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Autor: Winter, A.B.
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la neige: leurs yeux étaient fixés sur une étoile qui brillait au plafond de la grotte, au-dessus de la femme au manteau bleu. Des centaines et des milliers de moutons, aussi nombreux que les peuples de la terre, couvraient, derrière les bergers, les flancs de la montagne. On voyait leurs dos gris et blancs moutonner au loin dans les plaines, comme les vagues de la mer de brouillard.

Rüedi se prosterna de nouveau.

N'avait-il pas été l'un de ces bergers aux yeux ardemment fixés sur l'étoile de Betléhem, cherchant le chemin qui devait le conduire à l'Amour? Oui, il avait été ce berger. Trop tard, pour qu'il lui soit encore permis de vivre la vie humaine et divine sur cette terre. Trop tard, mais il était resté fidèlement ce berger au regard tendu vers l'image divine de la Mère et de l'Enfant.

Quand il releva à nouveau le front, il éprouva le vertige d'un homme devant lequel les entrailles de la terre se seraient subitement ouvertes. Des rois qu'il voyait de dos, aux manteaux écarlates couverts d'or, se tenaient agenouillés devant la crèche où reposait le Fils

de Marie. Un parfum se répandait dans l'air. Ils déposaient aux pieds de l'enfant les trésors du monde.

Rüedi baissa la tête. Pouvait-il venir, lui, aux pieds de son Roi? Pauvre parmi les pauvres, qu'avait-il à offrir? Dépouillé parmi les dépouillés, que lui restait-il? Soudain il vit se lever et passer en lui, comme déferlent les vagues des mers, des gloires de soleil se levant sur une création rajeunie, et la pompe des couchants s'éteignant par delà les neiges éternelles, et la paix diamantée des nuits étoilées couvrant la terre dormante: trésors de parfaite sérénité qu'il portait en lui, qu'il possédait en maître; il venait les offrir, il les donnerait à l'Enfant divin, et cela c'était le sacrifice de sa vie même.

Comme il relevait la tête, il vit qu'il était seul; Marie, la Mère de Dieu, se tenait debout dans son manteau bleu. Elle le regardait.

Ayant ainsi connu que son âme serait accueillie par le Créateur, Rüedi éprouva que la joie montait en lui. Ferme sur ses jambes qui ne tremblaient pas, il descendit dans la nuit blanche, où des clartés d'étoiles étaient posées sur la neige.

Magali Hello.

WINTER TRAFFIC ON THE HIGH ALPS

Snow! The lure of snow it is that has filled the train in which you are travelling. The sight of snow has brought that smile of satisfaction to your face as you look out on the hills white with snow. Snow and the sport that snow, and snow alone, affords is the magnet drawing visitors from many lands to Switzerland. Yet that very snow for untold centuries reared an impenetrable barrier round those mountain fastnesses, those gay sport-centres to which you now speed at ease by train and coach, running to schedule time. But, let me tell you, that barrier did not yield to the first assault, nor to the second either. The opening up of these Alpine routes has taxed the brains and defied the efforts of engineers and mechanics time and again.

One difficulty is owing to the contour of the country. The railway lines with their many diverging branches everywhere follow along and up the many valleys, and from them roads branch off and ascend the mountain slopes on either side. Now, some of these roads have a rise of thousand feet from the railway station high up in the a valley to the head of the pass, and the condition of the snow naturally varies with the altitude. This constitutes one serious obstacle to traffic, for while the snow on the lower reaches may be loose and soft, at the top it will be granular and half frozen under its own weight.

The main difficulty, however, is due to the severe climate of the higher Alps, and the immense quantity of snow which falls there every winter. On the Ma-

loja Pass, for example, quite apart from the avalanche debris, snow drifts twelve feet deep will block the road. Rather a nasty obstruction that on a steep gradient to the passage of a motor coach laden with a score of passengers. The problem was how to clear off that enormous burden of snow and to keep the roads open for traffic. Well it was up to the Government to tackle the task, seeing that the Tourist Traffic means more to Switzerland than coal to Britain or cotton to the States. Somehow, if possible, a contact must be established between the supply and the demand, between the Sports-centres and the sportsmen. The horse drawn vehicles of earlier days were utterly inadequate. Why, there are a thousand passengers a day on some routes.

