SCIENCE

FRIDAY, JULY 22, 1887.

THE SESSION of the National Educational Association at Chicago last week was a notable occasion. It was estimated by a competent authority that sixteen thousand teachers were assembled in the Exposition building when the opening session was held. Coming as they did from all parts of the country, — several of the Southern States excepted, — they were representative of the American public school in all its grades and phases. They were assembled to listen to the discussion of important questions, to talk together informally of school matters, and to view the great exhibition of educational material that was prepared for them. Despite the fact that several of the prominent speakers were not able to be present, the discussions were well sustained and attentively followed. The majority of the teachers present took more interest in the meetings of the sections devoted to matters of special interest than in the general meetings. It was very satisfactory to notice the ground gained by the advocates of manual training during the past year. This was clearly evidenced by the approval accorded to all references to it, by the character of the address by the President of the Chicago Board of Education, and by the great interest displayed in the exhibits of the work done at Chicago, Toledo, Cook County Normal School, and elsewhere. The exhibition was very complete, and well worth going a long distance to see. The States of Illinois, Wisconsin, and Michigan were particularly well represented. One fact was thoroughly demonstrated by the convention; namely, that despite the excitement and enthusiasm attendant on a large assembly, the Association's annual meeting has grown so large as to be unwieldy. Very many cannot hear what is going on, and very many more are dissatisfied at being afforded no proper opportunity to participate in the proceedings, while a few others who have long ago said all that they had to say that was worth hearing, continued to read papers and lead the discussions. In consequence of these facts, as well as because many teachers are unable to afford the expense necessary to attend a national convention, the proposal has been made to divide the Association into several, say four or five, each of which shall have its annual meeting and elect a quota of representatives to a central body, which shall meet annually and be deliberative, instead of hortatory and polemic, as the Association's meeting now is. This seems to us a most excellent plan, and we trust it may be soon adopted. The new president of the Association is Superintendent Aaron Gove of Denver, Colorado.

THE ECONOMIC BENEFITS of the work performed by the U. S. Geological Survey are just beginning to be appreciated by railway men who are laying out new lines of railroad. The officials of the Survey are of the opinion that within the next ten years the centre of all the railroad-building in the country will be located in the Southern States. They base this opinion on the fact that the calls for maps of the southern mountain ranges is increasing very rapidly. The maps thus far prepared by the Geological Survey cover the eastern coast-line from the Maryland boundary to the Georgia coast, with the exception of a small section of Virginia. They are at present issued only to those directly interested in the topography of the Appalachian range, yet there have been issued already upwards of three thousand five hundred maps of the region. That is to say, about a hundred different sets. These maps have all been distributed to those directly interested in the building of new railroads. It is said that there are somewhere about twenty different roads in course of construction between the coal-fields of the South and the seaboard or the Ohio River. One gentleman, who is interested in the construction of a road between Charleston, S.C., and the mouth of the Big Sandy on the Ohio, called at the office of the Survey a day or two ago and said that the maps which had been furnished to his company had saved the corporation at least ten thousand dollars in preliminary surveys. From all sections of the South, reports are constantly received of the enormous value of the maps furnished by the Survey to topographical and civil engineers. Besides the work which has been done in the Southern States, the survey has been extended well into many sections of the North and West. Massachusetts has been mapped on a scale of a square mile to the inch, through the joint work of the State and the general government. A field-party has just begun operations in south-eastern Iowa for the purpose of mapping that State on a similar scale. Illinois and Indiana will, in all probability, be the next States in which the surveys will be undertaken. There is a great difference in the cost of the work in the various States. In the South, where the country is broken by mountain ranges, the cost is about twelve dollars a square mile; while in the prairie States of the West, where the country is flat, the work can be performed at about five dollars a square mile. It is the ultimate intention of the bureau to prepare topographic maps of the entire country. Owing, however, to the necessary slowness of the operations, it will be many years before the entire scheme of operations is perfected. As fast as the field-operations in each case are perfected and verified, the original maps are sent to the engraver, and a few copies are made for immediate use. Eventually there will be prepared an atlas of each State. These atlases will be of enormous value, not only to railroad engineers but to all municipalities who have use for an accurate topographic map of the country surrounding them.

AMERICAN PHILOLOGICAL ASSOCIATION.

