American Mathematical Society, by F. N. Cole; 'The Fundamental Conceptions and Methods of Mathematics,' by Maxime Bôcher; 'The History of Mathematics in the Nineteenth Century,' by James Pierpont; 'De Séguier's Theory of Abstract Groups' (Review of de Séguier's Eléments de la Théorie des Groupes Abstraits), by L. E. Dickson; Shorter Notices (Cajori's Introduction to the Modern Theory of Equations, by L. E. Dickson; Annuaire Astronomique pour 1905, by E. W. Brown); Notes; New Publications. The January number of the *Bulletin* contains the following articles: 'The Group of a Tactical Configuration,' by L. E. Dickson; 'Application of the Theory of Continuous Groups to a Certain Differential Equation,' by J. E. Wright; 'On the Quintic Scroll having a Tacnodal or Oscnodal Conic,' by Virgil Snyder; 'On the Deformation of Surfaces of Translation,' by Burke Smith; Report of the International Congress of Mathematicians at Heidelberg, by H. W. Tyler; Report of the Sectional Meetings of the Heidelberg Congress, by E. B. Wilson; Notes; New Publications.

The contents of the December issue of the *Journal of Terrestrial Magnetism and Atmospheric Electricity* are as follows:

Portrait of Ettrick W. Creak, Frontispiece.

F. Bidlingmaier: 'Ueber den Einfluss der Torsion bei den Ablenkungen eines hängenden Magneten.'

L. A. Bauer and G. W. Littlehales: 'Proposed Magnetic Survey of the North Pacific Ocean by the Carnegie Institution.'

W. Sutherland: 'On the Cause of the Earth's Magnetism and Gravitation.'

L. A. Bauer: 'The Physical Decomposition of the Earth's Permanent Magnetic Field. No. V.: Systems of Magnetic Forces Causing the Secular Variation of the Uniform Portion of the Earth's Magnetism.'

Biographical Sketch of Ettrick W. Creak.

Letters to Editor: Interruptions to Telegraph Lines in New South Wales, Australia, as observed from the Chief Office (Sydney), on October 31, 1903, O. J. Klotz; Principal Magnetic Disturbances recorded at Cheltenham Magnetic Observatory, Sept. 1 to Nov. 30, 1904, W. F. Wallis; Some Observations of the Diurnal Variation of the Magnetic Declination at Cuajimalpa, Mexico, M. Morenoy Anda.

Notes, Abstracts, Reviews, and list of recent publications.

The Journal of Infectious Diseases (Volume 2, No. 1) contains the following articles:

David J. Levy: 'Some Physical Properties of Enzymes.'

Maximilian Herzog: 'Fatal Infection by a Hitherto Undescribed Chromogenic Bacterium, Bacillus Aureus Fœtidus.'

E. O. Jordan and Mary Hefferan: 'Observations on the Bionomics of Anopheles.'

George H. Weaver, R. M. Tunnicliff, P. G. Heinemann, May Michael: 'Summer Diarrhœa in Infants.'

Albert Woelfel: 'Identification of Alcohol-Soluble Hemolysins in Blood Serum.'

Richard P. Strong: 'Protective Inoculation against Asiatic Cholera.'

L. Hektoen and G. F. Ruediger: 'Studies in Phagocytosis.'

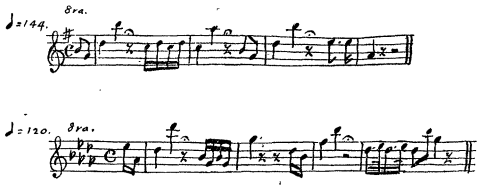
SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON.

The 392d regular meeting was held December 5, 1904. G. K. Gilbert spoke briefly of observations of the marks of the claws of bears and other animals upon the bark of the aspen in the Sierra Nevada Mountains of California. Photographs of the trunks of trees so marked and specimens of the bark were exhibited.

Henry Oldys, under the title 'Some New Bird Songs,' gave an account of interesting songs noted by him in the spring of 1904. Most of these offered additional evidence of the use by birds of rules of construction that govern human music. The speaker reproduced, among others, several chewink songs, all of which were sung by one chewink. Two songs of a wood thrush, which were given, the speaker declared the most remarkable songs he had heard in years of experience. Each followed a form common in the modern four-line ballad and each was a model of melody. Hitherto, this four-phrase form had been found only in the morning and evening song of the wood pewee and in the usual song of the summer tanager, and neither had the melodic beauty that characterized the two wood thrush

songs. These are of such interest as to be worthy of reproduction as follows:



William H. Dall read an abstract of the results of the study of the non-marine mollusk fauna of Alaska and the adjacent parts of Asia and North America, in which the relations of the east Siberian fauna to that of Europe, China and Japan; and of the Hudson Bay territorial fauna to that of eastern Canada, the Mississippi Valley and the Pacific slope were shown, and those of all the foregoing to the fauna of Alaska as at present known. He regarded the probability of many new forms being found in these regions as very small, for though still very imperfectly explored, the conditions on the whole are very uniform, and in some portions of the area quite thorough collecting has been done.

