and each claimed the privilege of stretching its work over the whole unsurveyed area of the West. Thus in this year each party had geological and topographical parties covering the same ground in Colorado, which was a deplorable dissipation of energy when so much ground was untouched by either party. As time went on, this friction increased to such an extent that the influence of one party with Congress was used to curtail the appropriations allotted to the other.

At first glance it would seem that such disagreement among men, whose sole object was avowedly the advancement of science, was most unfortunate, but here again the truth of the old saying about an 'ill wind' was again proved, for Congress, unable to decide of itself on the merits of the contending parties, referred the matter to a committee of the National Academy of Sciences, and, acting on their report, passed a bill terminating all the previously exististing explorations and creating the United States Geological Survey. Thus, instead of a number of rival organizations with no necessity of concordant action between them, and each liable to pass out of existance at any time by the failure of Congress to pass its annual appropriation, there has resulted the present organization, which forms a constituent part of the Department of the Interior, and has thereby acquired a permanence which invites the best scientific talent of the country to take part in its work.

S. F. EMMONS.
U. S. GEOLOGICAL SURVEY.

PROFESSOR EUGEN BAUMANN.

ON the 2d of November, 1896, occurred the death of Dr. Eugen Baumann, professor of chemistry in the medical faculty of the University of Freiburg, in Baden. The deceased was born in Würtemberg, in 1846, and obtained his early education at Stuttgart. After studying chemistry, physics and natural sciences, at the Stuttgart Polytechnicum, where he worked under Fehling, he served an apprenticeship as apothecary in his father's employment, and in 1870 passed the pharmacists' examination at Tübingen. This was the occasion of his first meeting with Hoppe-Seyler, to whose encouragement and inspiration his career as an investigator owed its beginning. A life-long friendship was formed between the two men, and only a few months before his death Baumann paid fitting tribute to his great teacher in an obituary published with Kossel.*

Already an assistant to Hoppe-Seyler, Baumann obtained his doctor's degree at Tübingen, in 1872, with a dissertation on vinyl compounds.† When Hoppe-Seyler was called to take charge of the instruction in physiological chemistry in the newly opened German university at Strassburg, Baumann accompanied him thither as his first assistant, and in 1876 became 'Privatdocent' in chemistry. At the opening of DuBois Reymond's new physiological institute at Berlin, in 1877, Baumann was appointed to have charge of the chemical laboratory; upon his departure from Strassburg the medical faculty honored him by conferring the degree of doctor medic. *honoris causa*. In 1882 Baumann was appointed professor extraordinarius in the Berlin medical faculty, and in October, 1883, he accepted a call as successor to v. Babo at Freiburg, where he labored without interruption until his death. He declined the call to succeed Hoppe-Seyler at Strassburg and only recently the title of 'Hofrat' was bestowed upon him.

Baumann's earliest researches were intended to throw light upon the behavior of sarcosin in the organism. To this period belong the beginnings of the researches on the aromatic substances of the body—a

* Zeitschrift für Physiologische Chemie, Band 21.
† Ann. Chem. Pharm. Band 163. S. 308.

field of work which occupied Baumann's attention during his entire life. The observation that phenol bodies constantly present in the urine are not derived from the aromatic substances in the vegetable foods was followed by the important discovery that these bodies are excreted combined with sulphuric acid in the form of ethereal sulphates. With the isolation of these compounds (*e. g.*, phenyl- and cresylsulphates) there was introduced into physiology the knowledge of a new class of syntheses in the organism, comparable to the well known synthesis of hippuric acid. The finding of phenol as a putrefaction product of proteids led to the announcement that the aromatic substances of the urine largely owe their origin to the putrefactive decomposition taking place in the alimentary tract. The products, many of them strongly toxic, are absorbed and reappear in relatively harmless combination with sulphuric acid. Ethereal sulphates were shown to be absent in the urine when intestinal putrefaction is totally suppressed, and physiologists have come to look upon the quantity of combined sulphuric acid excreted as the best indication of the intensity of the decomposition in the intestine. The so-called 'indican' of the urine was also drawn within the scope of these investigations and was shown to be quite distinct from the vegetable glucoside indican, although yielding indigo on oxidation. After Jaffé had demonstrated that the chromogen of the urine is derived from indol, Baumann and Brieger proved that it is in reality an ethereal compound of indoxyl with sulphuric acid, analogous to those already mentioned. It is scarcely necessary to remark that these discoveries have had a far-reaching influence on practical medicine.