THE nineteenth annual session of the American Philological Association was held in the Marsh-Billings Library of the University of Vermont, at Burlington, on July 12 – 14. In the absence of President Merriam, who is on his way to Athens, to take charge of the American School there for the ensuing year, the Vice-President, I. H. Hall of New York, occupied the chair. The attendance was not as large as usual, but this did not hinder the meeting from being an exceedingly interesting one, marked by the animated discussions which some of the papers aroused.

The reading of papers was begun, after the transaction of routine business, by Dr. C. K. Nelson of Brookeville, Md., who presented some interesting facts gleaned from a study of 'Murray's New English Dictionary,' Part iii. This part embraces the letter B from *batter* to *bozzom*, and contains 8,765 words. If we add to this about 3,000 words under B in Part ii., and estimate the remaining words at the same figure, we have, for entire B, 14,765 words, or more than twice the number given by 'Webster's Unabridged,' which has only 6,750 words. Of the 8,765 words in Part iii., 5,323 are main words, 1,873 compound, and 1,569 subordinate words; and of these main words, again, 3,802 are in current use, while 1,379 are obsolete. A feature of this letter is the small proportion of Latin and Greek words found under it, aggregating not quite twenty-five per cent. In summing up, Dr. Nelson said that "this part of the great English Thesaurus impresses philologists more and more with the fact that the creative period of language is by no means arrested. Sanscrit, and Latin, and Greek have crystallized linguistic forms, which afford splendid specimens of immutable structure, but it is in the living language, where words are

created as they are needed, that we have the opportunity of witnessing the phenomena of perennial growth."

Tuesday evening, a well-attended public meeting was held in the chapel of the University, when Prof. J. H. Wright, the Secretary, read President Merriam's address on a 'Review of the Greek Inscriptions Published During the Past Year.' It is to the monuments, which the soil of Greece has preserved in such large numbers, that we have to look for an increase of our knowledge of Greek history and civilization, and for a solution of the many problems still unsolved. Already the results of the explorations, which have been going on busily for some time, are beginning to make themselves felt, and it is not too much to say that Greek history will yet have to be rewritten in the new light shed upon events by the testimony of the stones. The past year has been, on the whole, an important and fruitful one. Greek inscriptions of particular value have been found in Naukratis, under the auspices of the Egypt exploration fund, at Sigle in Crete, at Epidauros, and near the Peiræus, the harbor of Athens. It is within the domain of the history of the Greek alphabet that the most valuable results of the last year's work are to be sought. The rest of the address was devoted to an elucidation of these results.

At the session on Wednesday morning, Prof. F. A. March read a paper — that may in many respects be called remarkable — on 'Standard English.' He claimed, in opposition to the 'new phonetists,' that there is such a thing as standard English, defining it as the 'heir of all ages recorded in grammars and dictionaries.' Standard English, meaning by that both the proper use of words and their proper pronunciation, is an authoritative institution,— a stronghold of the unity and power of the Anglo-Saxon race. While it is true that speech in its simplest form is without reflective purpose, yet, when a higher state of civilization is reached, its growth proceeds under the guidance of reason. The development which the English language has taken since the days of Milton and Shakspeare is a proof of this. We are, therefore, not only justified in guarding jealously our standard English from contamination through impure influences, but it becomes, also, the duty of scholars and cultured people in general to superintend its growth. Students of language have it as their specialty to preserve and perfect the records of the language. The paper, which was thoroughly suggestive throughout, gave rise to a long, and at times animated, discussion, in which a large number of the members participated.

Professor Seymour of Yale College gave a report of the doings and needs of the American School at Athens. It will be remembered that some months ago the permanent Directorship of the school was offered to Dr. Charles Waldstein, who accepted the same, subject to the condition that an endowment fund of $100,000 be raised in order to place the institution on a sound financial basis. Up to date, $10,000 of this sum have been subscribed, — which, it must be confessed, is not a very encouraging showing. Still, there is a fair prospect that before the expiration of the time assigned by Dr. Waldstein, — October, 1888, — the remaining ninety thousand will be forthcoming. With the aid and encouragement which the school has received from the Greek government, such as the recent gift of a suitable site for a building, — which, it is pleasant to record, is in process of erection, — it would be indeed lamentable to see so important and valuable an undertaking maimed by our own indifference to its fortunes.

