

SCIENCE

FRIDAY, DECEMBER 30, 1887.

THE PILOT CHART OF THE NORTH ATLANTIC OCEAN for December, issued by the United States Hydrographic Office, calls special attention to the importance of an understanding among transatlantic steamship companies and captains relative to the routes followed by eastward and westward bound vessels, in order to diminish as much as possible the dangers of collision on this great race-track of the 'ocean greyhounds.' A reprint from the chart is devoted to a brief discussion of the routes recommended this month, with the addition of a chart showing graphically their positions relative to the December storm-belt; storm-tracks are plotted by means of dotted lines; and the average force and frequency of prevailing winds in each 5° ocean square north of the 40th parallel are also given, as indicated by the results of the international system of simultaneous meteorological observation, so far as now available. It is an appropriate time to bring up this subject, now that the proposed international conference relative to the increase of safety at sea bids fair to be held. The well-known 'steam-lanes' planned by Maury in 1855 at the suggestion of Capt. R. B. Forbes have never been followed to any great extent, and indeed were never obligatory. At present each captain is allowed to use his own discretion to a very large extent, and almost every consideration is secondary to the desire to 'beat the record' by making a fast passage. If the thousands of passengers who cross the ocean every season could read the thoughts of their captains during the sleepless nights they pass on the bridges of their vessels, while rushing at full speed through a dense fog, it would hardly add to their comfort. The hydrographer, in his recommendations, marks out a new policy, and instead of the old lanes plots two routes on the chart, — eastward-bound vessels to follow the southern line, or nothing to the northward of it; and westward-bound vessels the northern line, or nothing to the southward of it; the two lines crossing the 50th meridian in 45° and 46° north latitude respectively. This is regarded as the best and only practicable solution of the question likely to meet with general acceptance, all things considered. The great difference between this plan and Maury's lanes is in the much wider limits allowed, which are thought to be necessary and reasonable on account of present conditions of navigation, the different destinations of vessels, the increased knowledge and better forecasting of the weather, and the necessity of room to allow for change of course in avoiding storms whose probable paths are now comparatively well known. The prompt use which is thus made by the Hydrographic Office, of the results of the simultaneous observations made by international agreement and published by the United States Signal Service, shows an appreciation of this important system of observation which is especially gratifying as indicating that the collection of these observations from masters of vessels will be energetically continued, now that it is in the hands of this office. It is understood that General Greely has, at the request of Commander Bartlett, ordered the immediate compilation of ten-year normals for each ocean square in the North Atlantic, for use in connection with the Pilot Chart; and the vast interests involved make this subject of such paramount importance, that it is a cause for congratulation that the United States has taken the lead not only in the inauguration of the system and the collection and publication of the observations, but also in the immediate and practical utilization of the results.

THERE IS IN SESSION this week at Trenton, N. J., a body which is something of a novelty in educational organizations, but from which great good is expected. We refer to the New Jersey Council of Education. We do not know of the existence of any similar body in any other State, and we do not believe that the organization of the New Jersey Council is as yet very well or generally understood. In his presidential address at the meeting of the New Jersey State Teachers' Association last year, Superintendent C. E. Meleney of Paterson advocated the formation of a State council of education which should have general unofficial supervision over the educational interests and educational legislation of the State. The idea proved to be a popular one, and a committee was appointed to prepare a plan for the organization of the council. The body has since been regularly organized, and is now holding its first annual meeting. Its constitution lays down as its aims the investigation and discussion of topics relating to education, the dissemination of information bearing on these topics, the consideration and recommendation of the best means of advancing the educational interests of the State, and the consideration of means by which the policy of the State may be modified in view of the progress of educational thought. The constitution limits the membership to forty-eight, and these are divided into three classes, each class to serve three years. The places of the sixteen whose terms expire each year are to be filled at the time of the meeting of the State Teachers' Association. The election of members rests with the council itself, but one-half of the nominations to fill vacancies are to be made by the State Teachers' Association, and one-half by the council. The names of the present members of the council show that its deliberations are to be participated in by representatives of every phase of education, from the sub-primary to the university. The council proposes to be the embodiment of the power of the teaching profession of the State, and will unquestionably do a great service in the cause of educational advancement. The present president of the council is Superintendent W. H. Barringer of Newark, and his address at the present meeting was to be on 'Education as a Problem.' The various working committees and their chairmen are as follows: school organization, Principal B. C. Gregory of Newark; course of study, Superintendent C. E. Meleney of Paterson; high schools and colleges, President Merrill E. Gates of Rutgers College; normal and training schools, Principal J. A. Reinhart of Paterson; supervision of schools, Superintendent Charles Jacobus of New Brunswick; school law, Principal J. M. Green of Long Branch; examination and tenure of office of teachers, Superintendent Randall Spalding of Montclair; hygiene and sanitation, Prof. S. A. Farrand of Newark; moral education and discipline, Dr. J. H. Vincent of Plainfield; statistics, Mr. A. Scarlett of Burlington; industrial education, President Nicholas Murray Butler of Paterson. It will be seen at a glance that the New Jersey Council is a working, not a talking body, and the example it sets could well be followed in other States.

