

the establishment of the fund, should be deducted in order to represent the pensions which such teachers should have paid, to come under the clauses of the law which have been extended in their favour.

Teachers will do well to bear in mind that in order to be allowed the faculty of consenting to a similar deduction on their first annuity, they must pay in, one years premium, and procure their inscription on the teachers' pension list, before the first of January next.

Teachers who retired before the establishment of the fund can file applications for a pension before the first of January next; but they will be paid only next year. No application will be received after that date.

Teachers who will retire without having been previously inscribed, will have no right to a pension although they offer the payment of any sum of money at the time of their application.

In order to facilitate the distribution of the annuities and to prevent speculations which were reported to be contemplated by unscrupulous persons, the annuities have been transmitted to the several pensioners, through the agency of their respective clergymen.

American Association for the advancement of Science.

(Continued from our last.)

The explanations of Dr. Rae were given before the subsection of ethnology and statistics in the section of Natural Sciences.

In the same subsection the question as to the alleged existence of various species of men which was so fully debated in the preceding congress at Albany was again mooted. We borrow the following accounts of this and other discussions from the *Canadian Naturalist and Geologist*:

According to Prof. Dana, and we think the view most philosophical, our idea of a species should consist of certain essential properties common to all the individuals, and in the organic world the power of invariable transmission of the properties; but, whether in the inorganic or organic world, we should regard variations within fixed limits as a law of every species under the influence of external agencies. This view of species, and we might indeed add any intelligible view of the subject, leads inevitably to the doctrine of the common origin of all individuals of any species capable of continuous reproduction.

"Professor Dana said it might be well perhaps to examine the question of species synthetically, comparing the results of observations with the utterings of sciences, and he proposed the three following questions:—1st. What is a species? 2nd. Are species permanent? 3rd. What is the basis of variations in species?

And first he said, that the idea of a group which is the common definition, was not essential, and indeed tended to confusion. Looking first at inorganic nature they learned that each element was represented by a specific amount or law of force. Thus taking the lightest element as a unit, oxygen would be found expressed by 8, and was of the same value in all its compounds. The resultant molecule was still equivalent to a fixed amount. Hence the essential idea of a species is that it corresponds to a specific amount or condition of centred force defined in the act or law of creation. In the organic world the individual was involved in the germ, which possessed powers of development to a completed result, and this also corresponded to a measured quota or specific law of force, though there was no unit by which to measure it, and though there might be different kinds of force. The same definition of a species would apply here, and thus species was in the potential value of the individual whether one or many existed, and the precise nature of the potentiality in each was expressed by its whole progress from the germ to its full expansion. 2nd. As to the permanence of species, it was found in the inorganic world that the element was always the same; oxygen was always 8, and all nature was characterised by fixed numbers. This being so for inorganic nature, must be so everywhere, for the principles which pervaded nature were not of contrariety; but of unity and universality. If the kingdoms of life were not made from the units which exhibited themselves in their simplest condition—if these units were capable of blending, they would not be units, and life would be but a system of perplexities. It might be seen, too, that the purity of species was guarded in nature. Both in the animal and vegetable kingdom, hybrids were her aversion as far as yet observed. Least of all was it to be expected that the law of permanence, so rigid among plants and the lower animals, should have its main exception in man. Yet if there were more than one species of man, the number of species must become indefinite by intermixture. It

would have been a clumsy mode of giving man the control in all the zones of the earth, to have made him of many species capable of hybridization in opposition to the general law of nature. It would have been using for the propagation of the human race, a process which produces impotence among animals. It is true that different inorganic species continue to form new units; but it is not by indefinite blendings, but by a definite law; and if such a law existed in organic nature, it would also be in general an essential part of the system, easy of discovery. But there were variations in species, though they could never extend to the obliteration of the fundamental characteristics of the species. No substance could be independent of any other. The law of mutual sympathy was one of the most universal in nature. The planets were modified by each other, and one chemical substance by the other. Each body had its own fundamental force, and the relation of this to others was a part of the idea of the species; and this process of variation was a law of universal nature acting on the law of a special nature and compelling the latter to reveal its qualities. This was one of the richest sources of truth which was open to research, and hence we should not regard the individuals which were conspecific as constituting a species; but each one, as an expression of the species in its potentiality, and under some one phase of its variations. The system of nature must be conceived of as a system of units continually adding to the number of representative individuals by self reproduction; and all adding to their varieties by mutual sympathetic reaction."

The clever though not over scrupulous writers of the so-called "American School of Ethnology," have built largely on the researches of Dr. Morton, a man of great industry and ability, but not fully aware of the use which would be made of the materials he had collected. Professor Wilson has been going over some of Morton's ground, and is surprised to find his general statements not borne out by facts. The statements of this paper would seem to show that the whole subject of American crania requires reinvestigation.

"Prof. Wilson spoke on the supposed uniformity of Cranial Type throughout the American race, and recommended inquiry on this question so frequently forced on the attention of the Association, and in the meantime not to come into collision with theologians; There was a great variety in forms of the head, colour of the hair, and the osteological structure of the human frame. It was a question not only whether all human beings agreed in form, but whether they had always agreed; and in order to that discovery the search must be made in ancient tombs and tumuli. By ethnologists of the American school important results had been built upon the ground of the observations made by the celebrated Dr. Morton, and it was not to be wondered at that that gentleman was taken as authority, for he possessed a scientific mind and was a very careful observer. But, without disparaging that great writer, he thought his deductions ought to be tested by farther researches. The Doctor's conclusion was that a universal type of cranium pervaded all the American family, which he divided into the two classes of Toltec and Barbarous, though he regarded the division as intellectual rather than physical. The form which he found to be general in the skulls of all these tribes was marked by much greater breadth from side to side than from the frontal to the occipital bone, differing in that respect from the European and African races; and in the American races he found that the forehead was not arched as in the others. All this had been reiterated by most subsequent American writers, and particularly by Agassiz. Here the learned Professor read several authorities to show the generally strong affirmation on the part of American writers, of the unity of race throughout the continent, always with the same type. Now, in England he had paid a great deal of attention to the forms of heads found in the ancient tombs of the old country and in Northern Europe, and had noticed the shortness of the longitudinal section in those heads, which, when he came to this country, he wished to compare with the same characteristic which he had believed was to be found in the American crania. He had therefore procured a number of Indian heads, in the full expectation of finding this form; but was entirely disappointed in the result of his investigation. He found very few of the heads of the type described by Morton; yet so strong had been the impression on his mind that it was long before he became convinced that the variety was general. He had examined, however, in all twenty-eight heads, from the country south of the Ottawa and north of Lakes Erie and Ontario, and of these twenty-five essentially differed from the characteristics described by Morton. It was true that Morton had examined two hundred skulls, and he only twenty eight; but taking Dr. Morton's collection even as it now existed, with all the additions since made to it, there were in it only sixteen skulls of any one tribe. Therefore his