efforts of other investigators. Many scholars have, since his book was written, made the long pilgrimage to the desert mesa to witness the ceremony, and some have spent years in studying the rite without yet learning all that there is to be known.

In 1895 Captain Bourke received two well earned tokens of the recognition of his work. He was elected Secretary of the Section of Anthropology of the American Association for the Advancement of Science and President of the American Folk-Lore Society.

As a writer, Captain Bourke displayed great power. In his scientific treatises he was clear and concise; in his popular works, entertaining, witty, and, to a high degree, graphic. His pictures of early days in Arizona and of wild life on the Western frontier have, in their way, not been excelled; while some of his descriptions of Indian campaigns and battles stand unrivalled in the literature of modern warfare.

Captain Bourke was only 53 years of age when he died—an age when men are often in the fullest exercise of their intellectual powers. Only a few months before his death he told the writer, in a letter, that he hoped soon to get retired from active duty, on account of length of service; to make Washington his home and to devote the remainder of his life to the study of American Ethnology. What a hope was here held out for Science! What a pleasant anticipation to the writer, who looked forward to frequent association, in congenial pursuits, with his valued friend! "Oh Death! Where is thy sting?" It is here. In our hearts we feel it. It will abide with us forever.

Our loss is irreparable. Some say that the loss of no man is irreparable and that where one falls, another as good takes his place; but with our subject such is not the case. The life he experienced, the scenes he witnessed, many of the customs which he had studied and had not described to the world are part of an irrevocable past. The 'sea of change' sweeps as a tidal wave over all that belongs to our aborigines. Many reminiscences stored in his memory are buried with him.

But while the world of science may mourn in its formal way, it is to the intimate friends of Captain Bourke that his loss is deeply painful. He was a man of the most charming personality. In his serious moods his conversation was wise and instructive, while, for his gayer moments, his wide experience and close observation had given him an inexhaustible fund of narrative. He was an excellent mimic and always told his story to the best advantage. He was not only a humorist, but a decided wit, and he had the rare faculty, when uttering his wittiest sayings, of assuming a sad expression of face which might put to shame 'The Knight of the Sorrowful Countenance.'

A gallant soldier, a chivalrous gentleman, a scholar of rare acumen, a faithful friend, a dutiful son, a loving husband, a devoted father; such was the comrade over whose grave the bugle has sounded 'taps' on the Heights of Arlington.

Washington Matthews.

THE BOTANICAL SEMINAR OF THE UNIVERSITY OF NEBRASKA.

The Botanical Seminar of the University of Nebraska celebrated its decennial on October 10th. The Seminar was founded on October 11, 1886, as a quasi-fraternal organization of seven students in the botanical department. It soon grew into a serious botanical society, and since 1888 has been maintained as such by graduate students in botany in the University. It is a unique example of a society without constitution, by-laws, or written rules of any sort. No election has ever been held, no motion has ever been made and no formal vote has

ever been had upon any subject at its meetings. But the society has developed a traditional constitution of some complexity that is closely followed. Although it now exists solely as a scientific society connected with the botanical department of the University, many traces of its original character remain, such as the seal, the designations of the officers and the method of determining them, certain ceremonies of initiation, etc.

The decennial exercises were begun by a public meeting in the afternoon. At this meeting, announcements were made of five public meetings for the reading of papers to be held during the year, and two 'symposia,' or oral discussions of certain subjects under the leadership of one member. It was also announced that Dr. William Trelease would deliver the annual address before the Seminar in May next. Prof. Bessey read a paper entitled 'The Evolution of a Botanical Journal,' which is published in the *American Naturalist* for December. Mr. Clements read a paper on 'The Plant-formation as an Element.' Mr. Pound read a 'Report on the Work of the Seminar 1886–1896.' The following items are taken from this report:

The Seminar maintains four grades of membership, two for graduates and two for undergraduates, known as socii, ordinarii, novitii and candidati. Since the reorganization of the Seminar, all but socii have been required to submit to an oral and a written examination for each grade by examiners appointed by the Seminar. Fourteen examinations have been held and seven members have been admitted under this system. The subjects examined upon have been Anatomy and Morphology of Anthophyta and Pteridophyta, Physiology, Morphology and Development of the Lower Plants, Embryology of the Anthophyta, Taxonomy, Bibliography, History of Botany, Nomenclature, the Flora of Nebraska and Spencer's Principles of Biology. Twenty members have taken part in the work of the Seminar since its organization, of whom eight are now resident. Two students are now preparing for examination.