THE RECENT MEETING of the American Public Health Association at Memphis, Tenn., of which a summary has been given in *Science*, was one of the most interesting and important which that association has ever held. Nine years ago its members convened in Richmond, Va., many of them having just come from cities which had been almost decimated by yellow-fever, first among which was Memphis itself. The National Board of Health had its birth in this meeting; and had the same broad and liberal spirit which characterized that meeting been fostered and encouraged, that board

would doubtless be in existence to-day, having had nearly ten years of experience, which would have enabled it to cope with any epidemic which might visit our shores. But petty jealousies arose, and as a result that board has now no existence. Its work was of the best, and five volumes of its records attest this fact. The need of a national health department in some form was dwelt upon at length by the president, Dr. Sternberg, in his address. He thinks that at the present time it would be useless to ask that the sanitary interests be placed under the charge of another cabinet officer, a minister of public health, but that sanitarians should demand that their interests receive the same consideration from the national government as is accorded to the educational and industrial interests of the country. He recommends the organization of a bureau of public health, with a commissioner at its head, with the necessary assistance to make it efficient. It has been suggested that a board of health would be better than this plan contemplates, its members coming from different sections of the country. Dr. Sternberg is right, we think, when he speaks of such a board as not calculated to do the best work. Another plan is to have such a board made up of the surgeon-generals of the army, navy, and marine-hospital service; but these officers are already fully occupied with their duties, and could not with advantage undertake the executive work of a central health bureau. Such a board would act well as an advisory body, but its work should be limited to that. It is sincerely to be hoped, that, as a result of the discussion of this important question, the next Congress will provide for a central health organization. Such action would meet with the hearty support of sanitarians throughout the United States, and would do much to quiet the minds of these gentlemen who to-day look with anxiety and concern upon the possibilities which might occur should cholera or other epidemic disease visit this country in the present unsettled condition of its sanitary administration.

SNOW HALL OF NATURAL HISTORY AT LAWRENCE, KAN.

THE Legislature of the State of Kansas, during its biennial session of the year 1885, appropriated fifty thousand dollars for the purpose of erecting a natural history building for the University of Kansas. The erection of such a building was rendered imperative by the extensive botanical, entomological, zoological, and geological collections brought together under the supervision of Prof. F. H. Snow, whose connection with the institution dates from its foundation in the year 1866. The building was completed in the autumn of 1886, and was formally named and dedicated to the purposes for which it was erected, on Nov. 16 of that year. It has two principal stories, each sixteen feet in height, together with a basement and attic so commodious and well lighted as to make the structure practically four stories in height. The building from basement floor to attic roof is divided into two portions, partially separated from each other by the main entrance-hall and stairways. The portion to the west of the entrance is devoted to the exhibition of the various cabinets, while the opposite portion is assigned to the work of instruction. The collections belonging to each department are upon the same floor with the laboratories of that department, easily accessible to both students and instructors. The arrangement of the various apartments is so well indicated in the accompanying plans as to require no verbal description. This arrangement was suggested by Mr. J. H. Emerton of New Haven, Conn., who furnished the preliminary plans which formed the basis upon which the Legislature was solicited to make the appropriation. Mr. Emerton's outlines were placed in the hands of Architect J. G. Haskell of Topeka, Kan., who completed the architectural adaptations in the matters of construction, light, heat, ventilation, and exterior style, in a successful and satisfactory manner. The rooms most naturally grouped themselves so as to form a rectangular building; but for the purpose of increasing the volume of light, and also improving the architectural effect, their form was somewhat changed.

