the gardener bower bird of New Guinea with its natural surroundings.

The American Naturalist for June contains the following articles: 'Observations and Experiments on Dragon Flies in Brackish Water,' by R. O. Osburn; 'Reactions of *Tubularia crocea* (Ag.),' by A. S. Pearse, and 'The Pressure and Flow of Sap in the Maple,' by K. M. Wiegand. This reviews the various theories that have been propounded and gives a summary of the recorded facts and their probable explanations, osmotic phenomena being considered the cause of the observed pressure with the resulting flow of sap.

SOCIETIES AND ACADEMIES.

THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE.

THE seventeenth meeting of the Society for Experimental Biology and Medicine was held in the laboratory of the Department of Health of New York on Wednesday evening, May 23. The president, Simon Flexner, was in the chair.

Members present: Atkinson, Auer, Dunham, Ewing, Field, Flexner, Gies, Hatcher, Lee, Levene, Mandel, J. A., Meltzer, Meyer, Norris, Opie, Park, Richards, Salant, Terry, Wadsworth, Wallace.

Abstracts of Communications.[1]

Analogies between the Phosphorized Fats Obtained from the Brain and Kidney, with exhibition of products: EDWARD K. DUNHAM.

The author has found that substances closely related to the lipoids derived from the brain may be obtained by similar methods from the kidney. In this communication the author gave chiefly his analytic data for kidney products resembling Thudichum's sphingomyelin and paramyelin.

[1] The abstracts presented in this account of the proceedings have been greatly condensed from abstracts given to the secretary by the authors themselves. The latter abstracts of the communications may be found in current numbers of *The Journal of the American Medical Association, American Medicine,* the *New York Medical Journal* and volume three of the Society's Proceedings.

The Toxicity of Indol: A. N. RICHARDS and JOHN HOWLAND.

A series of experiments on rats, guinea pigs and rabbits have shown that if the capacity of the cells of utilizing oxygen is diminished as by potassium cyanid, or chloroform, the intensity and duration of symptoms following the injection of definite doses of either indol or phenol are increased.

The experiments were made as a part of a study of the etiological factors in recurrent vomiting in children. At the beginning of these seizures there are signs of diminished oxidation (increased elimination of uric acid, neutral sulfur, lactic acid, aceton bodies) and an abnormally intense indican reaction. It is believed that failure to oxidize completely substances of the type of indol, results in the production of distinct mental symptoms and in the partial excretion of the substances into the gastro-intestinal tract. The disturbance induced by such substances is capable of producing nausea and vomiting.

The Formation of Urea: L. B. STOOKEY and A. S. GRANGER. (Presented by R. A. Hatcher.)

Subcutaneous injection of liver-extracts (dog) was found to lead, in the dog, to an increased elaboration of nitrogenous end-products into urea. Liver-extracts which had been heated to 55° C. were not found to possess this stimulative action. These results might indicate an enzymatic formation of urea. Further experiments are in progress.

The Effects on Embryonic Development of the Roentgen Rays Acting on the Spermatozoa of the Toad Previous to Fertilization: C. R. BARDEEN.

The results of the author's experiments may be briefly summarized as follows:

1. The spermatozoa of the common toad retain power of movement and fertilization for from one half to nearly three hours in a dish of lake-water at room temperature. On hot days they die sooner than on cool days.

2. Spermatozoa when under exposure of Roentgen rays die sooner than when not thus exposed.

3. When spermatozoa are exposed to the

rays so long that very few are capable of fertilizing ova, the eggs thus fertilized usually do not develop into larvas, but they may do so.

4. When spermatozoa have been exposed for a considerable period to the Roentgen rays and yet are still capable of fertilizing a considerable proportion of eggs placed in the same dish, the eggs seem to develop normally at first, but beyond the gastrula stage the development becomes retarded and the resulting larvas are markedly deformed. These deformities are quite varied. In one larva, for instance, a considerable part of the central nervous system and the gills were undeveloped on one side, while the abdominal viscera were developed only on that side. In another the central nervous system was abnormal on both sides and the alimentary canal quite defective. Considerable further study is necessary to determine accurately the nature of all the abnormalities present in the various monsters the author has preserved. Apparently all are defect abnormalities. From the results obtained it may also be concluded:

1. That nuclear material may be so influenced by exposure to the Roentgen rays that after a latent period it will call forth marked abnormalities in development.

2. That injury to spermatozoa capable of fertilizing ova may cause the development of monsters from the ova thus fertilized.

A Vago-esophageal Reflex: S. J. Meltzer and John Auer.

The general knowledge of the contractions of the esophagus is confined to the peristaltic movements, that is, the consecutive contractions of the successive parts of the esophagus following a normal deglutition, or, as it was described by Meltzer at a previous meeting of this society, after an injection of liquid or insufflation of air directly into the esophagus. A simultaneous contraction of the entire esophagus can be produced only by stimulating the peripheral end of the vagus when cut in the neck.

