'New Subspecies of North American Birds,' and Leonhard Stejneger considers 'The Two Races of *Saxicola œnanthe*.' There is a large number of interesting General Notes, reviews of Recent Literature and Notes and News.

Bird Lore for March–April opens with an article by Frederic A. Lucas on 'Walrus Island, a Bird Metropolis of Bering Sea,' with some reproductions of fine photographs by H. D. Chichester. Mrs. Harriet Carpenter Thayer tells of 'Our Blue Jay Neighbors,' with illustrations from photographs by Thos. S. Roberts; F. A. Van Sant has a brief paper on 'Early Larks,' and P. B. Peabody another on 'Sawwhet Homes.' In the third series of 'Birds and Seasons' the theme is treated by various well-known ornithologists, the birds being those for April and May. Elizabeth Hoppin Lewis contributes for young observers an illustrated poetical 'A B C of Bird-Lore.' There are the usual reviews and the section devoted to the 'Audubon Societies.'

The *Journal of the Boston Society of Medical Sciences* for February contains papers on 'The Relation Between Conductivity and the Inorganic Salts of the Nerve,' by Albert P. Mathews; 'Dermatomyosites, with Report of a Case which also presented a Rare Muscle Anomaly, but once described in Man,' by Walter R. Steiner, and 'The Effect of Carbon Dioxide and Oxygen on Smooth Muscle,' by Allen Cleghorn, assisted by H. D. Lloyd. The remainder of the number is devoted to abstracts of papers presented at the second annual meeting of the Association of American Bacteriologists, in December, 1900. Among these we note one on the possibility of infection from the use of modeling clay in school work.

SOCIETIES AND ACADEMIES.

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES.

A regular meeting of the section was held on March 25th, Professor Cattell presiding. The annual election of section officers was held, resulting in the choice of Professor Livingston Farrand as Chairman, and Dr. R. S. Woodworth as Secretary.

Professor F. H. Giddings presented a paper on the use of the term 'race.' He spoke in part as follows: "The term 'race' as used by many different groups of investigators—anthropologists, ethnologists, philologists and historians—long since ceased to have a definite meaning. Efforts to establish a technical and conventional use of the word have thus far been unsuccessful. As one more attempt I suggest a combination of the word 'race' with various descriptive adjectives, denoting successive degrees of kinship. The narrowest degree of relationship is consanguinity, or the relationship (physiological, psychological and sociological) of father, and mother and children, brothers and sisters, grandparents and grandchildren, uncles, aunts and cousins. Let us designate this degree of kinship by K_1. The next degree of kinship, or K_2 is propinquity. The primary meaning of this word is 'nearness in place' and the secondary meaning is 'nearness in blood.' The word is thus perfectly descriptive of a state of facts which we find when a number of families live in the same neighborhood and, through intermarriage and association, become related (but less closely than the consanguini of K_1) in blood, in type of mind, and in institutions. K_3 is nationality, that wide degree of kinship (physical, mental and social) which includes those who speak the same language, and, for many generations, have dwelt together under the same political organization. K_4 is potential nationality, or the degree of relationship (physical, mental and social) of a heterogeneous people composed of many nationalities, undergoing assimilation, or blending, into a new nationality, as in the United States. Potential nationality includes the familiar census divisions, 'native born of native parents,' 'native born of foreign parents,' and 'foreign born.' K_5 is ethnic-race, a group of closely related nationalities, speaking closely related languages, and having well-marked psychological characteristics in common. Examples are the Celtic ethnic-race, including the Welsh, the Irish, the Highland Scotch, some of the Cornish and the Bretons; the Teutonic ethnic-race, including Germans, Swedes, Norwegians, Danes and Dutch; and the Latin ethnic-race, including Italians, Spaniards and Greeks; K_6 is Glot-