The building is most admirably lighted; the volume being so

great that on a cloudy day the occupants of laboratories need not seek proximity to the windows for microscopical work, and the museum halls may have cases arranged in any desired relation. The large museum rooms are lighted on three sides, and necessarily have one side not lighted. To prevent this from being a dark side, a plate-glass window, eight feet wide and eleven feet high, opposite the centre of the unlighted wall, was added to the ordinary means of lighting, and has the effect of giving uniformity of volume throughout the entire space.

The exterior is in the Romanesque style, with rock-face ashlar and cut stone dressings, the stone being from the well-known Cottonwood quarries of Kansas. The main approach is by a broad flight of buttressed stone steps under a handsomely decorated portico, the decorations being suggestive of the uses of the building. Numerous stone panels are provided about the building, which may, if desired, be utilized for illustrations of natural history subjects cut in bas-relief.

The construction of the building is nearly fire-proof. All bearing-girders are of iron, and all floors are deadened with mortar on corrugated iron laid between the joists. All partitions are non-combustible, all lathing is of wire cloth, the roof is covered with slate and dressed with iron cornices, ridge and hip rolls. All interior finish is polished hard wood, so that little material is presented to feed combustion.

Heating is by steam, the 'indirect' method being employed to furnish the rooms with warm fresh air, and the 'direct' method for securing proper temperature.

Fresh air is introduced into the building by means of a 'plenum' extending under the entire building, and connecting with the outer air by arched openings and areas. Ventilation is accomplished by means of large flues leading from near floor and ceiling of all rooms to a large iron chamber in the attic, in which sufficient radiation is located to insure a successful movement of the foul air through a ventilating cupola to the exterior.

The construction of the building was by contract with McFarland & Son of Lawrence, and completion was accomplished within the prescribed appropriation, and without 'extras.'

INDIAN WHEAT.

At a recent meeting of the English Farmer's Club, Professor Wallace of Edinburgh University read a paper on agriculture in India.

Professor Wallace said he went to India not only to study agriculture in view of the important influence it was likely to exercise over British agriculture, and forestry in view of the likelihood of a chair of forestry being established at his university, but he had the further object of wishing to see for himself why it was that the government had practically given up the idea of improving Indian agriculture. He found that the apathy on the part of the government in the direction of advancing agriculture was exhibited not only in the case of the native scholars, but was general. Practically all that was left of the Agricultural Department was the name, and this was not always recognized in the presidencies. The ryots' faith in the proposals of the government to improve their practices had entirely vanished. The speaker then went on to explain the character of the Indian cattle, and showed that these were raised, not for meat, but for sinew; and he pointed out the lessons to be learned from color, the black cattle better resisting heat. As to the wheat-growing, he said, that, in order to produce wheat for the market, the ryots increased the area cultivated by taking in more land from the wastes or jungle the most convenient, in the first instance, to their holdings; but, in addition to this, they grew wheat in many cases in place of some other crop. There was a limit to the extension of the so-called 'substitution' wheat area; and the area of extended wheat-growth was, as time went on, always becoming more difficult to increase, and, even after difficulties are surmounted, less remunerative. A tract of country where extension would be the main source of wheat-supply skirted the eastern border of the desert of north-western India. Supplies of wheat were also expected to be forthcoming from the rich black soils of the southern Mahratta country when the railway communication was better established. It had been thought by some that the future supplies of Indian wheat would so increase as to flood the English markets to