terials employed in construction, their application and uses. In the fourth year, studies in the properties of materials are continued, and contracts, specifications, superintendence, and the details connected with the practical work of the architect, are considered. Throughout the whole course there are lectures and exercises in the history of architecture, as well as in the history of painting and sculpture, the aim being to make the students familiar with designs and styles which they might never even see in the daily routine of an architect's office.

The future of the department of architecture in Columbia College promises to be unusually brilliant. The trustees of the college have recently established a two-years' fellowship in architecture, which is the most valuable prize now open to architectural students in America. The conditions under which this will be awarded have not been decided as yet; but it will doubtless be a travelling fellowship, open to all the graduates of the department, thus enabling the recipient to pass two years in travel abroad. The income amounts to $1,300 for the two years. New York will soon possess, in the Museum of Architectural Casts now being prepared for the Metropolitan Museum of Art, the finest collection of architectural models in the world. No part of this collection is yet in place, though a portion of it has been received at the museum, and the promises of the museum authorities indicate a collection of extraordinary value and interest. With this collection within easy reach, Columbia College will stand easily in the front rank of architectural schools in this country, and will compare favorably with the best in Europe. Each year witnesses some new improvement to the department, both in the way of teaching and in the apparatus. The schools of architecture in this country are limited in number, and it will require hard work on the part of the others to keep abreast with Columbia. BARR FERREE.

NANSEN'S EXPEDITION ACROSS GREENLAND.

DR. FRIDTJOF NANSEN, whose daring expedition across the inland ice of Greenland excites so much well-merited admiration, gives the following description of his dangerous trip: —

"In the beginning of May, 1888, myself and the companions whom I had selected, Lieut. Dietrichson, Capt. Sverdrup, Mr. Christiansen, and the Lapps Samuel Balto and Ole Ravno, were ready to leave Christiania. After having reached Scotland, we sailed on the Danish steamer 'Thyra' for Iceland, whence the Norwegian sealer 'Jason' took us across Danmark Strait to the east coast of Greenland. The 'Jason' is a wooden steamer with full rigging. She is built for navigation in the ice-covered polar seas. Her bow is strengthened in order to withstand the heavy pressure of the ice setting along the east coast of Greenland. I hoped to find the ice sufficiently loose to permit us to reach the mainland by means of boats in the beginning of June. On June 11 we sighted the coast north of Angmagsalik, where Capt. Holm's expedition wintered in 1884–85. We approached the land to within forty miles, but here our progress was stopped by the ice. As it seemed to fill the sea as far as the coast, I did not feel justified in an attempt to force a landing. For this reason we staid on the 'Jason,' which went sealing in Danmark Strait. After the sealing was finished, — about the middle of July, — we approached the coast of Greenland for a second time. At this season the belt of ice was not by any means as extensive as it had been in June. On July 17 we approached Angmagsalik to within twelve miles, but we were again arrested by a heavy pack. As I supposed that we should be unable to approach any nearer the coast, I resolved to leave the steamer, and to attempt a landing. We left the 'Jason' with two boats, which were about twenty feet in length. Besides the boats, we carried a tent, two sleeping-bags made of deer-skin, and five long and narrow sledges for carrying provisions, ammunition, instruments, etc.

"In the beginning we made fair progress, as the ice was sufficiently loose to permit our boats to pass between the floes. Eventually we had to cut off a projecting point, but no serious obstacles were met with. At a few places we had to drag the boats over a floe, but our progress warranted the hope that we would reach the mainland on the following day. The farther we progressed, however, the closer the ice was packed, and the oftener the boats had to be dragged over the ice. On one such occasion one of our boats was stove. She was unloaded as quickly as possible, and the necessary repairs were made. Thus four hours were lost. When we were ready to start, we found the ice so closely packed that we had to drag the boats continually. Travelling was made still more difficult when heavy showers of rain set in. We were thoroughly tired out, and it was necessary to encamp on the ice in order to regain strength to await the loosening of the pack. While we were encamped, the current carried the ice rapidly southward, and the distance to the coast was rapidly increasing. When it cleared up again, we discovered that we were about fifteen miles south of Sermilik Fiord. We endeavored to reach the coast; but travelling was extremely difficult, as the ice consisted of small and closely packed floes. Besides this, the current continued to carry us southward, and it seemed that the distance which separated us from the coast was continually increasing. Thus the day was spent. The weather was fair, but the current thwarted all our endeavors. At one time we were close to the shore; then the current carried us far out into the sea, and we felt the heavy swell of the ocean. One night, when sleeping in our tent, we felt a heavy swell, and the small floe on which we had pitched our tent was subjected to heavy pressure. On the next morning we saw that the floe was cracked near our camp, and that we were close to the edge of the pack near the open sea. The boats were made ready, and preparations were made to leave the ice. At night we had approached the edge of the pack still more closely. The sea washed over our floe, the size of which was rapidly decreasing. We knew what was before us. In order to be ready to take up the struggle with full strength, I ordered everybody to turn in. Sverdrup was ordered to watch, and to call all hands when it should be necessary to leave the floe. Sverdrup, however, did not call us, and when we arose on the next morning we heard the breakers at a long distance. During the night our floe had been so close to the sea that one of our boats was threatened by the waves; but all of a sudden it was drawn towards the land, and entered the pack-ice.