tic race. This is that very broad relationship, to a slight extent physical, to a somewhat greater extent mental and social, of those related ethnic-races that speak languages derived from a common ancient tongue. Examples are, the Aryan glottic-race, including the Celtic, Teutonic, Latin and other ethnic-races; the Semitic glottic-race, and the Hamitic glottic-race. K_7 is chromatic race, that extremely wide and vague relationship, which includes related glottic-races marked by the same color. Examples are, the white chromatic-race, which includes the Aryan, Semitic and Hamitic glottic-races; the yellow chromatic-race, which includes the various glottic-races known as Mongolian or Turanian; the brown, the red and the black chromatic-races. K_8 is cephalic-race, or that widest relationship which includes chromatic-races of like cephalic index. The distinction about which I feel most doubt is this between chromatic and cephalic race. Remembering that, according to this scheme, variability and multiplicity of specific characteristics produced by differentiation should increase as we proceed backward from K_8 to K_1, I think that probably cephalic index is rightly placed as K_8 and color as K_7 because, in the organic world in general, coloring seems to be a less stable characteristic than anatomical structure. The compound terms which I have here introduced are admittedly clumsy, but they have the advantage of conveying precise meanings. If a writer speaks of 'race' without a qualifying word, his reader must guess at his meaning. If he says, 'cephalic-race,' 'chromatic-race,' 'glottic-race,' the meaning cannot be mistaken."

In reply to a question Professor Giddings said that the clan is developed between K_1 and K_2 and the tribe between K_2 and K_3.

The following paper was read by Mr. Stansbury Hagar, on the 'Wards of Cuzco.' The speaker presented a portion of the evidence collected by him which tends to show that the twelve so-called wards of Cuzco, the ancient capital of the Inca Empire, were the terrestrial representatives of the signs of the Peruvian zodiac. The evidence bearing on this hypothesis is divided into four main classes. In the first place, the system of 'mamas,' under which the Peruvians regarded every material object as merely a product of the real spiritual essence of which it was the expression, gave rise to an attempt to imitate on earth the features of the world above as observed in the heavens. This system, in turn, resulted in the production of an elaborate ritual, the features of which, each month, corresponded with the supposed attributes of the 'mama' which governed the corresponding sign through which the sun was passing during that month. The ideas associated with the 'mamas' are shown to correspond with the names of the Cuzco wards. Again, these names correspond very definitely with the names of the zodiacal signs upon the native star map of Salcamayhua. And finally the names of one or two of the wards can be identified directly with definitely known native constellations situated in the zodiac. The nature of the evidence thus adduced is such as to indicate that the native Peruvians had made remarkable advance in astronomical knowledge in times long anterior to the arrival of the earliest Europeans known to history.

R. S. WOODWORTH,
Secretary.

GEOLOGICAL SOCIETY OF WASHINGTON.

AT the 113th meeting, held at the Cosmos Club March 27, 1901, the discussion of geological units begun at the preceding meeting was continued by Professors H. S. Williams, C. R. Van Hise, T. C. Chamberlin, and others.

At the 114th meeting, held April 3d, the following communications were presented:

The Priceite of Lone Ranch, Curry Co., Oregon: J. S. DILLER.

This chalky borate of lime occurs rather irregularly upon and in a mass of serpentine, and is probably a hot-spring deposit.

The Problem of the Archæan: C. R. VAN HISE.

An historical review of the progress made in differentiating pre-Cambrian rocks, and a statement of the present basis of distinction between Archæan and Algonkian.

At the 115th meeting, held April 10, 1901, the program was as follows:

The Philadelphia Gneisses: F. Bascom.

A study of the petrography, structure, age and genesis of the gneisses in the vicinity of Philadelphia.

Possible Pre-Wisconsin Tills of Massachusetts: Myron L. Fuller.

In the central portion of this country, the deposits of till have been differentiated into sheets of different ages, but in New England the severe glaciation of the Wisconsin Period removed, as a rule, all traces of earlier tills. Recently, however, a number of exposures have been discovered in the region south of Boston in which highly oxidized or disintegrated tills are found to underlie the ordinary light buff till of the Wisconsin ice invasion.

This lower till contains from two to four times the amount of clay contained by the Wisconsin till, is composed almost entirely of deeply decayed or disintegrated materials, is marked by the presence of the bright colors characteristic of advanced oxidation, lies upon deeply altered and practically unglaciated rock surfaces, has no far-traveled rock fragments, and is sharply separated from the overlying till both by its color and by its composition.

This older till is probably to be correlated with the Kansan or pre-Kansan till of the central portion of the United States.

The Waverly Group in Northeastern Ohio: George H. Girty.

In 1900 an effort was made to trace eastward into Pennsylvania the members of Newberry's Waverly section in northern Ohio. The Berea grit of the Waverly group was found to be the equivalent of the Cussewago sandstone of northwestern Pennsylvania. The Orangeville shale of that region is the basal third of the Cuyahoga shale, in part equivalent to Orton's Berea shale. The Sharpsville sandstone representing the middle portion of the Cuyahoga is probably the stratum producing the lower falls at the village of Cuyahoga Falls. The Meadville shale can with little doubt be correlated with the upper portion of the Cuyahoga, and it seems probable that the Shenango sandstone and shale are the equivalents of the Logan group. It is doubtful if the Corry sandstone is represented in Ohio, while the Bedford and Cleveland shales probably die out before reaching the Pennsylvania line.

