950 species of native and naturalized forms being noted, including seven indigenous palms, several figs and thirty orchids. Many species are shared with the United States, but most of our deciduous forest trees are wanting. The important geographical element of distance shows its effect in the less number of continental plants in the southern than in the northern islands. Although the yellow fever mosquito was found, thus making a properly screened quarantine desirable at Nassau, the absence of *Anopheles* indicates that, from the standpoint of malarial diseases, the islands are a good health resort; on a later page, the islands are described as favorable for consumptive cases also. The only marine forms described in detail are fishes; these are noted as having a popular interest for the tourist because of their extraordinary colors and forms, well seen when watched through the floor of a glass-bottomed boat. Of reptiles and batrachians, no less than 22 out of 35 species and subspecies are restricted to the islands. Forty-four endemic species of birds, out of a total of 204 species and subspecies, are described in detail in their bearing on the derivation of the Bahaman avifauna. Only eight mammals are found whose presence is not certainly due to man; these include rats, mice, the rat-like hutia, raccoons and bats.

The chapter on sanitary conditions is of unusual and pitiful interest. Some of the islands have only white inhabitants; some have nearly all blacks; others are variously mixed as to race. The island of New Providence, on which Nassau is situated, has a well-civilized mixed population; the island of Andros, the largest of the group, has a relatively barbarous population of blacks. The islands of only white population have many degenerates. At Hopetown there has been an excessive amount of intermarriage, and although the original stock was good, the present condition is deplorable, the climax being found in a family of eight children, of whom five are idiots. An instructive genealogical tree is given in connection with this case. Leprosy is not uncommon, but except at Nassau there is no isolation of those suffering from this dread disease. The expedition was provided with an excellent medical outfit, and at each town a free dispensary was established during the stay there. The people were timid at first, but after gaining confidence they came in throngs; when the party had to return to the schooner, it was with difficulty that the outfit was packed up, and a way forced through the crowd; the more determined invalids followed on boats, climbed on board the schooner and begged to be cared for. A special account is given of the most important diseases met with.

The chapter on the history of the islands is a book of 160 pages in itself. After brief description of the early buccaneering days, special attention is given to the problems of slavery, with sufficient indication of the wretched treatment that too often occurred, and little illustration of the obsolete argument that the conditions of the blacks was then better than under freedom. Yet to-day the condition of the people must certainly be low, for one of the governors, recently appointed by the crown, thinks that there is not enough good material in the islands to provide the twenty-nine members of the legislature which is to share the government with him. "What is wanted here," says the governor, "is a system based on that so ably conducted by Mr. Booker Washington, at Tuskegee, Alabama, United States of America, and until that or some similar scheme based upon industrial training as the main factor in the educational method is adopted, I fear that no improvement in the condition of the large native population in this colony will be manifested." In view of all this, one must conclude that the islands, with their mild and attractive climate and the beauty of their oceanic setting, must, nevertheless, be taken as illustrating the unfortunate and depressing consequences of monotony and isolation.

W. M. D.

SOCIETIES AND ACADEMIES.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 602d meeting was held May 13, 1905.

Mr. L. W. Austin read a paper on 'The Specific Heat of Gases at High Temperatures,' describing experiments made by Professor Hol-

born and himself at the Physikalisch-Technische Reichsanstalt during the years 1903–04, with the object of bridging the gap in our knowledge of the specific heat of gases between 200° and 1000°. Below 200° we have the experiments of Regnault and others, while between 1000° and 2000° we have the explosion experiments. Regnault and his co-workers found the specific heats of the simple gases independent of temperature, while Mallard and Le Chatelier have concluded that the specific heats increase with temperature. The method of mixtures at constant pressure was employed, the gases being heated in an electrically heated nickel tube filled with nickel filings, according to the method of Wiedemann, and the heat being taken up in the calorimeter by small silver tubes filled with silver filings. The temperature of the hot gases was measured by a platinum/platinum-rhodium thermoelement at the point where the gases entered the calorimeter. After leaving the calorimeter the gases were caught in a gasometer at atmospheric pressure, the volume being measured by means of the displaced water. The gases did not come into direct contact with the water but were caught in a rubber bag, so experiments were possible with the more easily absorbed gases. In Table I. the results for the simple gases, and oxygen, nitrogen and air, are given. These indicate an increase in the specific heat of about three per cent. for air and nitrogen between 20°–440° and 20°–800°. However, as the limit of accuracy is hardly better than ± 1 per cent. the observed difference but little exceeds the possible errors of observation. The results for carbon dioxide are given in Table II. compared with those of Regnault, Wiedemann, Mallard and Le Chatelier, and Langen.

Table I.

Between.	N.	O.	Air.
10–200°	(0.2438)*	(0.2175)*	(0.2375)*
20–440°	0.2419	0.2240	0.2366
20–630°	0.2464	0.2300	0.2429
20–800°	0.2497		0.2430

Table II.

	Regnault.	Wiedemann.	Mallard and Le Chatelier.	Langen.	Holborn and Austin.
0°	0.1870	0.1952	0.1880	0.1980	0.2028
100°	0.2145	0.2169	0.2140	0.2100	0.2161
200°	0.2396	0.2387	0.2390	0.2220	0.2285
400°			0.2840	0.2450	0.2502
600°			0.3230	0.2690	0.2678
800°			0.3550	0.2920	0.2815

* From Regnault.

