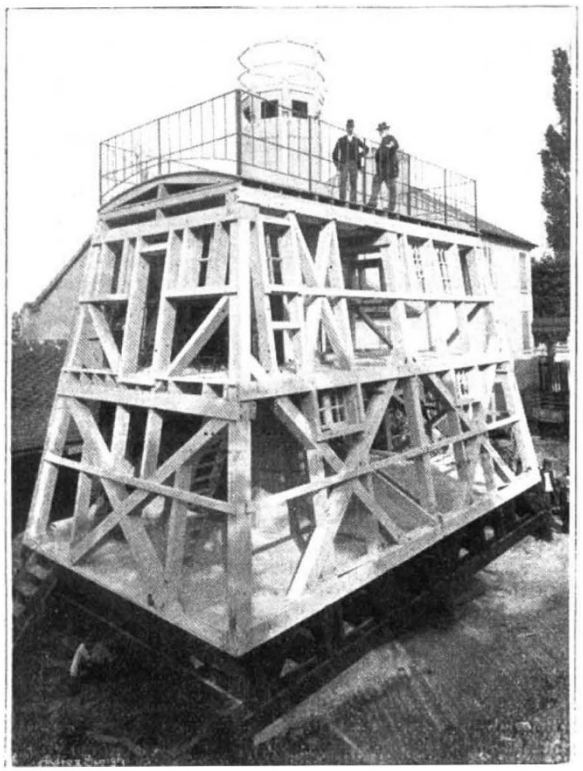
College on the other, cannot fail to exert a most important influence on the future development of trade and manufactures in Lancashire. What Manchester is doing in this magnificent way, other towns, notably Birmingham, Salford, Stockport, Oldham, Bolton, and others, are also doing, it is true on a smaller scale, but still in a manner sufficient for their needs. How long will it be before London moves? H. E. ROSCOE.

THE MONT BLANC OBSERVATORY.[1]

THE project of establishing a meteorological and astronomical observatory on the summit of Mont Blanc has, under the care of M. J. Janssen, of the Meudon Observatory, made considerable progress during this year's summer months. It has been decided to use the snow itself as a foundation on which to rest the building. That this can be done with security was shown by some experiments carried out at Meudon last winter. A miniature mountain was made of snow pressed to the same density as that which is found on Mont Blanc at a depth of one or two metres below the surface. This being



made level at the top, discs of lead 35 cm. in diameter, and weighing each about 30 kgr., were placed on the snow, one upon the other. After twelve of these had been piled up, with an aggregate weight of 360 kgr., they were removed and the depth of the impression measured. It was not more then 7 or 8 mm. Thus a structure measuring 10 m. by 5 m. might safely weigh 187,000 kgr. without sinking into the snow more than a few centimetres.

The summit of Mont Blanc is formed by a very narrow edge of rock 100 m. long, running from west to east, and covered by snow which is thicker on the French than on the Italian side. The level of this snow has not shown any important oscillations throughout a number of years. To obviate the disturbing effects of the storms which frequently rage round the summit, the building is constructed in the shape of a truncated pyramid, the lower floor being sunk into the snow. The rectangular base measures 10 m. by 5 m. The upper floor, which will be devoted to the observations, is covered with a flat roof, towards which ascent is made by a spiral staircase leading from the basement upwards through the whole building, and above the flat roof to a small platform destined for meteorological observations.

The whole observatory has double walls to protect the observers against the cold. The windows and doors are also double, and provided on the outside with shutters closing hermetically. The floor is made of double planks, and furnished with trap-doors giving access to the snow supporting the observatory, and to the screw-jacks placed in position for adjusting the level of the building in case the snow should yield. The building will be provided with heating apparatus and all the furniture necessary to make habitation at such an altitude possible.

Up to the present the observatory has been transported in parts to Chamounix. On the Grands-Mulets a cottage has been erected for the use of the workmen and for storing the things destined for the observatory.

On the Grand Rocher Rouge another cottage has been built, only 300 m. below the summit, in which the workers and observers can, if necessary, take refuge. Three-quarters of the materials for the observatory have been transported to the Grands-Mulets (3000 m.) and the rest to the Rocher Rouge (4500 m.).

Next year the erection on the summit will be carried out. An astronomical dome, which is to complete the observatory, will also be taken in hand. The work done up to now has been carried out under great difficulties, owing to the fact that everything had to be carried by hand. But no accident has, so far, marred the success.

Dr. Capus, who accompanied M. Bonvalot in his well-known expedition to the Pamir, has promised his assistance for certain observations. But the observatory will be international, and open to all observers who wish to work there. E. E. F. d'A.

[1] Janssen, *Comptes rendus*, November 28.

M. PASTEUR'S SEVENTIETH BIRTHDAY.

FRENCHMEN may be cordially congratulated on the enthusiasm with which the seventieth birthday of M. Pasteur was celebrated on Tuesday. It afforded a most striking illustration of the way in which they appreciate the services rendered by men of science. But the celebration was not, of course, one in which only the countrymen of M. Pasteur were interested; representatives of science from many different parts of the world were present to do honour to the illustrious investigator.

The ceremony took place in the great amphitheatre of the Sorbonne, which was crowded by a brilliant assembly including many of the foremost men of the day, not merely in science but in politics and literature. M. Carnot was present, and among those who supported him was M. Dupuy, the Minister of Public Instruction. M. Pasteur entered the amphitheatre leaning upon the arm of his son and upon that of the President of the Republic. All who were present rose to their feet and greeted the hero of the day with loud cheers. M. Pasteur, who was much affected by this reception, took his place beside his colleagues of the Institute and a row of Ambassadors and Ministers.

The proceedings were opened by M. Bertrand, perpetual secretary of the Academy of Sci nce, who acted as chairman. At his request an address was delivered by the Minister of Public Instruction, who spoke eloquently of the great qualities displayed by M. Pasteur during his splendid career, and of the benefits conferred on man-