

we get a total of 28 days, as the time which would probably be occupied by a special courier in making the entire trip around the world. This is what could be accomplished at the opening of the twentieth century. The rapid increase in steamship and railroad speeds which is now taking place makes it likely that before a quarter of the century has passed the same distance could be covered in three weeks or less, or in about the time that it took our forefathers, in the days of the stage coach, to travel overland from Boston to Washington and back.

NEW YORK CONSOLIDATED.

The opening of the year 1898 has seen the creation of a new metropolis which easily takes rank as the second greatest city in the world. If the ghosts of the founders of New Amsterdam could have joined the vast multitude which gathered on New Year's Eve in the City Hall Park to celebrate the birth of the new New York, they would have found themselves in a city which in size and wealth had grown far beyond the most sanguine dreams of its founders. In point of area and population old New York was rapidly climbing to the position of second city in the world, and the consolidation has simply hastened an event which was already within measurable distance.

Old New York covered an area of about 39 square miles and was popularly associated with Manhattan Island only. New New York covers an area of 320 square miles and includes five great boroughs: Manhattan, or that part of the original city comprised within the island of Manhattan; the Bronx, the part of old New York to the north of the Harlem; Brooklyn, including the city of that name and the districts between the city and the Atlantic Ocean; Queens, a district in itself larger than the old city, lying to the east of Brooklyn and between the Sound and the ocean; and Richmond, including the whole of Staten Island. The population of the city is increased from 2,000,000 to 3,388,000, giving it a place between London with 4,500,000 and Paris with 2,539,000. The next largest city in America and the sixth largest in the world is Chicago, with 1,438,000. The new city has 6,587 acres of parks and squares, 1,200 miles of streets, of which 1,002 are paved; 1,156 miles of sewers; 65½ miles of elevated railways; and 466 miles of surface railways. The shipping facilities of the new city are shown by the fact that it has over 350 miles of water front. The bonded debt is about \$200,000,000, or equal to that of London, and the assessed valuation of real estate is about \$2,500,000,000, that of London being over \$5,000,000,000. The annual expenditure is about \$67,000,000. The daily water supply, reckoned at 330,000,000 gallons, is over 50 per cent greater than that of London. If the present rate of progress should be maintained, it is likely that the coming century will not be half spent before New York will be both numerically and in point of wealth the metropolis of the world.

A NOBLE THOROUGHFARE.

The rapidity with which tall office buildings have been multiplying in the downtown districts of Manhattan Island has indirectly been the means of providing the consolidated city with one of the noblest thoroughfares in existence; for it was the necessity for increasing the water supply of these structures which led to the tearing up of Fifth Avenue to lay larger water mains, and the asphaltting of the thoroughfare for a distance of over six miles. When the old mains were laid the calculations as to the city's requirements were based upon the necessities of buildings of from five to eight stories in height. The subsequent erection of so many fifteen to twenty-five story structures has, of course, greatly increased the consumption. To meet the demand and make a liberal provision for the future, the authorities have laid two 48-inch mains from Eightieth Street to Fourth Street, one line on each side of the street, and between these a subsidiary 12-inch water pipe has been laid. Previous to this the avenue was laid with Belgian blocks, and the unceasing din of traffic was a serious drawback to this handsome thoroughfare. The opportunity presented by the excavations was used for laying the whole six miles with asphalt pavement. The change in the appearance and quiet of the street is striking, and, no doubt, justifies the statement of General Collis, on his return from an inspection of European capitals, that in some respects, and especially in its electric lighting, Fifth Avenue is unsurpassed among the notable thoroughfares of the world.

LIVING WITHOUT A STOMACH.

In these days of remarkable achievements in surgery there seems to be almost no limit to success in operative procedure. In the matter of brilliant achievements along this line must be noted the operation performed by Dr. Carl Schlatter, of the University of Zurich, who has succeeded in extirpating the stomach of a woman. At present the patient is in good physical condition, having survived the operation three months.