F. L. Ransome,
David White,
Secretaries.

Chemical Society of Washington.

The 125th regular meeting of the Society was held March 14th. The following papers were presented:

'Notes on a New Indicator,' by E. G. Runyan. In this paper were presented results on the determination of total acidity in both white and colored wines, using as indicator an alcoholic solution of malachite green and commercial rosolic acid or corralin. For comparison, results obtained on the same samples with phenolphthalein and litmus were also presented. The data given seemed to be favorable to the use of the corralin-malachite indicator in titrating wines and similar colored products.

'The Action of Saccharin on Sugars and other Carbohydrates,' by L. M. Tolman. The author stated that saccharin was being sold as a substitute for sugar, and that it was sometimes found mixed with cane sugar. The best method of determining the saccharin present is the Reid method, by which the saccharin is hydrolized to the acid ammonium salt of sulfobenzoic acid, and the ammonia determined by distillation. The benzol-sulfimide was found to be a strong hydrolizing agent, readily inverting cane sugar. With cane sugar the inversion was as complete as by the official method, and upon heating for a long time there was no destruction of sugar. Lactose and dextrose were not affected by the sulfimide, a fact that may be used in the determination of cane sugar in the presence of milk sugar or dextrin, or both.

'The Nature and Function of Soil Solutions,' by F. K. Cameron.

'Permanganate of Potash as a Chemical Antidote,' by V. K. Chesnut. After a critical discussion of the work of La Cerda, Antal, Schlagdenhauffen and Reeb, Moor, Wood and others, who applied dilute solutions of the permanganate as an antidote in cases of human poisoning caused by snake bites, phosphorus, oxalic and hydrocyanic acids, coronillin, morphine and various plant alkaloids, the writer gave the

results of some experiments made with the salt by Dr. E. V. Wilcox and himself in cases of the poisoning of sheep from eating plants. These experiments were made in Montana where hundreds of sheep are killed by certain poisonous plants every year. Preliminary experiments indicate that a one-per-cent. solution of $KMnO_4$, to which one per cent. of the sulfate of aluminum is added, is a wholly satisfactory antidote for poisoning by two of the most poisonous groups of plants of that State, the species of death camas, *Zygadenus*, spp. and the larkspurs, providing, of course, that it be given in the earlier stages of the poisoning. The sulfate of aluminum was added because of the greater oxidizing value which it confers upon the permanganate. The use of the mixed salts in cases of poisoning by other plants is to be further investigated.

L. S. MUNSON,
Secretary.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 533d meeting was held March 30, 1901. Mr. J. B. Baylor read a paper on the 'Magnetic Survey of North Carolina,' which had been carried on jointly by the State and the U. S. Coast and Geodetic Survey. The total cost was stated to have been $16.70 per county, including the establishment at each county seat of a meridian line. Charts of isogonic lines showed many local irregularities, and that the declination had changed several degrees within one hundred and fifty years.

Mr. J. E. Watkins, of the National Museum, gave a half-hour paper on 'A Century of Land Transportation by Steam,' narrating the development of rails, wheels and locomotives, with especial reference to early American practice.

An interesting sketch of Titian R. Peale, one of the founders of the Society, was then read by Mr. A. C. Peale. Mr. Peale was born in 1799 and died in Philadelphia, in 1885. He was assistant naturalist with Long's expedition in 1819, and naturalist to the Wilkes' expedition about 1840; he drew the illustrations for many works on natural history, and for twenty-five years was an examiner in the U. S. Patent Office.

C. K. WEAD,
Secretary.

THE 534th meeting was held April 13, 1901. The first paper upon the program was by Mr. Edwin Smith, on the 'International Goedetic Association Latitude Service.' It consisted of a short general statement of the history of the development of our knowledge of the variation of latitude up to 1898, of the plan of observations devised by the International Geodetic Association in 1898, and of the very satisfactory progress made in carrying out this program at six stations nearly upon the thirty-ninth parallel. Lantern slides were exhibited showing the distribution of the stations in longitude, various curves illustrating the latitude variation, a graphical representation of the program of observation, and the instrument and observatory at Gaithersburg, Md.

