vascular dilatation. The motor nerves are entirely unaffected. The red blood corpuscles are often rendered spherical by the poison, and, outside the body at least, the blood may be laked. The secretion of urine is stopped. Death usually results from respiratory paralysis, though, in case artificial respiration is maintained, death ensues from cardiac failure. Lafayette B. Mendel communicates four brief contributions to physiological chemistry from the Sheffield Laboratory of Yale University. In the first of the papers Professor Mendel gives an analysis of three species of West Indian corals examined for iodine and declares that for many organisms iodine is as essential an element as is chlorine for others. The second paper, 'Glycogen formation after inulin feeding,' by R. Nakaseko, concludes with the statement that for the rabbit at least, the glycogen-forming properties of inulin must still be regarded as uncertain or minimal. G. A. Hanford's work on 'The influence of acids on the amylolytic action of saliva,' shows the impossibility of designating any percentage of acid or alkali which inhibits salivary digestion in a definite degree. The absolute amount of saliva and the attendant variation in the quantity of proteid matter present determine the character of the action. *Free* hydrochloric acid is certain to cause more or less complete inhibition of salivary action. The fourth contribution, by J. H. Goodman, 'On the connective tissue in muscle' is an account of experiments proving that the substance in muscle connective tissue described by Schepilewsky as mucin, is neither a glycoproteid nor a nucleoproteid, but resembles the *stroma substance* described by J. von Holmgren. B. Moore and W. H. Parker report a study of the effects of complete removal of the mammary glands on the formation of lactose. This research consists of an examination of the urine for sugar during gestation and at the time of parturition after complete extirpation of the mammary glands. If lactose be formed elsewhere than in the mammary glands it should appear in the blood at parturition and hence in the urine. The mammary glands of two goats were removed after several weeks of gestation. Parturition took place normally in both cases and the urine contained no reducing sugar. The authors believe that lactose is formed in the cells of the mammary gland and not from any intermediate substance carried to the gland by the blood.

DISCUSSION AND CORRESPONDENCE.

THE COPYRIGHT OF UNIVERSITY LECTURES.

To the Editor of Science: In commenting on the decision of the House of Lords in the *Times* v. Lane case, you say (Science, Aug. 24, p. 319), "Perhaps the lectures given to a class of students, * * * are not made public." On appeal from the Supreme Court of Scotland, this was, however, decided by the House of Lords just fifteen years ago, in the famous case of Caird v. Sime. Sime was a second-hand bookseller in Glasgow, who sold many textbooks to the students of that University. He conceived the idea that he might turn a penny by getting the lectures of Edward Caird, professor of moral philosophy, then the most influential teacher in the University, and publishing them. He did so. The Scotch Courts decided against Caird, but on appeal to the House of Lords the decision was reversed, and a professor or lecturer was held to have his own copyright. It is curious to note, looking to the decision of the Scottish Court in the Caird case, that the minority in the *Times* case in the House of Lords was the Scottish member of the Court of Final Appeal. R. M. Wenley.

THE INTERNATIONAL PSYCHICAL INSTITUTE.

To the Editor of Science: Observing that my name figures in Bulletin No. 1, July, 1900, of the 'Institut Psychique International' as the member of the Council of Organization for America, I find myself compelled to state publicly that this appearance of my name is unauthorized. William James.

Nauheim, August 24, 1900.

THE FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

It appears difficult to secure any information in regard to the French Association for the Advancement of Science. We have been unable to get programs by addressing the officers of the

Association, and the French Scientific Journals do not contain any regular announcements or reports of the meetings. The address of the President, General Sebert, before the Paris meeting is, however, published in several journals and the report of the Treasurer is printed in full in the *Revue Scientifique*.

M. Sebert reviewed the progress of mechanical science, and devoted the last third of his address to an international catalogue of scientific literature. It is rather curious that he does not in any way refer to the International Catalogue, but states that the problem is being solved by the Institut International de Biographie, established by MM. Lafontaine and Otlet in Brussels in 1895. The Dewey system of classification is adopted by them, and M. Sebert devotes a considerable part of his address to explaining the system which he advocates in warm terms.

The finances of the French Association are of interest. The capital amounts to 1,326,917 fr., chiefly due to legacies such as the American Association has never received. The income last year was about $17,000, of which nearly $7000 was income from the capital and about $10,000 represented the dues of members. These figures apparently are much more favorable than those of the American Association, in which the income from permanent funds was last year $233 and receipts from members $6216. It appears, however, that, owing to the cost of the volume of proceedings and of administration, the expenses of the French Association are considerably larger than the receipts from the annual dues of members, whereas, during the past two years, the American Association has been able to transfer to the permanent funds a portion of the dues received from members.

Although about half of the interest on the capital is used for current expenses, there is still a considerable sum—about $3000—which is annually awarded for the promotion of research. Among the larger grants made last year were: $300 to M. Giard for the publication of papers from the laboratory at Wimereux; $300 to M. Deniker for the publication of his book on the races of Europe; $240 to M. Lacaze-Duthiers towards repairing the steamboat of the zoological laboratory at Arago, and $200 to M. Turpain for researches in telegraphy by Hertzian waves.

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*THE ELECTRICAL EFFECTS OF LIGHT UPON GREEN LEAVES.**

IN the preliminary communication recently made to the Royal Society, the author shows how, from the study of the electrical effects of light upon the retina, he was led to ask whether the chemical changes aroused by the action of light upon green leaves are also accompanied by electrical effects demonstrable in the same way as the eye currents. The question is tested in the following way: A young leaf freshly gathered is laid upon a glass plate and connected with a galvanometer by means of two unpolarizable clay electrodes A and B. The half of the leaf connected with A is shaded by a piece of black paper. An inverted glass jar forms a moist chamber to leaf and electrodes, which are then enclosed in a box provided with a shuttered aperture through which light can be directed. A water trough in the path of the light serves to cut out heat more or less. Under favorable conditions there is obtained with such an arrangement a true electrical response to light, consisting in the establishment of a potential difference between illuminated and non-illuminated half of a leaf, amounting to 0.02 volt.

The deflection of the galvanometer spot during illumination is such as to indicate current in the leaf from excited to protected part. The deflection begins and ends sharply with the beginning and end of illumination; it is provoked slightly by diffuse daylight, more by an electric arc-light, most by bright sunlight. It is abolished by boiling the leaf, and by the action of an anæsthetic, carbon dioxide.

The first experiments, made at the end of March, were upon iris leaves taken from plants about six inches high, and the response to light was then between 0.001 and 0.002 volt in value. Experiments upon similar leaves were resumed early in May, when it appeared that the external condition in which the state of the leaf is

* Abstract of a paper presented before the Royal Society by Augustus D. Waller, M.D., F.R.S., and published in *Nature*.