The authors discovered that in dogs a tetanic contraction of the entire esophagus can be caused also by reflex ways. When the vagus is cut in any part of the neck, an electric stimulation of its central end causes a prompt longitudinal and circular contraction of the entire esophagus, which lasts as long as the stimulation continues. Particulars and other interesting facts connected with this observation will be reported later.

Ion Protein Compounds, with Exhibition of Products: William J. Gies.

The author drew attention to the desirability of studies of definite compounds of proteins, and described a method of preparing dissociable inorganic salts of glucoproteins and nucleoproteins. Numerous lines of investigation that have been opened by this observation were discussed and are in progress.

Some Facts Showing that the Brain Educts Termed Phrenosin (1874) and Cerebron (1900) were Practically the Same: William J. Gies.

A careful study of the chemical facts regarding phrenosin and cerebron has convinced the writer that these two brain educts were essentially the same. The name cerebron appears to be superfluous, although the preparation called cerebron has been studied more thoroughly than the other.

A Simple Electrical Annunciator for Use in Metabolism Experiments, and in Connection with Filtration, Distillation and Similar Operations, with Demonstration: William H. Welker. (Communicated by William J. Gies.)

The annunciator shown to the society consists of two square boards ($4\frac{1}{2} \times 4\frac{1}{2} \times \frac{3}{8}$ inch) securely fastened together with a piano hinge on one side, and kept apart by a spring perpendicularly arranged at the opposite side in such a way as to permit a definite pressure to force the surfaces of the boards together. The spring can be adjusted so as to increase or decrease, within considerable limits of weight, the amount of force (weight) required to bring the boards in contact. In the opposed surfaces of the boards platinum electrodes (plate and points) are so placed that perfect contact between them is effected when the boards are brought together and the circuit is closed. The electrodes connect with binding posts on the hinged side. A small dry cell is

used. The entire apparatus, including bell attachment, may be placed on a surface 5 x 8¼ inches. The bell employed directly with the apparatus is a small one with delicate musical sound. Its ringing does not disturb the animal. It is obvious, of course, that the apparatus may be connected with a bell in a room some distance from that in which the animal is kept.

In the demonstration it was shown that the apparatus announced the deposit in an ordinary urinary receiver placed on it of volumes of water less than 5 c.c. The apparatus may be adjusted to announce delivery of a volume as small as 1 c.c. and may be made, in larger sizes, to announce the deposit of masses of any desired weight.

The annunciator was made especially for use with Gies's metabolism cage, in connection with its urine receiver.

Some Observations on the Presence of Albumin in Bile: WILLIAM SALANT.

The author's results thus far, although not uniform, make it seem probable that the albuminocholia that results from poisoning with ethyl or amyl alcohol, as observed in animals with permanent fistulas, might have been due to irritation of the bladder and perhaps only slightly to lesions in the liver. The question whether albumin passes more readily into the bile than it does into the urine was also studied. The results in every instance examined showed considerable quantities of albumin in the urine after poisoning with amyl alcohol.

More decided effects were obtained with ricin, which seemed to cause the appearance of considerable albumin in the bile.

WILLIAM J. GIES,
Secretary.

THE UNIVERSITY OF COLORADO SCIENTIFIC SOCIETY.

DURING the months of April and May the society held seven meetings, at which papers were presented as follows:

PROFESSOR E. C. HILLS: 'Esperanto, the new Universal Language.'

DR. F. R. SPENCER: 'The Prevalence of Nearsight and the Reasons for its Development.'

PROFESSOR CHARLES B. DYKE: 'Hawaii and its People.'

PROFESSOR JOHN B. PHILLIPS: 'The Divorce Problem.'

DR. H. B. LEONARD: 'Practical Results of Higher Mathematics.'

DR. O. M. GILBERT: 'Death due to Embryonic Structures.'

MR. G. S. DODDS: 'The So-called Artificial Creation of Life.'

Officers for the coming year were elected as follows:

President—Professor William Duane.
Vice-president—Dr. O. M. Gilbert.
Secretary—Mr. G. S. Dodds.
Treasurer—Professor John A. Hunter.

FRANCIS RAMALEY,
Secretary.

BOULDER, COLO.,
June 1, 1906.

DISCUSSION AND CORRESPONDENCE.

COLLEGE ENTRANCE EXAMINATIONS.

TO THE EDITOR OF SCIENCE: Professor Thorndike's article on 'College Entrance Examinations' in SCIENCE for June 1 seems to me so timely and so important that teachers who agree with the general substance of it may well say so. An experience of something like twenty-five years, mostly in secondary schools, has led me to take the same view of the matter which Professor Thorndike has so thoroughly set forth. It would be worth while to get the principal of some large fitting school to give in considerable detail his experiences in regard to the inadequacy of the entrance examination to test the boy's fitness for college. I will not in this place undertake to give detailed evidence, but only to cite a few instances which occur to me at once in regard to the imperfectness with which examinations test the attainments of the student. I have known of a class in science in a very highly respected private preparatory school securing the signature of the instructor to the laboratory note-books before his departure for Europe some weeks before the end of the school year. After the signature was affixed, the ablest boy in the class completed by himself a large portion of the whole year's