B. W. Evermann spoke of 'A Trip to Mount Whitney,' giving account of personal experiences while on a trip with the pack train into the region of Mount Whitney, California, in search of the golden trout of Volcano Creek.

THE 393d regular meeting was held December 17, 1904. Dr. E. L. Greene spoke on 'The Earliest Book of Systematic Botany,' discussing the absence of everything approaching a natural classification of plants in ancient and mediæval botanical works, following with a statement of the principles first enunciated by the Italian Cæsalpinus in his book 'De Plantis' (1583), that plants and trees admit of a natural arrangement by considering the characteristics of their fruit and seeds; thus inaugurating the era of systematic botany. A cursory review of this book was given and statements made of that imperfect, though in general very natural sequence of genera which it exhibits.

A. B. Baker spoke briefly of 'Animals Recently Received at the National Zoological Park from Abyssinia and South America.' Among those mentioned were the animals received through President Roosevelt, to whom they were presented by King Menelek, of Abyssinia. Most interesting of these are the Somali ostrich, probably the only one of its kind in this country; the Grevy zebra, perhaps the handsomest of zebras; and two peculiar gelada baboons. He also spoke of animals received from South America through the U. S. Consul at Asuncion and by exchange with the Zoological Garden of Buenos Aires. These included a jaguar, guanacos, peccaries, capybaras, rheas, tinamous and a crested screamer.

Dr. Hugh M. Smith gave an account of the Japanese ayu or sweet-fish (*Plecoglossus altivelis*), which in some respects is one of the most remarkable of fishes. It is one of the Salmonidæ, but differs markedly from the salmons and trouts, and has been made the basis of a separate subfamily by Dr. Theodore Gill. The ayu is an annual fish, the entire cycle of its life from the egg to its death covering not more than a year. In dying after once spawning, it resembles the Pacific salmons. The eggs, laid in fall in rivers, are attached to stones, and hatch in a much shorter time than those of any other member of the family. The migrations are very peculiar, embodying a combination of anadromous and catadromous which is unparalleled; strictly speaking, however, the fish is neither anadromous nor catadromous, for it does not ascend the streams to spawn, and when it runs down the streams to spawn it does not go to sea. When young the ayu subsists on animal food, but after entering fresh water it feeds almost exclusively on algæ, which it scrapes from stones in mountain streams by means of curious chitinous papillæ which develop on the lips. The method of catching the ayu with trained cormorants was described and illustrated by lantern slides.

WILFRED H. OSGOOD,
Secretary.

NEW YORK ACADEMY OF SCIENCES: SECTION OF GEOLOGY AND MINERALOGY.

THE meeting of January 9, 1905, was called to order by the chairman, Dr. E. O. Hovey;

twenty-eight persons present. The minutes of the last meeting were read and approved.

Dr. George F. Kunz read a paper on the 'Jagersfontein or Excelsior-Tiffany Diamond,' the largest diamond ever found up to the present time. It weighed 970 carats, and was a gem of most marvelous purity. This diamond was most expertly cleaved into pieces, and from it were cut ten gems weighing from 13 to 68 carats each; a total of 340 carats; and these were imported into the United States. Mr. Kunz also stated that carbon silicide had been detected in the meteorite from the Cañon Diablo by Dr. Henri Moissan, of Paris, together with transparent diamond and black diamond. As carbon silicide has been made artificially with the electric furnace by Messrs. Cowles, Acheson and Moissan heretofore, and was first determined in nature by Professor Moissan, if agreeable to Professor Moissan, he would suggest the name *moissanite* for this compound.

The paper was illustrated by models and photographs. It was discussed by Professors Kemp and Stevenson, the chairman, and others. Brief replies were made by Dr. Kunz.

Professor J. J. Stevenson read a paper entitled, 'Recent Advances in our Knowledge of the Composition of Coals.' He said that the coals of Spitzbergen, according to Nathorst, are in great part of Jurassic age. The mining operations are confined to Advent Bay, a branch of the ice fiord of West Spitzbergen, where coal has been opened on both sides of the bay. The deposit has been followed northwardly for about ten miles, and for an equal distance westwardly.

The chief enterprise is on the easterly side of the bay, where the bed is somewhat less than five feet thick. The coal from the upper part is splint-like, while that from the lower part is brilliant and somewhat prismatic. The divisions show a notable difference in the percentage of volatile, the upper containing about ten per cent. more than the lower. The coal shows no tendency to coke, and that from the lower portion is attacked energetically by caustic potash.

The coal was compared with that from other localities in which the benches show notable difference in volatile. The results of tests with caustic potash made upon a number of coals appeared to show that non-coking coals are attacked promptly, while coals yielding a firm coke are not affected even after prolonged boiling. The speaker promised to give at a future meeting the results of an extended series of tests.

