriole, heard them both sing, and not having up to that time seen the birds, were at a loss to identify the song as being like anything they had ever heard.

Soon after Timmy and Driver began to sing, the 1897 birds one by one joined, and in a month all were singing a song not to be distinguished from that of the two older birds. They outlived Timmy and Driver a year or more and always sang as I believe they had been taught by older birds of their

own kind. In short, only six orioles have ever sung this song, for I pursued the experiment no farther, other matters interfering.

My conclusion is that two birds, *isolated from their own kind and from all birds*, but with a strong inherited tendency to sing, originated a novel method of song, and that four birds, *isolated from wild representatives of their own kind, and associated with these two who had invented the new song*, learned it from them and never sang in any other way.

WILLIAM E. D. SCOTT,  
*Curator of Ornithology.*

PRINCETON UNIVERSITY.

#### THE BOTANICAL SOCIETY OF AMERICA.

THE Botanical Society of America met in business sessions in Room 4 of the High School Building, Denver, Col., August 27 and 28, 1901, and presented its scientific program in joint session with Section G of the A. A. A. S. in the same place on August 28. The Presidential address on 'The Problems and Possibilities of Systematic Botany,' by Professor B. L. Robinson, was read by Dr. J. M. Coulter. The following program was presented:

'The Fundamental Phenomena of Vegetation': F. E. CLEMENTS.

'The Physical Basis of Ecology': F. E. CLEMENTS.

'A System of Nomenclature for Phytogeography': F. E. CLEMENTS.

'The Plant Formations of the Rocky Mountains': F. E. CLEMENTS.

'Early Winter Color of the Plant Formations of the Great Plains': C. E. BESSEY.

'The Anatomy of the Embryo and Seedling of *Tsuga Canadensis* Carr' (by invitation): W. A. MURRILL.

'Clues to Relationships among Heteroecious Plants': J. C. ARTHUR.

'The Thermal Relations of Vegetation': D. T. MACDOUGAL.

'The Application of Ecology in Taxonomy': F. E. CLEMENTS.

'Some of the Changes now taking place in a Forest of Oak Openings': W. J. BEAL.

'The Life-History of *Vittaria Lineata*': E. G. BRITTON and A. TAYLOR.

In accordance with the adoption of an amendment to the Constitution of the A. A. S., Drs. Bessey and Halsted were chosen to represent the Society on the Council of the Association at the sessions just finished.

A committee consisting of Drs. Wm. Trelease, N. L. Britton and B. L. Robinson was appointed to report upon the condition of the National Herbarium, and to recommend changes for its improvement.

As a result of consideration of the report of the committee on the policy of the Society appointed a year ago, it was resolved "That it is the present policy of the Society to accumulate invested funds until the annual income, interest and dues, is at least \$500, and then to use such income yearly, or at greater or less intervals, as circumstance may dictate, for the best advancement of botanical knowledge."

The address of the retiring President at the next annual meeting will be delivered by Professor B. D. Halsted, who presided over the session, and whose term of office has just expired.

The officers for the ensuing year are :

*President*, J. C. Arthur.

*Vice-President*, B. T. Galloway.

*Treasurer*, C. A. Hollick.

*Secretary*, D. T. MacDougal.

*Councillors*, C. E. Bessey and Wm. Trelease.

D. T. MACDOUGAL,

*Secretary*.

NEW YORK BOTANICAL GARDEN,  
BRONX PARK, N. Y. CITY.

#### THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

##### FELLOWS ELECTED AT THE DENVER MEETING.

John Almy, Instructor in Physics, University of Nebraska, Lincoln, Nebr. (B).

J. H. Appleton, Professor of Chemistry, Brown University, Providence, R. I. (C).

Howard Ayers, President, University of Cincinnati, Cincinnati, Ohio (F).

Solon I. Bailey, Associate Professor of Astronomy, Harvard University, Cambridge, Mass. (A).

Simeon E. Baldwin, Associate Judge of Supreme Court of Errors, New Haven, Conn. (I).

W. D. Bancroft, Professor of Physical Chemistry, Cornell University, Ithaca, N. Y. (C).

C. R. Bardeen, Anatomical Laboratory, Wolfe and Monument Sts., Baltimore, Md. (F, K).

A. E. Beardsley, Professor of Biology, State Normal School, Greeley, Colo. (F).

John Andrew Bergström, Associate Professor of Psychology and Pedagogy, Indiana University, Bloomington, Ind. (K).

Ernst A. Bessey, Department of Agriculture, Washington, D. C. (G).

Frank W. Blackmar, Professor of Sociology and Economics, University of Kansas, Lawrence, Kansas, (I).

E. M. Blake, University of California, Berkeley, Cal. (A).

Thaddeus L. Bolton, Department Philosophy, University of Nebraska, Lincoln, Nebr. (K).

Louis F. G. Bouscaren, Chief Engineer, Water Works Commission, Cincinnati, Ohio (D).

Charles L. Bouton, Instructor in Mathematics, Harvard University, Cambridge, Mass. (A).

Wm. L. Bray, Professor of Botany, University of Texas, Austin, Texas (G).

Lyman J. Briggs, U. S. Dept. of Agriculture, Washington, D. C. (B).

S. J. Brown, U. S. N., U. S. Naval Academy, Annapolis, Md. (A).

Lawrence Bruner, Professor of Entomology, University of Nebraska, Lincoln, Nebr. (F).

Edward F. Buchner, New York, N. Y. (H, K).

Luther Burbank, Horticulturist, Santa Rosa, Cal. (G).

E. S. Burgess, Botanist, 11 W. 88th St., New York, N. Y. (G).

E. A. Burt, Professor of Natural History, Middlebury College, Middlebury, Vt. (G).

William Cain, Professor of Mathematics, University of North Carolina, Chapel Hill, N. C. (A, D).

Florian Cajori, Professor of Mathematics, Colorado College, Colorado Springs, Colo. (A).

C. N. Calkins, Instructor in Zoology, Columbia University, New York, N. Y. (F).

F. K. Cameron, Bureau of Soils, U. S. Department of Agriculture, Washington, D. C. (C).

W. W. Campbell, Director, Lick Observatory, Mt. Hamilton, Cal. (A).

George L. Cannon, Instructor in Geology, Denver High School (No. 1), Denver, Col. (E).

H. W. Cattell, Pathologist, 3709 Spruce St., Philadelphia, Pa. (K).

Wm. M. Chauvenet, Mining Engineer, 620 Chestnut St., St. Louis, Mo. (C).