Prof. W. F. Allen had an interesting paper on 'The Monetary Crisis at Rome in 33, A.D.' The crisis in this year, which was so severe that it required the intervention of the Emperor Tiberius to restore credit by advancing, from the Treasury, a sum equivalent to four million dollars, in the form of loans without interest, was the necessary outcome of the conditions prevailing in ancient Rome, which made money-lending a curse and the money-lender an evil. At the present time, the legitimate business of bankers consists in advancing funds to be employed for productive purposes: the banker is therefore a highly useful intermediary between those who have money which they do not understand how to use productively, and those who are engaged in industrial occupations in which they can use to advantage more capital than they themselves possess. But there was no such thing as productive industry, on a large scale, in Rome. When money was borrowed, it was merely for purposes of future consumption, or to pay for past consumption. Money was borrowed in order to pay a debt incurred, and therefore carried with it the incurrence of a new debt. The consequence of this state of things was, that a large body was growing deeper and deeper into debt, while a few — the money-lenders — reaped benefits out of all proportion to the services rendered by them. Already in Cæsar's time the attempt was made to counteract this threatening evil by the passage of a law for the regulation of loans and of debts. It aimed, as far as we are able to trace it, on the one hand, to prevent a scarcity in the money-market, by limiting the amount of cash an individual could have on hand, and obliging him to invest what he had above this sum in real-estate, and, on the other hand, made provision for the payment of outstanding debts, by an extension of time and by compelling creditors to take real-estate as payment. The law, however, remained a dead-letter until the days of Tiberius, who made an attempt to revive it. The attempt failed, and the much-feared crisis broke out. But it is a testimony to the wisdom of Tiberius that he foresaw its coming, and endeavored to prevent it by all means in his power. In order to relieve the debtors of their embarrassment, he issued the loans as above set forth, which was of course only a temporary relief, not a remedy for the evil.

Professor Greenough of Harvard University had some suggestive Latin etymologies to offer, among others, that of *elementum*. He favored the explanation, common in former days, but latterly superseded by other views, according to which it was an artificially coined word composed of the three letters *l, m, n*. The *t* was due to the force of analogy, so as to make the word conform with such forms as *rudimentum, alimentum*. Dr. H. Weir Smyth of Johns Hopkins University had an elaborate treatise on the Arcado-Cyprian dialect, which endeavored to cover the entire field of the famous Cypriote inscriptions, of which the Metropolitan Museum in New York has such a rich collection, and, by a minute examination, to make clear the relation in which the Cyprian stood to the other Greek dialects. Professor Hale of Cornell had two papers, one proposing a new terminology for the Latin tenses, the other on the '*Cum*-constructions in Latin; Their History and their Functions.' Dr. Cyrus Adler of Johns Hopkins, in a review of the article 'Semitic Languages,' in the 'Encyclopedia Britannica,' took grounds against the writer, Professor Nöldeke of Strassburg, for the subordinate rank which he assigns to the Assyrian among the Semitic languages. Dr. Adler claimed, that, in consequence of this, the article was not up to the mark of our present science. Professors Jastrow and Hall made some remarks in reply. Other papers were as follows: 'Conditional Sentences in Æschylus,' by Professor Clapp of Illinois College; 'Long-Vowels in Old Germanic,' by Dr. Wells of Providence, R. I.; 'Delitzsch's Assyrian Dictionary, Part i,' by Prof. Morris Jastrow, Jun., of the University of Pennsylvania.

On Wednesday evening the Association was entertained by Dr. and Mrs. Sears, and on Thursday, after the closing meeting, an excursion was taken to the Au Sable Chasm.

Before adjourning, the following officers were elected: President, I. H. Hall of the Metropolitan Museum, N. Y.; Vice-Presidents, Professors Seymour of Yale and Lanman of Harvard; Secretary and Treasurer, Prof. J. H. Wright of Harvard; Executive Committee, Professors Whitney, Gildersleeve, Perrin, and March. The next meeting of the Association will take place at Amherst in the second week of July, 1888.

IS CONSUMPTION CURABLE?

The discovery by Koch in 1882, of the tubercle bacillus, gave a new impetus to the treatment of consumption. The investigations of Toussaint and others had made it more than probable that tuberculosis was an infectious disease, but the discovery of the actual germ which caused the disease seemed to open up to the victims of phthisis a means of escape from a fate which up to that time had seemed inevitable. That the hope thus aroused has not yet been realized is not due to any lack of enthusiasm on the part of the medical profession; for, ever since the nature of tuberculosis was established, search has been made for some means by which its germs or their products might be destroyed, and thus the disease arrested.

We have recently had occasion to mention two methods of treat-