Anna Landis was a Swiss silk weaver, fifty-six years

of age, and, as all surgeons know, a capital operation at this time of life is attended with more than usual risk. From childhood she had abdominal pains, and medical treatment afforded no relief. On examination it was found that she had a large tumor. After a preliminary strengthening of the vital functions, she was operated upon, and the entire stomach was found hopelessly diseased. Dr. Schlatter conceived the brilliant idea of removing the stomach, which he did, uniting the intestine with the œsophagus. This done, there was then a direct channel from the patient's throat down through the intestines, while, in place of a stomach, was the end of the intestine—a length of about fifteen inches.

The abdominal wound healed rapidly, and three days after the operation nourishment by enema was discontinued and the patient was fed by the mouth. In a few days she could eat eggs, chopped meat and even a half of a chicken. This, however, appeared to have overloaded—we cannot say her stomach—her substitute for that organ, and she vomited, thus proving that this act, which is usually associated with the spasmodic contraction of that organ, can be considered special to it no longer.

A New York physician who saw the patient says that he was struck by her ruddy complexion and general alacrity. Her appetite was good; she did not eat much at a time, but ate every two or three hours.

In the lower forms of life the functions are little specialized, and in case of need other parts of the organism may be impressed into service to take the place of those which are missing; but with man it is different. When deprived of an organ which ordinarily performs functions essential to life, he dies. The recent operation on the Swiss woman throws over our preconceived and stereotyped notions as to the vital organs. The stomach has long been supposed, in a certain sense, to govern the other functions of the body, but its physiological place in the human economy is threatened and the work done by this autocrat is now performed by the intestines, which, in this case, have assumed the whole burden of digestion, and, to all accounts, they are performing their good offices in an exemplary manner. It is not beyond the limits of possibility that there will be a future enlargement of the digestive tract to form a food pouch, and replace, in some degree, at least, the missing organ. Such an incident tempts one to speculate on the validity of many opinions we now hold regarding the physiology of the vital functions. There is a limit somewhere, but medicine and surgery are constantly pushing it farther away and the end is not yet.

Owing to the unique nature of this daring and brilliant operation, we have published a full account of the case in the current issue of the SCIENTIFIC AMERICAN SUPPLEMENT.

JOINT KLONDIKE RELIEF EXPEDITION.

The arrangement effected December 30, says The New York Times, between Mr. Sifton, the Canadian Minister of the Interior, and the War Department contemplates that the relief expedition shall be executed jointly by the United States Army and a force of the Mounted Police of Canada, which constitutes the military arm of the Dominion. The United States force will proceed with the relief stores to Skaguay, where they will be joined by the Canadian Mounted Police, about forty in number, and the two forces will then proceed together to the points where the relief is to be distributed.

The determination as to Skaguay is, however, still open. The Canadian officials concede much latitude to the American authorities in the actual distribution, recognizing that the expedition is fitted out on this side, although a considerable part of its work will be done on the Canadian side of the border. No duties will be imposed on the stores carried by the relief expedition.

Mr. Sifton also held a conference with Secretary Gage and discussed the unsatisfactory condition of customs regulations along the border and at coast ports where goods are received by one country for transportation to the other country. It was the mutual feeling that an improvement of the system could be made, and negotiations are in progress which are hoped to effect changes advantageous to both sides.

Mr. Sifton says that the only practicable route to Dawson City is what is known as the White Pass, or commonly called the lake route, commencing at Skaguay, on Lynn Canal. He stated that they have eighty-five men in the territory, and expected to have fifty more at Skaguay on or before January 5. They have thirty tons of supplies now stored at Skaguay for transportation over the pass.

The Canadian authorities have a post at Lake Bennett, another at Tagish, at which latter place twenty men are stationed; another post at White Horse Rapids, and two posts intervening between the latter point and Fort Selkirk.

It is the intention of the Canadian government to have a detachment of two hundred and fifty men in the territory within the next thirty days. Their detachment will be ready to leave Skaguay on January

15, but the minister has kindly consented to hold the expedition, that it may accompany the expedition of the War Department, which will leave Skaguay on or before February 1. The minister was over the pass in October last. He stated that the government would be very glad to grant the expedition the use of its posts on the route and all other facilities over the territory.

A YEAR'S SHIPPING RECORD.

