SCIENCE

FRIDAY, FEBRUARY 3, 1888.

THE COMMISSIONERS OF PUBLIC SCHOOLS of Baltimore, Md., have taken the initiative in the introduction into the public schools of that city of a series of reforms which, if adopted, will be of great benefit to the pupils. This action is the more noteworthy from having originated in the school board, the proposition coming from its committee on health, and not being forced upon it by the board of health or public opinion. It is greatly to be hoped that the mayor and common council of the city will give the necessary power and money to carry these resolutions into effect. After a preamble to the effect that sanitarians and teachers have proven that children attending school are frequently subjected to influences prejudicial to health, which often leave their effects upon the constitution for life, and that it has been demonstrated, that, by expert sanitary supervision of schoolhouses and of the pupils themselves, many of these injurious influences can be mitigated and removed, the resolutions are, that the mayor and city council be requested to authorize the commissioners of public schools to appoint an officer, who shall be a physician and expert in sanitary science, to be known as the sanitary superintendent of public schools, whose duty shall be, 1st, to carefully examine all plans submitted for the construction of new schoolhouses, and suggest such modifications as may be necessary from a sanitary point of view; 2d, to advise with the commissioners with reference to necessary alterations in schoolbuildings to improve their hygienic condition; 3d, to examine all text-books before adoption, in order that type, printing, or paper injurious to the eyesight of pupils may be avoided in selecting such books; 4th, to satisfy himself, by personal examination if necessary, that all pupils admitted to the schools have been properly vaccinated or are otherwise protected against small-pox; 5th, to take such other measures, in conjunction with the health commissioner of the city, as may be necessary to prevent the spread of contagious diseases in, or through the medium of, the public schools; 6th, to examine annually the eyesight of all children attending the public schools, and keep an accurate record of such examinations; 7th, to report annually, or as often as may be required by the commissioners, upon the sanitary condition of the schools, and of the pupils attending them, and to advise the commissioners upon sanitary questions connected with schools whenever required; 8th, to give instruction, by lectures or otherwise, to the teachers in the schools upon the elementary principles of school hygiene.

ASSISTANT CHARLES A. SCHOTT, assistant in charge of the computing division of the Coast and Geodetic Survey, has addressed a letter to the superintendent of that bureau which states that the discovery of records of the magnetic declination, A.D. 1714, off the coast of Mexico, by Assistant G. Davidson, and transmitted by him to this office, Dec. 7, 1887, proved to be a matter of much importance by greatly increasing our knowledge of the secular variation of the declination. By means of these observations we are able to improve materially the expressions for San Blas and Magdalena Bay, to add the new station Cape San Lucas, and to make their influence felt as far north as San Diego and Santa Barbara. It is the range which is greatly improved; besides, the epoch of maximum declination is shifted in the right direction. Apart from the fact that a region of west declination is here for the first time observationally indicated on the Pacific coast, the power of the newly recovered declinations is due to the circumstance, that, as far as known, they cover a time when the needle was in or near a phase the opposite of the present one. For want of early observations, these previously collected for San Diego and Santa Barbara, Cal., were extremely difficult to handle; and, while it was not an easy matter to establish new expressions for these stations, their correctness, or rather applicability over the whole period of time the observations cover, is quite re-assuring. He points out the desirability of new observations (either using funds yet available before July next, or providing funds to be used after that date) at San Diego, Santa Barbara, and Monterey, and states that these stations have received no attention for seven years. These observations are demanded to give greater precision to the computed variations on our charts.

ASA GRAY.

PROF. ASA GRAY died at his home in the Botanic Gardens, Cambridge, Mass., on Monday evening, Jan. 30. He had been unconscious since last Thursday, and helpless for more than a month.

Dr. Gray was born at Paris, N.Y., Nov. 18, 1810. He took the degree of M.D. at Fairfield Medical School, in 1831, but never practised medicine. After a short time spent in teaching some branches of natural history in a private school in Utica, he was induced, through correspondence with Dr. Torrey of New York, a professor of chemistry but more widely known as a botanist, to accept, in 1833, a position in his laboratory, and a little later that of curator in the Lyceum of Natural History. By Dr. Torrey's side, he began a career of ceaseless botanical activity.

