In this connection, it will be important to inquire whether any evidences exist of similar changes of climate in southern and Lower California? SERENO E. BISHOP.

Honolulu, Dec. 7, 1892.

### A Peculiar Eye.

RECENTLY, while dissecting the eye of a domestic animal, the crystalline lens was found to be divided into three lobes by deep clefts on the front (?) side. The lobes are equal and the clefts extend entirely through, so that the posterior surface is cut near the margin, making the lobes triangular in form with rounded outlines, and only slightly connected at the central point and for about one-half the radial distance outward. The eye had been kept several days, had been frozen, and was so opaque from drying and also from distribution of pigment through the aqueous humor that the interior was invisible before dissection, but one who saw the eye when quite fresh stated that it had an unusual appearance. The form appeared so remarkable to the writer that it is mentioned in the hope of drawing from some one better posted in the morphology of the lens some explanation of the peculiar structure. C. D. MCLOUTH.

Muskegon, Mich.

### Speech of Children.

APROPOS of Mr. A. Stevenson's interesting article on the speech of children, in *Science* for March 3, and Dr. Howard Lilienthal's communication in the succeeding number, it occurs to me, a bachelor who has never had much opportunity to become acquainted with young children, since he was a child himself, to inquire whether it would not be a rather difficult matter to teach a very young child the use of the first person, singular. Would he readily distinguish between the proper uses of the various words applied to himself: his name when he was spoken of, "you" when he was spoken to, and "I" or "me" which he should use in speaking of himself? Pronouns are, after all, only words used for convenience instead of nouns, and I cannot see why a person, young or old, cannot think of himself subjectively by his own name as well as by the use of the personal pronoun.

FRANCIS H. ALLEN.

West Roxbury, Mass., Mar. 20, 1893.

### Singing of Birds.

I SHOULD be greatly obliged for any communications respecting the relation of singing in birds to the expression of the emotions. I have, of course, in mind the rival theories of Darwin (origin of song by sexual selection) and Herbert Spencer (song expressive of joyful emotion in general). Does the male sing only, or principally, during the time of courtship? Or is the presence or answering call of the female immaterial?

Good observations can be made incidentally, and with very little trouble, on the commoner species. And the only approach to a settlement of the question seems through statistics. I hope that the readers of *Science* will assist me in investigating the matter on this basis. E. B. TITCHENER.

Psychological Laboratory, Ithica, N. Y.

## BOOK-REVIEWS.

*Third Annual Report of the Geological Survey of Texas*, 1891. E. T. Dumble, State Geologist. Austin, 1892. 461 p. Pl. 16.

THIS volume is quite a bulky one and contains information on a variety of subjects. The State geologist in his annual statement mentions the work that has been carried on during the year covered by the report and gives abstracts of the work of the various assistants. The papers accompanying the report are: Houston County, by W. Kennedy. In this county none of the formations are older than the Eocene. Various sections are given and a considerable portion of the report is devoted to economic geology. Mr. Kennedy also contributes a description of a section from Terrell, Kaufman County, to Sabine Pass, on the Gulf of Mexico. Many details of sections are given, which are of interest mainly to those familiar with the region. Mr. W. T. Cummins has a report upon the geography, topography, and geology of the Llano Estacado, with notes on the country to the westward. This is of considerable interest, as it touches upon a region of which comparatively little is known. The region is likely to be of considerable importance, however, in the development of the State, as recent discoveries have shown the possibility of securing water in sufficient quantity to permit of cultivation over the larger portion of its area. Mr. Cummins, in a foot-note, refers to the various theories advanced to account for the name, discarding them all and retaining at the last the name itself. We prefer to adopt the idea of Professor Hill that the name *Llano estacado* refers to the palisade character of the escarpment which nearly surrounds the area and makes it one of the most characteristic *mesas* of the country. The conclusions of Mr. Cummins in regard to the geological structure are that the Quaternary is represented in places on top of the Llano; the Tertiary is exposed at various places in cañons penetrating the edges of the Llano; that the Cretaceous underlies the southern part, forms part of the escarpment on the eastern and southwestern sides, and for a short distance along the northern side in the vicinity of Mt. Tucumcari, New Mexico; and, finally, that the Triassic forms the basal member of the escarpment on all sides. Water can readily be procured in almost all parts of the Llano, although not flowing artesian wells. A good idea may be had of the extent of the area when we observe that no less than 29 counties are included in it. The paper is followed by a discussion of the geology of Tucumcari, New Mexico, in which the author contends from the Cretaceous age of strata previously regarded by Marcou and Hill as Jurassic. It is rather singular that Mr. Cummins concludes that a single specimen of a fossil plant occurring in the beds "is sufficient to establish the fact that the strata are no older than the Cretaceous." This specimen is imperfect, the nervation is "indistinct," but it is concluded to be a dicotyledon, and upon this ground to be of Cretaceous age. The leaf is called *Sterculia drakei*, a new species, and seemingly a new genus.

Mr. N. F. Drake follows with a paper on the Triassic of Northwestern Texas, and Professor E. D. Cope and Dr. R. W. Shufeldt describe some vertebrates in another paper. Dr. V. Sterki gives a list of shells collected in a dry salt lake near Eddy, New Mexico, and J. A. Taff discusses the Cretaceous area north of the Colorado River. The last paper in the report is on "Trans-Pecos Texas," by von Streeruwitz.