Mr. A. L. Day described 'An Interesting Pseudosolid.' It was a fine foam made of Plateau's solution or white of egg and sugar. Cylinders cut from this showed elastic properties like a solid but through a wider range and a fracture, photographs of which appeared like marble fractures. Since the dimensions of the cylinder under stress could not be measured directly photographs were used; the results were consistent to one half per cent. Poisson's ratio came out nearly .50. He also detailed the results of experiments on 'The Linear Force of Growing Crystals.' Thus, an alum crystal raised a weight of 1 kg. per sq. cm. through several tenths of a millimeter; the growth takes place only at the lower edges and the area of the supporting edge is too small to measure with accuracy; the forces are of the order of other molecular forces, and are quite sufficient to produce and enlarge fissures in the rocks. Both investigations have important bearings in geology.

President Littlehales then read a biographical sketch of the late David Smith, chief engineer in the navy (1834–1903); his most notable services were in standardizing naval equipment and in improving the ventilation of ships.

Charles K. Wead,
Secretary.

The Science Club of the University of Wisconsin.

The eighth meeting of the club for the year 1904–5 was held on Thursday, May 18, at 7:30 P.M., in the physical lecture room, Science Hall.

The first paper of the evening, by Professor J. L. Bartlett, dealt with the subject, 'The Influence of the Madison Lakes on Local Air Temperatures.' The speaker showed that

through the influence of the lakes, which cover one third of the total area within a radius of six miles from the university, the growing season at Madison is appreciably lengthened. It was shown by comparisons with the average data for four neighboring stations, which have strictly continental temperature conditions, that there is an average departure from local continental types of from 0 to — 3 degrees in the mean maximum temperature during the various months of the year, of 0 to + 4 degrees in the mean minimum temperature, and an increase in summer and autumn in the mean monthly temperature, and a decrease in spring.

The subject of the second paper of the evening, by Professor C. S. Slichter, was 'The Underflow of the Arkansas River.' The speaker presented the results of an investigation conducted last summer under the auspices of the United States Reclamation Service of the region covering the drainage basin of the Arkansas River from Garden, Kans., westward to the state line. The work done indicates that the water of the Arkansas underflow has its origin in the rainfall upon the sand hills to the south of the river and upon the bottom lands and plains to the north of the river. The rate of movement of the underflow was found by the electrical method to vary between eight and eleven feet for twenty-four hours. It was shown that the Arkansas River contributes water to the underflow in time of flood. When the river was high a movement of the ground water away from the river channel was measured and found to be about eight feet for twenty-four hours.

The following members were elected officers of the club for the year 1905–6:

President—Professor Louis Kahlenberg.
Vice-President—Professor C. K. Leith.
Secretary-Treasurer—Professor Richard Fischer.

F. W. WOLL,
Secretary.

THE SAN FRANCISCO BIOLOGICAL CLUB.

A MEETING of the recently organized San Francisco Biological Club was held on April 22, 1905. The following papers were presented:

PRESIDENT DAVID STARR JORDAN: 'Actual Origin of Species.'

PROFESSOR JACQUES LOEB: 'On Artificial Parthenogenesis.'

PROFESSOR G. J. PEIRCE: 'Irritability in Algæ.'

PROFESSOR J. B. MACCALLUM: 'On the Diuretic Action of Certain Hæmolytics.'

DR. F. W. BANCROFT: 'On the Validity of Pflüger's Law for the Galvanotropic Reactions of Paramœcium.'

DR. P. OLSSON-SEFFER: 'Seed-transport by Oceanic Currents.'

DR. HAROLD HEATH: 'The Development and Significance of the Body-cavity in Certain Invertebrates.'

PROFESSOR J. C. MERRIAM: 'Adaptive Radiation in the Early Reptilia.'

PROFESSOR C. A. KOFOID: 'On the Structure of some Pelagic Ciliata.'

PROFESSOR W. A. SETCHELL: 'Regeneration in Kelps.'

PROFESSOR W. J. V. OSTERHOUT: 'Polarity in Plants.'

W. J. V. OSTERHOUT,
Secretary.

THE PSYCHOLOGICAL CLUB OF CORNELL UNIVERSITY.

THE session of 1905 has been devoted to the consideration of experimental studies of memory and economical learning. The following papers have been read:

PROFESSOR TITCHENER (two papers): 'The Work of Ebbinghaus.'

PROFESSOR BENTLEY (two papers): 'The Work of Mueller and Schumann.'

MR. H. C. STEVENS (two papers): 'The Work of Mueller and Pilzecker.'

MISS E. MURRAY: 'The Importance of Repetition.'

MR. J. H. COFFIN: 'Learning by Whole and Part.'

DR. T. DE LAGUNA: 'The Distribution of Repetitions.'

MR. R. B. WAUGH: 'Economy of Learning, I.'

MR. S. P. HAYES: 'Economy of Learning, II.'

MR. A. C. MUHSE: 'Economy of Learning, III.'

MR. G. H. SABINE: 'The Trend of Investigation: Problems and Methods.'