The Custom House figures on the shipping of the Port of New York for 1897 show, says The New York Times, that there were 4,614 arrivals of vessels from foreign ports, 7,095 from Eastern domestic ports, and 3,798 from Southern domestic ports. Of the foreign, 2,313 were British, of which 1,667 were steamships; 952 were American, of which 323 were steamships; 517 were German, of which 444 were steamships; 281 were Norwegian, of which 242 were steamships; 149 were Dutch, of which 138 were steamships; and 115 were French, of which 111 were steamships.

Of sailing vessels from foreign ports there were 94 entries of ships and 131 of barks, 40 of brigs, and 381 of schooners flying the British flag; flying the American flag, 58 ships, 67 barks, 26 brigs and 478 schooners.

There were 1 Nicaraguan steamer, 1 Greek steamer, 2 Haitian brigs, 1 Hawaiian ship and 2 Hawaiian barks, 1 Brazilian steamer, and 2 barks carrying the same flag; 20 Austrian steamers, 23 Portuguese steamers, 31 Danish steamers, 53 Belgian steamers, 58 Spanish steamers, and 4 Italian.

The coastwise trade confined under the navigation laws to American bottoms shows that of the 7,095 vessels from Eastern ports 6,564 were schooners, while only 503 were steamers. The others were sailing craft of various rig. The Southern trade shows a large proportion of steamers, there being 1,483, as compared with 2,246 schooners, the remaining 69 vessels being ships, barks and brigs.

The disparity in proportion of the steamers in the coastwise trade with the East is accounted for by the fact that the Sound affords a sheltered course for steam vessels of a class which do not enjoy the dignity of a place in the shipping records of the Custom House. These are the Sound steamboats, which carry on so large a part of Eastern traffic.

The December reports of arrivals show 358 vessels of all classes and nationalities from foreign ports and 859 from domestic.

THE CONDITIONS OF MODERN NAVAL WARFARE.

In the late war between China and Japan, naval warfare on a large scale and under modern conditions was for the first time fairly exemplified, says The Medical Record. Without doubt, if the Japanese had met foemen more worthy of their steel, the lesson taught from a medical and surgical point of view would have been even more instructive. However, quite enough facts have been gathered to demonstrate plainly that a complete revolution has been effected in the methods of naval warfare. Not only has it been shown, as might have been anticipated from the nature of the new conditions, that the wounds received were of a more fearful and generally of a different character, but it also has been clearly shown that the shock to the nervous system from the noise and vibration was terrible—in some instances, indeed, fatal. Dr. S. Suzuki, fleet surgeon in the imperial Japanese navy, read before the International Congress at Moscow a paper treating of the wounded in naval battles between Japan and China, together with some notes on the sanitary conditions of the navy during the war. This paper has just been published in pamphlet form. Many interesting details are given. The principal seat of injuries appears to have been the head, while the hurts causing the largest number of deaths were those affecting the larger parts of the body. This was a natural result, because in the majority of these cases at least one-third of the body was burned and in some wholly destroyed. It is pointed out that in sea fights most of the wounds are in the head, and in land fights in both extremities. The explanation is that in land fights soldiers as a rule are injured only by shells and bullets, whereas in sea battles all materials around the combatants, as ship planks and rigging, etc., being blown to pieces by the bursting of shells, increase the causes of injury. The antiseptic treatment, which was of course pursued, seems to have been attended with most satisfactory results. No infectious diseases or wounds occurred, with the exception of one fatal case of erysipelas. There was one case of burns leaving remarkable keloid scars. The sanitary condition of the Japanese navy was throughout the war excellent. Venereal disease and its sequels supplied 37.69 per cent of the total number of cases of disease. Diseases of the respiratory system numbered 9.01 per cent; diseases of the digestive system, 10.09 per cent; and skin diseases 8.91 per cent. There were 167 cases of malarial fever, 4.79 per cent of which were fatal. But 3 cases of cholera occurred in the Japanese navy. Of the 43 cases of kak'ke, 3 were fatal, the ratio of cases per 100 of force being 0.21. Of the total number of persons dying at sea during the war, 150 were killed in action and 177 died of disease.