"After a few days the current carried us so close to the land, that we were able to reach the coast. On July 29 we went ashore near Anoritok in 61° 30′ north latitude. During our twelve-days' stay on the ice, we were carried southward sixty-four miles. On the whole, the weather had been fair. Now we were on shore, but far southward from the point where I had hoped to reach Greenland, and where I intended to begin my journey inland. Therefore we had to go northward along the coast, as I was unwilling to change my plans.

"We started on the journey along the coast in the best of spirits. Whenever the ice was too close to the shore, we had to cut our way by means of axes, and we succeeded in making slow progress. On July 30 we passed the glacier Puisortok, which is so much feared by the East Greenlanders. On a point at the north side of the glacier we fell in with a party of natives who had visited the west coast on a trading excursion. This party, who were travelling in two women's boats, had met another party travelling in two boats, who were going southward on a visit to the west coast. We pitched our tent alongside their camp, paid them a visit, and were kindly received. On the next day we travelled in company with the first party northward, and reached the island of Ruds. The Greenlanders let us take the lead, in order to make use of the clear water made by our boats. In the afternoon rain set in. The Eskimo pitched their tents, while we continued our journey. Everywhere the ice lay close to the shore, and huge icebergs were pushed into the sea by the glaciers. At Tingmiarmiut we heard the dogs of the Greenlanders howling; but we had no time to spare, and continued our journey. On Griffenfeldt's Island we were overtaken by a northerly gale. At Akornarmiut we fell in with a new party of natives. They, however, were extremely timid, and as soon as they saw us they took to their heels, leaving behind their tents and one dog. We succeeded, however, in making friends with them by giving them a number of trinkets as presents, and on parting we were sincere friends. Numerous kayaks accompanied us when we continued our journey.

"Finally, on Aug. 12, we reached Umivik, whence, under the existing circumstances, I intended to start on my trip across the

inland ice. At this place the ice reaches the sea. Only a few *nunataks* (summits of mountains) emerge from the ice, while there are no extensive stretches of land. A few days were spent in necessary preparations. Our boats were hauled on shore, turned upside down, and in one of them our spare ammunition was stored, in case we should be compelled to retrace our steps and winter on the east coast.

"On Aug. 15 we started inland. Our baggage was packed on five sledges, of which Sverdrup and myself dragged the heaviest one, while the others dragged one each. Every one had to drag a load of two hundred pounds, — a task which was made very difficult by the comparatively steep ascent of the ice, which was crossed by numerous deep fissures. During the first and second days we made fair progress, particularly as we slept during the day-time, and travelled at night on harder and better ice. On the third day we were overtaken by a terrible rain-storm, which detained us for three days. Then we proceeded in regular marches without meeting with any serious obstacles. The ground rose continually. The snow was hard but uneven. Thus we had proceeded for nine days in the direction of Christianshaab, the colony on the west coast which we tried to reach. Then, all of a sudden, a strong and continuous snow-storm set in. The road began to be bad, and we made slow progress. I saw, that, under these circumstances, it would take a long time to reach Christianshaab. It was near the end of August, and I expected that it would be extremely difficult to travel on the inland ice as late as September. On Aug. 27 I resolved to change my course, and to attempt to reach Godhaab. Thus we shortened the distance to be traversed; and the snow-storm, which for several days had blown right into our teeth, was more favorable to us, and helped us to drag our sledges. On the other hand, I knew that the descent from the inland ice to Godhaab would be much more difficult than at Christianshaab; but we resolved to make a boat, in case the land near Godhaab should prove too difficult.

"We were in about 67° 50′ north latitude, and about forty miles distant from Godhaab Fiord, when we changed our course. Our sledges were provided with sails, for which purpose we used pieces of cloth. For three days we travelled on in this way; then the wind calmed down. Travelling became very difficult, and we had to use snow-shoes in order to prevent sinking into the snow. The surface was level and without fissures, but the ground was rising continually. It was not until the beginning of September, when we had reached a height of nine thousand or ten thousand feet, that we had reached the top of the plateau. We were on an enormous plain, level as a floor, and like a vast frozen sea. The snow was loose and fine. Small needles of ice were falling continually, and the temperature was so low that the mercury became solid. Unfortunately, I had no alcohol thermometer to show the lowest temperature, which must have been between 40° and 50° below zero. One night the minimum next to my pillow was — 31° F. We did not suffer, however, with the cold, except during a snow-storm.