Since 1888 forty-five meetings have been held for reading papers, at which one hundred and fifteen papers have been read. About twenty-five of these have been published in various scientific periodicals. The titles of the papers read show great improvement since the Seminar began to hold such meetings. Among the title of papers read the first year are: 'The present Status of the Algo-Lichen Hypothesis,' 'History of the Classification on Fungi,' 'Buchloë and its Relatives,' 'The Homologies of the Uredineae.' In 1894–95 some titles are: 'Some Observations on Transpiration,' 'Sketch of a Revision of the Mucoraceæ,' 'The Derivatives of the Apical Cell in Beta vulgaris,' 'Recent Discoveries as to Cell-division.' In 1895–96 among the papers read are: 'The Phytogeography of the Little Blue Valley,' 'The Muciferous Canals in the Laminariaceæ,' 'The Position of the Ovule in Ranunculus.'

In 1895 the custom of an annual address by a botanist of note was established. Dr. Coulter delivered the first of the series. Professor MacMillan followed in May, 1896, and in May, 1897, Dr. Trelease will deliver the address. In addition, short talks have been made to the Seminar by Dr. Coulter, Dr. Burrill, Professor A. S. Hitchcock and Professor MacMillan.

In 1892 the Seminar undertook the Botanical Survey of Nebraska. When Dr. Bessey came to Nebraska, in 1884, no proper work had been done upon the flora of the State. An extensive and pretentious catalogue and several pretentious lists had been put out, but they were based on conjecture as to what should be in the State rather than on observation and collection, and were entirely unreliable. In 1886 the members of

the Seminar began to take up the work of investigating the flora of the State, and in 1890 Mr. Webber, one of the original members, put forth a catalogue enumerating 1890 species. The next year he published an appendix containing 432 additions chiefly made by members of the Seminar, and, hard on the heels of this appendix, Dr. Bessey issued a supplement raising the number of reported species to 2492. To keep up this work and to give it system, the Survey was organized. This Survey is conducted and directed by the Seminar and is maintained entirely by the individual members without public assistance of any sort. Its fruits are four reports in which the reported flora of Nebraska is raised to 3196 species, a herbarium of 7500 specimens representing the flora of the State, and five important expeditions which have made possible an exact phytogeographical districting of the State. In consequence, Nebraska has come to be recognized as one of the best known States botanically in the country. The Seminar now has in preparation an elaborate report on the phytogeography of the State for which it has been gathering materials for many years.

A more ambitious undertaking has been the publication of the Flora of Nebraska, of which three parts have now been issued and two more are under way. The Flora has been fairly successful financially, and in other respects its success is unquestioned. In addition to the Flora and the Reports of the Survey, the Seminar has published two addresses delivered before it.

Of the eleven who have taken part in the work of the Seminar as ordinarii, four are now employed in the United States Department of Agriculture, namely, Mr. Smith, Mr. Webber, Mr. Williams and Mr. Woods; another is professor of Botany in a State Agricultural College, and another holds the botanical fellowship at Columbia University. All of them have become known through their published work, and they are all busily engaged upon other publications of importance.

At the close of the public meeting, Mr. Ernst A. Bessey was initiated as a novitius, having taken the required examinations. Letters were next read from absent members and friends of the Seminar and also letters which had been received from botanists and scientific men. Thereafter a 'symposium' was held, led by Dr. Bessey, upon the subject of the Laboratory Method. By way of introduction, Dr. Bessey spoke of the history and the development of botanical laboratories in the United States, and the present differentiation into histological and physiological laboratories. The future of botanical laboratories was then discussed, Dr. Bessey, Dr. Ward, Professor Bruner, Mr. Pound and Mr. Clements taking principal parts in the discussion.