His botanical publications were begun with a description of certain sedges and newly discovered plants of north-western New York. In 1835 appeared 'North-American Grasses and Sedges,' and in the following year 'The Elements of Botany.' This last was more than a mere compilation of the materials available at the time, and gave a good account of what was known of the principles of morphology, histology, vegetable physiology, and of the department in which Mr. Gray was more interested, botanical classification. Although the young writer ventured to differ from the authorities of the day, he was happy in after years in finding that these expressions of his youth needed but little change. His 'Botanical Text-Book' was published in 1842; and with this we may refer to the educational books written by him, which comprise a long list: 'How Plants Grow' (1858), 'How Plants Behave' (1875), 'The Lessons' (1857), a new edition of 'The Elements' (1887), and the 'Text-Book,' issued during the past year, which is a revised edition of 'The Lessons.' Besides these, we may mention 'The Manual of the Botany of the Northern United States' (1848), of which there were five editions, also 'Field, Forest, and Garden Botany' (1868). His 'Manual' is probably the best known, as it must have been in the hands of every American botanist since the time of its publication. The 'Genera of North America' he began in 1848, but of this but two volumes have been published, which, even in their unfinished condition, have been of great use to botanical teachers. The great work of his life is the great 'Synoptical Flora,' which had its beginning in Torrey and Gray's 'Flora' forty years ago. As far as published, it consists of a volume of nine hundred and seventy-four pages on the gamopetalous orders, but there are other portions which have been published in the Proceedings of the American Academy. It would be impossible to enumerate the numerous memoirs and papers which have come from his pen, many of which have been tributary to the 'Flora.' Dr. Gray regarded as his most important minor work 'The Relations of the Japanese Flora to those of North America,' published in 1859. This was based on the study of plants collected by Wright, and he believed this paper gave him his reputation to a large extent in Europe.

In 1834, or possibly later, Dr. Gray received an appointment as botanist of the Wilkes expedition, which was expected to start for the South Sea Islands; but delay after delay, and a change in the plans of the expedition, caused him to resign, and about this time he received an appointment to the chair of botany in the University of Michigan, then just established. He asked for a year's absence in Europe, which was granted him, during which year he not only made valuable purchases and collections for the library of the new university, but gained the personal acquaintance of the leading European botanists. He made himself also familiar with the type specimens in the older herbaria, and came back fully equipped for the work of his life, the examination of the North American flora, the first volume of his 'Flora' being completed in 1840. He never occupied the chair at Michigan, but in 1842 accepted a professorship of natural history in Harvard. The early years of his life in Cambridge were naturally occupied with routine teaching, with appliances which would be regarded as utterly inadequate at the present time; but it was a small beginning, which has led to the better-equipped Botanic Garden and to the establishment of an herbarium. He continued his work as an instructor till 1872; but during this time he found opportunities for carrying on his work on the 'North American Flora,' for the preparation of his educational treatises, and for increasing the popular interest in science. In addition to this, he devoted much time to the American Academy, in which he always took the greatest interest.

To the public not merely interested in the science of botany, especially to the religious public, Dr. Gray is well known by his writings on the relations of science and religion, and upon the Darwinian theory. Darwin, in his letters recently published, refers to Gray as one of the three or four whose judgment on his theory was of more value to him than that of the world besides, including with Gray, Hooker, Lyell, and Huxley. Darwin had been in correspondence with Dr. Gray for years before the publication of his great book, and had been gathering from him botanical facts bearing upon his hypothesis; and from the time of the appearance of that volume Dr. Gray was one of the earnest advocates of the theory as a fair working hypothesis. Many residents of Boston and vicinity will recall the earnest discussion before the American Academy, in the years 1860 and 1861, between Dr. Gray and Professor Agassiz on this great question.

Dr. Gray was crowned with diplomas and honors from all the principal universities of Europe, and during the past summer, while travelling in England, received degrees from the Universities of Oxford, Cambridge, and Edinburgh. He leaves no children, but a widow, the daughter of the late eminent lawyer Charles G. Loring of Boston; and a host of friends in Cambridge and throughout the country will feel that his death has extinguished a bright and cheering light in the world of thought, and has removed a most cherished and valued friend and companion.

HEALTH MATTERS.

Sex and Consumption.