"At last, on Sept. 19, a favorable easterly wind began to blow. We tied the sledges together, set sail, and made rapid progress westward. We were descending at the same time. In the afternoon we discovered the first mountain of the west coast. At night I suddenly discovered through the falling snow a dark spot, which we approached without fear of any danger. When we were at only a few steps distance, I discovered that the dark spot was a fissure. We succeeded in stopping the sledges at a few feet distance, but thereafter we proceeded more cautiously.

"The ice grew more impassable the more closely we approached the coast. Besides this, we had to change our course, as we had entered the great glacier emptying into Godhaab Fiord. On Sept. 24, at a small lake south of Kangersunek, we finally reached the land. Here we left part of our sledges and provisions, and went along the river Kukasik toward Ameragola, where we arrived on Sept. 26.

"Thus the inland ice was crossed; but we had to reach an inhabited place as soon as possible, as our provisions began to be exhausted. Besides this, our throats and mouths were swollen and sore by the long-continued use of pemmican. It was impossible to reach Godhaab by land, and we turned to building a small boat. The felt floor of our tent was used as a cover of a frail frame which was built of willows and of a few poles. On Sept. 29, Sverdrup and myself started for Godhaab, while the others went to fetch the rest of our baggage from the edge of the inland ice. With great difficulty we succeeded in reaching New Herrnhut, a missionary station, on Oct. 3. After a visit to the missionary, we proceeded to Godhaab, which lies a short distance off. We were received very kindly. Two kayaks, with the necessary implements, were despatched at once to Ameragola to fetch the rest of our party. Unfortunately they were delayed by stormy weather, and we did not meet at Godhaab until Oct. 12. An attempt to return to Norway on the steamer 'Fox' from Ivigtut failed; but I must confess that I do not regret the necessity of having wintered in Greenland, as I had thus an opportunity to make a thorough acquaintance with the Greenlanders."

Thus Dr. Nansen concludes his preliminary report, which is soon to be followed by a scientific report. On April 16 the ship 'Hvidbjörnen' arrived at Godhaab, and on April 25 Dr. Nansen and his party left this place. After a brief stay at Sukkertoppen, which is situated a little more to the northward, and an unsuccessful attempt to cross the ice-pack of Davis Strait, the ship returned home. On May 19 the land of Norway was sighted, the next day Cape Skagen was reached, and on May 21 the steamer arrived at Copenhagen.

SIXTEENTH ANNUAL REPORT OF THE BOARD OF HEALTH OF NEW HAVEN.

IN this report the efficient health-officer, Dr. S. W. Williston, presents in concise form the influences which have conspired to bring about a comparatively high death-rate in the city, — higher than in any year since 1881, though distinctly less than the average in the preceding years. This increase has been chiefly due to zymotic diseases, one-fourth of all the deaths being due to preventable causes. The mortality from diphtheria and membranous croup was nearly twice that of 1887; that from measles and diarrhœal diseases was also high. From small-pox there were two deaths during the year. The history of these cases is both interesting and instructive, and emphasizes the necessity for a correct diagnosis in this disease. The first case was that of an engineer who contracted the disease in New York City. He had been vaccinated early in life, and thus escaped with varioloid, not more than thirty or forty pustules appearing on his body. His wife, attending him, was in due time taken with the same form of the disease. Both cases were treated for measles, both had had measles previously, and both had been vaccinated in childhood. The family living on the floor below, consisting of Mr. D., his wife, and child, had never been vaccinated, save Mr. D. The wife was first to contract the disease, having nursed the second patient. She died of confluent small-pox. The daughter, six years of age, contracted the disease from her mother, but so soon that vaccination after the recognition of the disease did not suffice to prevent its occurrence, of which she died. A middle-aged lady, a relative, called in to nurse Mrs. D., was vaccinated for the first time six days after exposure. The vaccination formed a typical pustule, but did not prevent the occurrence of the disease in a mild form. The disease was confined to the one house; and all those thrown in contact with the cases, who had been properly vaccinated, escaped. The two who had never been vaccinated died. One who was first effectively vaccinated six days after exposure, had it in a mild form. The two who had not been vaccinated since childhood had a light varioloid. In commenting on this case, Dr. Williston says, "And yet, I am sorry to say, in the light of such evidence, that has been so often repeated, there are physicians in New Haven to-day who do not believe in vaccination!"

The history of typhoid-fever in New Haven during the year is of special interest with reference to the localities in which this disease appeared. In recent years in Brooklyn this fever has seemed to be especially virulent in the better portions of the city, and to be practically absent from those sections in which the sanitary conditions are inferior; so much so, that it has become a popular impression in that city that typhoid-fever is a disease of the rich and well-to-do, and not of the poor. This was not true of New Haven