It is unfortunate that the "Library Catalogue Slips" should not have been made with more regard to accuracy. In the three slips there are no less than thirteen errors. J. F. J.

*The Journal of Geology.* Vol. I, No. 1. January–February, 1893. Chicago, The University of Chicago. 112 p.

THE first number of a new publication dealing with scientific matters is always eagerly scanned. It was announced some time ago that the Chicago University expected to issue a magazine from its geological department, and the initial number of *The Journal of Geology* has now come from the press. Its editors are: T. C. Chamberlin, R. D. Salisbury, J. P. Iddings, R. A. F. Penrose, Jr., C. R. Van Hise, C. D. Walcott, and W. H. Holmes. There is besides a corps of associate editors: Sir Archibald Geikie (Great Britain), H. Rosenbusch (Germany), Charles Barrois (France), Albrecht Penck (Austria), Hans Reusch (Norway), Gerard de Geer (Sweden), J. Le Conte (California), G. K. Gilbert (Washington, D.C.), H. S. Williams (Yale University), J. C. Branner (Leland Stanford, Jr., University), G. H. Williams (Johns Hopkins), I. C. Russell (University of Michigan), and Geo. M. Dawson (Canada). These names ought to be a guarantee of an excellent journal. There are, to be sure, several journals already in the field, such as the *American Journal of Science*, the *American Geologist*, and the *American Naturalist*. The first two of these occupy the geological field to a large extent, and the third to a more limited degree. These are more or less dependent upon private enterprise, whereas the new *Journal of Geology* has the advantage, as an editorial states, "of being published under

the auspices and guarantee of the University of Chicago, and will be free from the usual embarrassments attending the publication of a scientific magazine." In other words, it will not be dependent upon a large list of subscribers for support. It is significant that the list of editors is largely made up of former members of the U. S. Geological Survey, but it is to be sincerely hoped that this will not prevent a free discussion in its pages of subjects upon which those outside of the Geological Survey happen to hold opinions opposed to those of the editorial staff. The editor-in-chief says: "It is our desire to open the pages of the *Journal* as broadly as a due regard for merit will permit, and to free it as much as possible from local and institutional aspects." He likewise states what may be assumed to be the field aspired to be occupied by the new *Journal*, when he says that "there seems to be an open field for a periodical which specially invites the discussion of systematic and fundamental themes, and of international and intercontinental relations, and which in particular seeks to promote the study of geographic and continental evolution, orographic movements, volcanic co ordinations, and consanguinities, biological developments and migrations, climatic changes, and similar questions of wide and fundamental interest." This is assuredly a high and broad field, and to successfully cultivate it will require an equally broad and cosmopolitan management.

All the leading articles in the present number are by members of the editorial staff. The table of contents includes the following papers: "On the Pre-Cambrian Rocks of the British Isles," by Sir Archibald Geikie; "Are There Traces of Glacial Man in the Trenton Gravels?" by W. H. Holmes; "Geology as a Part of a College Curriculum," by H. S. Williams; "The Nature of the Englacial Drift of the Mississippi Basin," by T. C. Chamberlin; "Distinct Glacial Epochs and the Criteria for their Recognition," by R. D. Salisbury. There are also editorials, a review of a paper by James Geikie, analytical abstracts of current literature, and acknowledgments of articles donated to the Geological Departments of the University. The *Journal* will be issued semi-quarterly at the price of $3 per annum.

*Proceedings of the Ninth Annual Convention of the Association of Official Agricultural Chemists.* Bulletin No. 35, U. S. Department of Agriculture, Division of Chemistry. 243 p. 8°.

THE report of the Proceedings of the Association of Official Agricultural Chemists is looked forward to with expectation by every analyst. The carefully recorded laboratory experience with the "old" methods and the suggestion and regulation of the new, form together a valuable annual hardly to be dispensed with by any engaged in practical analytical work. The report of the meeting held in Washington Aug. 25, 26, and 27, 1892, being the ninth of the series, is fully as interesting as those of previous years, and, moreover, there is a very apparent improvement in the nature and method of discussion. The contents are familiar to all, being in brief as follows: Address of the President, Mr. N. T. Lupton, report on dairy products, on phosphoric acid, potash, nitrogen, soils, ash, cattle foods, sugar, fermented liquors, etc., with papers on the particular determinations, and, in conclusion, the official methods adopted in each case for the coming year.

C. P.

*Matter, Ether, and Motion.* By A. E. DOLBEAR, Ph.D., Professor of Physics, Tuft's College. Boston, Lee & Shepard.

THIS book is written apparently for those who, having never made such a study of scientific work as would enable them to read scientific treatises, are disirous of getting a clear idea of the chief results of scientific investigation. For such this book will have a considerable value; which, however, would have been greater if the author had refrained from including a good many of his own theories. For instance, it is not good that the reader should be told, cocksuredly and in italics (pages 235–7), that "electricity is a phenomenon of rotating molecules." If the author had merely stated it as his own theory, the reader

CALENDAR OF SOCIETIES.

**Society of Natural History, Boston.**

April. 5. — George Lincoln Goodale, On Some Aspects of Australian Vegetation.