Mr. Artemas Martin read a paper on the 'Properties of Rational Plane Triangles.'

JOHN F. HAYFORD,
Secretary.

ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

THE 315th regular meeting of the Anthropological Society was held March 26th.

Mr. William Palmer demonstrated the method of making a life-mask, occupying only fifteen minutes in the operation, and without the use of quills placed in the nostrils.

Dr. I. Casanowicz exhibited Babylonian, Assyrian and Persian seals and four magic bowls from Hilleh, the bowls having inscriptions on the inside in early Aramaic and Syriac character. They are in a fine state of preservation, and the inscriptions consist of formulas for exorcism, but so far there is no clue to the method of their use. The seals shown were lately acquired by the National Museum, and among them are some of the finest examples of ancient cutting.

President W. H. Holmes exhibited several fine obsidian knives from California. One of the blades was 20½ inches long and 5 inches wide, and with it was shown a mass of solid obsidian of the size from which such an implement could have been made. The work of manufacture must have been attended by enormous difficulties. Mr. Holmes explained briefly the process of manufacture of these remarkable specimens of stone-working.

The first stated paper was by Dr. W. W. Johnston on 'The Ill-health of Charles Darwin,' its nature, cause and its relation to his work. Dr. Johnston presented the results of an extended research into the life of Darwin, showing that up to the age of twenty-seven the philosopher was strong and vigorous; then followed thirty-six years of suffering, and eleven years of improvement to the date of his death. Dr. Johnston stated that the visible beginning of Darwin's intellectual life was during the voyage of the *Beagle*. These five years were characterized by constant strain of overwork, which was continued for several years after the voyage, though his nervous system was exhausted. The break-down of Darwin necessitated a strict regimen, the good results of which appeared in the last decade of his life. Dr. Johnston diagnoses the case as one of neurasthenia brought on by overwork, the symptoms appearing on the voyage of the *Beagle*. The prolongation of Darwin's life was due to the regimen adopted and the unremitting care given him by the members of his family. The paper was discussed by Dr. Frank Baker and Dr. Theo. N. Gill.

Dr. George M. Kober read a paper entitled 'The Progress of Charity Reform in the District of Columbia since 1896.' Dr. Kober's paper was more than locally interesting in showing what may be done by the application of rational methods to the charity problem. These are personal inspection as to the needs of applicants, stimulation to self-help by aid in securing employment, and the encouragement of small savings during times of production, to be drawn upon in times of stress. The progress noted under this system since 1896 is remarkable. Dr. Kober presented statistics showing a great diminution in applicants for aid, a heavy reduction of the expense of conducting the work, and a large increase in the number of those depositing savings.

Walter Hough.

The Academy of Science of St. Louis.

At the meeting of the Academy of Science of St. Louis on April 1, 1901, thirty-three persons present, a memorial notice of the late Judge Nathaniel Holmes, a charter member of the Academy, was presented by a committee composed of Professor Nipher, Dr. Sander and Dr. Baumgarten.

Mr. John S. Thurman delivered an address on the many industrial uses now made of compressed air, illustrating his remarks by apparatus in operation, including electric motor air compressor, compressed air auger, drill, disinfecting atomizer, sculptors' and stone-cutters' tools, carpet renovators, etc., and a set of lantern slides showing the practical uses made of these and other implements and machines operated by means of compressed air.

Dr. Theodore Kodis exhibited, under the microscope, slides illustrating a new method of staining brain tissue, whereby, in four or five days, it has proved possible to prepare single or double stained preparations containing nerve cells with the dendrides of the latter brought out by a direct stain, instead of being differentiated merely as amorphous silhouettes, as is the case with the much slower Golgi process commonly employed. It was stated that the material is treated before sectioning, for about twenty-four hours, with cyanide of mercury, followed for approximately the same length of time by a formaldehyde solution, after which sections are cut, stained with phosphomolybdate hæmatoxylin and, if desired, a contrasting stain, such as one of the aniline greens, and mounted in the usual way.

William Trelease,
Recording Secretary.

The Elisha Mitchell Scientific Society, University of North Carolina.

The 134th meeting of the club was held on April 9th, when the following papers were read:

'First Aid to the Injured in the United States Army': Professor C. S. Mangum.

'The Work of the Commission for the Examination of the United States Mint': President F. P. Venable.

Chas. Baskerville,
Secretary.

Discussion and Correspondence.

Oil in Texas.

To the Editor of Science:—You doubtless have remarked that in various commercial journals the oil which flows in such