The paper was discussed by Professor Kemp and others.

The last speaker was Professor J. F. Kemp, upon 'New Sources of the Supply of Iron Ores.' Emphasis was first placed upon the enormous demands made by the iron industry of to-day upon the mines of the United States, Great Britain and Germany. The conviction was held by many that within fifty years the local American sources of rich ores of whose existence we now know would be exhausted and the iron masters would be compelled to seek new deposits. The following possible new districts were passed in review: the Labrador prospects discovered by Mr. A. P. Low, of the Canadian Geological Survey, which might also ship to Europe; Adirondack areas of reported magnetic attraction and possible lean ores, the Temagami district and the Michipicoten range, Ontario; the southern continuation of the Marquette range beneath the drift; the southern half of the Mesabi probable syncline beneath the swamps northwest of Duluth, as suggested by C. P. Berkey; the Baraboo range; the deposits in Iron County, Utah, and in the Wasatch Mountains; the magnetites of southern California and the prospects in Washington and along the coast. The speaker emphasized the important reserves in the titaniferous magnetites and their great quantity.

Passing to Europe the new developments in Sweden at Gellivara and Kirunavaara were reviewed and the possibilities at Routivaara; also the Dundeland valley in Norway and the similar deposits farther north. Their relations to the smelting centers in Great Britain and Germany were explained and their comparative amount with the 'minette' ores of France, Luxemburg, and Germany brought out. Other deposits in Spain, Algiers, Ven-

ezuela, India, Australia and Shan-si in China were mentioned.

The necessary connection between the coal fields and any great development of the iron and steel industry was emphasized and the future of the three great producers of to-day forecast as involved in the permanency of the coals. The reserves of coal are greater in Germany and America than in Great Britain. The province of Shan-si, China, having rich stores of both coal and iron, seems to be the one possible new location of the future great iron industry.

After a lengthy discussion, the meeting adjourned.

A. W. GRABAU,
Secretary.

COLUMBIA UNIVERSITY,
NEW YORK CITY.

THE SCIENCE CLUB OF THE UNIVERSITY OF WISCONSIN.

THE third regular meeting of the club for the year 1904–5 was held on December 13 at 7:30 P.M. in the physical lecture room of science hall. The lecture of the evening was delivered by Professor B. W. Snow, head of the department of physics of the university, on the subject, 'Electrons, Radio-activity, and the Electrical Theory of Matter.'

F. W. WOLL,
Secretary.

DISCUSSION AND CORRESPONDENCE.

A BIOLOGICAL STATION IN GREENLAND.

TO THE EDITOR OF SCIENCE: The establishment during recent years of biological stations in various parts of the world has proved to be of the greatest importance in furthering the progress of science. The great station of Naples has now a worthy competitor at Wood's Hole, and the botanical laboratory at Buitenzorg is aptly represented in this country by the Carnegie Desert Laboratory. The already large number of lesser institutions of similar nature is rapidly increasing, both in this country and abroad, and all add to the opportunities available for the working biologist.

Up to the present time the foundation of such stations has been confined, however, to regions with temperate or tropical climate, and no attempt has been made to establish a permanent station for biological research within the Arctic, until recently. A Danish botanist, Morten P. Porsild, has proposed to his government the appropriation of funds for such a station, to be located on the southern coast of Disko Island in North Greenland, not far from the colony Godhavn (lat. 69° 15′ N.). The proposal is well worth the attention and support of American scientists, and I shall here briefly review Mr. Porsild's plan, according to information supplied by himself.

Danish naturalists have, during the last twenty-five years, systematically explored Greenland; more than fifty scientific expeditions have been sent to that country, and the results are comprised in a series of about thirty volumes ('Meddelelser om Grönland'). It is with pardonable pride Mr. Porsild points to the fact that this has been accomplished at a cost not greater than the expense for one of Peary's expeditions.

The estimated cost for the establishment of the proposed station reaches the very moderate amount of $9,400, which would cover the erection of building, purchase of a motor launch, boats, sledges, tents and other material for shorter expeditions, instruments, books, etc. The running expenses, including salary for a resident investigator and native assistants, are estimated at $2,960. Mr. Porsild has asked the Danish government for this sum, and in the interest of science it is sincerely to be hoped that his request will be granted. If that is done, Mr. Porsild expects to have the station in working order before next summer, and its doors will then be thrown open for investigators from any country. The geographical position of Greenland, and the similarity of conditions there with those of the northernmost part of this continent must necessarily appeal to Americans, and until the time arrives when a permanent biological station can be established in a suitable locality in Alaska, those engaged in arctic work will find the now proposed institution a place of interest. For reasons which will be given Greenland will always be the classical ground for certain lines of research, and, as Mr. Porsild says, there is no other place in the Arctic