In the evening, Dr. H. B. Ward delivered the anniversary discourse, before the Seminar and invited guests. His subject was 'Tendencies in Biological Investigation.' It would not be possible to do justice to the discourse by such a synopsis as could be given here.

At the close of the discourse the Seminar and its guests sat down to a collation served in the histological laboratory, which had been suitably fitted up for the occasion. Mr. Roscoe Pound, who acted as toastmaster, spoke for the 'Original Seven,' the founders of the Seminar. Mr. Clements responded for the 'Epigoni.' Professor Bruner responded to 'Canis Pie,' the emblem of the Society, and explained its appropriateness. Dr. H. K. Wolfe, in speaking on 'Philosophia Botanica,' said that the history of botany differed from that of most other sciences in that its progress had been uninterrupted by convulsions or catastrophes and it had kept moving. He had wondered if this might be due to the fact that Aristotle's work on plants was lost, so that the grasp

of antiquity was less strong than elsewhere. "In spite of this constant growth," he continued, "there have appeared few great generalizations in botany, and so it is not absolutely correct to speak either of a botanical philosophy or of a philosophical botany. In common with all branches of biological science, botany must rest content with details and small excursions into neighboring fields of common interests. This is the fate of all modern investigation."

Dr. Bessey responded to 'How I manage the Boys.' He said that the fact was the boys managed him. He was like the prudent driver of a team, who, when he saw it was about to stop, pulled the reins and cried 'whoa,' or like the man who 'manages' his household, or like the meteorologist who manages the weather. As to the relation of the Seminar to his department, he said it must be remembered that the Seminar had grown up as an independent society and was not a part of the department. It was an ally—a close friend. Its help was like the help that a good wife is to a man, and the same kind of 'management' existed in each case. He had always adhered to Joseph Henry's rule; he let the boys work, and let them take up any line they would without restraint.

Responses were made by Dean Sherman, of the chair of English literature, who commented favorably upon the fraternization of scientific savants and literary scholars, who aforetime were too much inclined to fall upon each other by the way, and by the Chancellor of the University, who saw in the present occasion the beginning of a closer union of the workers in the different fields of science in the University, as well as the promise of higher and broader work such as should be found among scholars; "the work of the Seminar is true university work, and the spirit it fosters is that which is the peculiar feature of the genuine university."

*FOURTEENTH ANNUAL REPORT OF THE COMMITTEE ON INDEXING CHEMICAL LITERATURE.**

THE Committee on Indexing Chemical Literature presents to the Chemical Section its fourteenth annual report. During the year ending August, 1896, there has been exhibited much activity in chemical bibliography and indexing; several valuable works have been completed and many important undertakings have been begun.

WORKS PUBLISHED.

A Dictionary of Chemical Solubilities. Inorganic. By ARTHUR MESSINGER COMEY. New York and London. 1896. pp. xx+515. 8vo.

Prof. Comey is to be complimented on the completion of the first part of his extensive undertaking, and chemists are to be congratulated on the publication in such good form of so important an aid to research. It is to be hoped that this volume will be so well received as to encourage the author to follow promptly with the organic section.

Index to the Literature of the Detection and Estimation of Fusel Oil in Spirits, by W. D. BIGELOW. *J. Amer. Chem. Soc.*, Vol. xviii., No. 4, p. 397.

This was announced in our report for 1895.

Bibliography of Embalming, in a Thesis entitled: 'Embalming and Embalming Fluids,' by CHARLES W. MCCURDY (of the University of Idaho). *Post-graduate and Wooster Quarterly*, April, 1896.

A very full bibliography of this unique subject, which has its chemical aspects as well as its grave ones. It comprises about 500 entries, in several modern languages, arranged alphabetically by authors.

* Presented at the Buffalo Meeting of the American Association for the Advancement of Science.