The behavior of sulphur compounds in the animal organism was another favorite theme to which Baumann and his pupils contributed extensively. The study of the compounds of mercapturic acid which can be obtained under appropriate conditions in the urine, yielded the proof that there is formed in intermediary proteid metabolism an atom-complex closely related to the organic sulphur compound cystin, excreted as such in the rare cases of so-called cystinuria. It was shown that the cystin is accompanied under these circumstances by at least two diamines (putrescine and cadaverine) which are found in both urine and fæces. The peculiar perversion of metabolism known as alcaptonuria was also shown to owe its peculiarities in many instances to a dioxyphenylacetic acid, the synthesis of which was accomplished in the Freiburg laboratory.

Among Baumann's pharmacological investigations may be mentioned in particular his researches on the sulfones, which led to the discovery of several widely used hypnotics: sulfonal, trional, etc. Together with Kast and others he studied their physiological action and demonstrated that only those are effective which are transformed in the body, the intensity of their action being dependent upon the number of ethyl groups present.

Scarcely more than a year ago the finding of iodine as a normal constituent of the animal body and the isolation of thyroiodin (iodothyrin), the physiologically active substance of the thyroid glands, aroused the interest and admiration of the medical world. Baumann was actively engaged in the solution of many problems suggested by this last great discovery when, after an illness of only two days, death put an end to a brief but brilliant career.

It is impossible in a brief sketch to give more than an outline of some of Baumann's contributions to physiological chemistry. His loss will be felt not alone by chemists, but also in the broader circle of investigators in scientific medicine; for Baumann exercised a wide influence as a teacher, as

well as through his permanent researches. Among those who benefited by his guidance may be mentioned the names of Brieger, Goldmann, Herter, Hürthle, Kast, C. Th. Mörner, Preusse, Röhmann, Schotten v. Udránszky, N. Wedenski. One who came into personal contact with the man could not fail to admire his untiring devotion to science, and to feel grateful for the inspiration derived from him.

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ALFRED TRESCA.

THE session of November 27, 1896, of the '*Société d'Encouragement pour l'Industrie nationale*,' under the presidency of M. Mascart, was devoted mainly to ceremonies in memory of the late M. Alfred Tresca, recently deceased. The discourse pronounced by M. Haton de la Goupillière was the main feature of the evening programme.

Monsieur A. Tresca was the son of the distinguished investigator, Henri Tresca, who was the successor of General Morin as the head of the *Conservatoire des Arts et Métiers*, and who followed and improved upon the methods of the latter in the prosecution of researches of importance in the field of applied science, and especially in the investigation of the characteristics of the materials of construction and of the most important classes of prime movers and other machines. The younger Tresca followed in the same path and gave his life to similarly valuable work. The three men have lead rather than followed in all developments in their department of work during the century. The work of Morin on the properties of the materials of engineering and his extensive introduction, in original ways, of graphical methods of illustration, the extensive study by the elder Tresca of the heat-motors, and the researches of the younger Tresca in applied physics and engineering, have been the principal contributions of the *Conservatoire*, for many years past, to their department of science. It is an interesting case of 'intellectual heredity,' as the writer has called it. A personal acquaintance, slight, but quite sufficient to confirm the conclusions here reached, impressed the writer also with the fact that the influence of each upon his successor, in this respect, was deep and most effective of result. The three men, talented, industrious and persistent, by similar methods accomplished similarly useful work.

As M. Haton says: "Inheritor of a name illustrious in science and honored also for services rendered our society, he has firmly upheld its prestige. Trained in the school of his father, Henri Tresca, he learned the traditions of industrial science, that difficult science, and, at the same time, traditions of honor and of labor to which he was always faithful." He was always inclined to avoid public notice, "but his colleagues, his students, unanimously render just tribute both to the extent of his work and to its value in instruction." The address closes with an affectionate and graceful tribute of esteem and admiration, of grief and of eulogy.

R. H. T.

CURRENT NOTES ON ANTHROPOLOGY.

ANCIENT MAYAN HISTORY.

A YUCATECAN author, Don Juan Francisco Molina Solis, has recently written a meritorious history of Yucatan (Historia del Descubrimento y Conquista de Yucatán, pp. 911. Merida, 1896). By way of introduction it has a sketch of the ancient history of the peninsula, covering sixty pages

This discusses the early immigrations, the foundation of the great cities, the establishment of the confederation which for some generations appears to have controlled the peninsula and allowed a peaceful development of its culture, and its unfortunate violent dissolution leading to the destruction of the former mart of Chichen Itzá