DR. THOMAS J. MAYS of Philadelphia has contributed to the *Medical News* a very valuable paper on female dress as a determining factor in pulmonary consumption. He says that it is currently believed that more females than males fall victims to this disease. Both Laennec and Louis held this view, at least so far as France was concerned; and Ancell, one of the most prolific and exhaustive writers on the natural history of tuberculosis, concurs entirely in this opinion. Sir James Clark's statistics, which were collected from thirteen different localities in Europe and America, showed in the aggregate more deaths from phthisis among females than among males. Dr. A. James, in an interesting article on sex in connection with phthisis, lately published in *The Edinburgh Medical Journal* (March, 1886), arrives at the same conclusion. It must be admitted, too, that, if the question of sex in relation to pulmonary consumption be viewed from an *à priori* standpoint, there are sufficient reasons for believing that the female is more prone to the disease than the male, because she is generally considered to be the weaker, and because she is more exposed to the causes which are known to give rise to it. She is confined within-doors, where she naturally spends the greater portion of her life, and is, of course, subjected to the influences of impure air and bad ventilation. She leads a sedentary life, is deprived of sunlight, exercise, and undergoes the enervating processes of gestation and lactation, while, on the other hand, the male is, as a general rule, less or not at all exposed to most of such unhealthful conditions; and it is only when he is subjected to some of them, as, for instance, to impure air, sendentary occupations, etc., that he becomes notoriously liable to pulmonary consumption.

Dr. Mays has collected statistics for many of the American cities, and also for other countries, and finds, that, so far as they go, they establish the fact beyond a doubt, that in civilized life the male sex is more liable to pulmonary consumption than the female. He gives the following statistics:—

STATISTICS OF SEX IN PULMONARY CONSUMPTION.

Locality.	Male.	Female.	Remarks.
Chicago [1]	1 : 635	1 : 793	Average for 6 years, 1869, 1881–85.
New York City, 1870	1 : 233	1 : 318	
Massachusetts, 1880	2.86%	3.28%	Per 1,000 males and females respectively.
Boston, 1883–84	1 : 248	1 : 251	
Rhode Island, 1884 and 1885	1 : 380	1 : 351	
Philadelphia, 1884 and 1885	1 : 303	1 : 310	
Nashville, 1877 and 1878	1 : 263	1 : 286	Both white and colored males and females.
" " " "	1 : 443	1 : 422	White males and females only.
" " " "	1 : 142	1 : 190	Colored males and females only.
San Francisco, 1875–80	1 : 313	1 : 418	Average of 5 years.
Sacramento	1 : 340	1 : 435	Average of years 1874 and 1879.
Cincinnati, 1883	1 : 325	1 : 423	
Baltimore, 1885	1 : 342	1 : 381	
Scotland, 1871–80	1 : 423	1 : 387	
England, 1872–81	1 : 467	1 : 502	
London, 1843–46, decedents from consumption	53%	47%	See 'Ancell,' p. 396.
Basel and Zurich, 1877–84, decedents from consumption	54.7%	45.3%	See Dr. Schnyder in *Correspondenz Blatt für Schweizer Aerzte*, Nos. 10, 11, 12, 1886.
Cantons of Wallis, Waadt, Freiburg, Lucerne, from 1877 to 1884, decedents from consumption	52.5%	47.5%	*Ibid.*
Cities of Prussia, 1875-79	1 : 236	1 : 318	
County districts of Prussia, 1875–79	1 : 314	1 : 369	
Leading cities of New Jersey, 1884, deaths from consumption in nine	94	84	

Hospital and Private Practice.	Male.	Female.	Remarks.
Dr. Flint, Sr., 669 cases	505	164	See 'Flint on Phthisis,' p. 50.
Dr. Williams, 1,000 cases	625	375	See 'Williams on Consumption.'
First Brompton Hospital report, 1848	61	39	
Dr. Pollock's practice	60.75%	39.25%	
254 patients of Dr. Schnyder's, coming from cities	165	89	See Dr. Schnyder, *Cor. Blatt für Schweizer Aerzte*, Nos. 10, 11, and 12, 1886.
914 patients of Dr. Schnyder's, from the country	537	377	*Ibid.*
500 of Dr. Brehmer's cases	319	181	See Brehmer, 'Die Aetiologie der chronischen Lungenschwindsucht.'
88 cases reported by Dr. Churchill of Paris	59	29	
67 cases reported by Dr. Thorowgood	34	33	
Cases in Royal Infirmary, Edinburgh, 1833, 1834, and 1835	365	217	See Reynold's 'System of Medicine,' vol. iii. p. 546.
Consumptives in three Parisian hospitals, proportioned to the whole number of inmates	1 : 35	1 : 21	See 'Ancell,' p. 397.
550 deaths in St. George's Hospital in ten years	388	162	*Ibid*, p. 763.
Chest Department of Phila. Polyclinic since Jan. 1885	113	88	
Brompton Hospital for Consumption, from 1842 to 1848	2,682	1,597	

[1] These figures indicate a lower death-rate for Chicago than actually exists, because we are not able to obtain the male and female population of this city separately: hence our estimate is based on the male and female population of Cook County, in which it is located, and for comparative purposes answers very well.