Hence, in 1922, the Postal Department of the Government started campaign. It took six years of costly experiments and disheartening failures before the obstacles to traffic in the winter were overcome. The first attempt at keeping the road clear of snow was made on the Lenzerheide—Coire route. It proved an utter failure. Heavy wooden snow-ploughs were dragged by powerful tractors down the steep gradients, but the resistance of the snow simply crushed in the wings of the ploughs. The ploughs were made stronger, and more powerful tractors were employed, but with no better result.

So trial was made next season of an invention by a Swedish engineer. This is rather a complicated affair and the details very technical. Suffice it to say, that

it included the provision of additional wheels and an arrangement of levers and springs, by means of which each wheel was free to rise and fall independently of the others on passing over inequalities of surface. The driving wheels were fitted with solid rubber tyres having transversal ribs which fit into slots in a caterpillar rubber belting. Any snow falling on the belting is squeezed out by the rubber before it can freeze on. This device answered all right on the level but was quite inadequate for service on the steep Alpine roads.

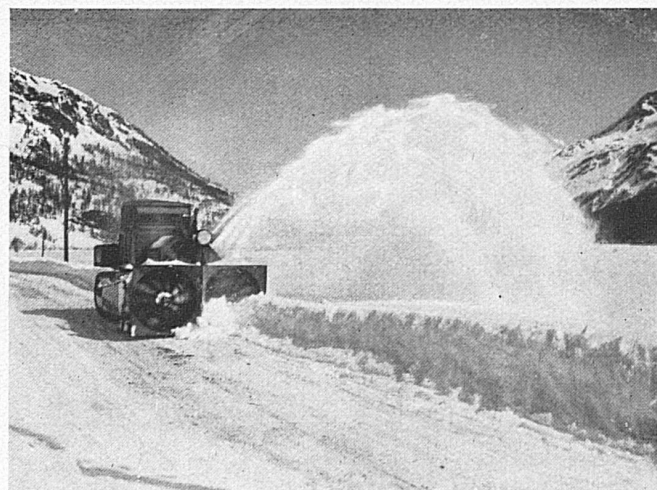
Another year was spent in devising adjustments and improvements for increasing its strength, such as the reinforcement of the belting with steel plates. When in the winter of 1925, it was found possible to drive these ploughs through three feet of snow, the route



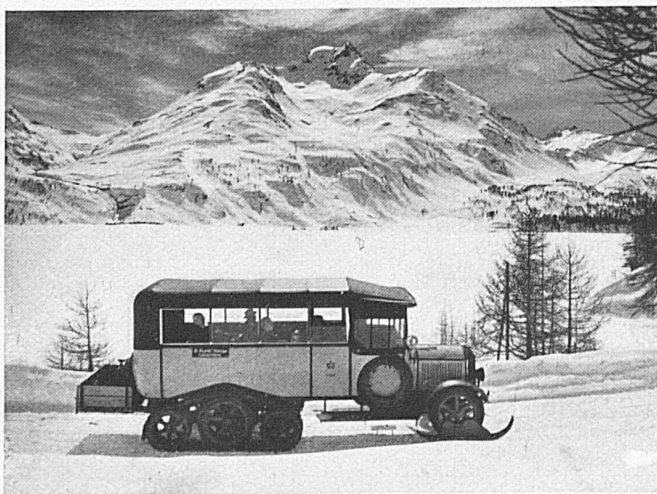
from Coire to Lenzerheide was opened for passenger traffic. Next season, in 1926, after still further improvements had been made with the ploughs, and when the caterpillar drive had been fitted on the coaches, an attempt was made to open the Maloja route. It was no use. Other obstacles and further misfortunes occurred. On the powdery granular snow, the rubber belting revolved without getting any grip on the snow. The coaches simply stood still. The rubber belting itself snapped. The wings of the ploughs were once more crushed together against the accumulated weight of the snow piled on the roadside. The task was appearing hopeless. The snow had won again.

But meanwhile the Military Authorities had been

tackling the same problem from another angle for their own purposes. And just at this critical juncture they had succeeded in bringing out a rotary snow plough. To the front of a powerful motor lorry, itself fitted with a caterpillar belting of rubber strengthened with steel plates, 1.2 centimeters thick, a kind of funnel-shaped casing is affixed. This casing has a wide mouth or opening in front, and contains two wheels of four



feet in diameter, one on either side. These wheels are fitted with scoops, and can be driven round by a separate engine at the rate of 280 revolutions a minute. Thus when this rotary plough charges a snow-drift, the snow is forced through the front opening on to the wheels within the casing, and is then hurled through two openings on the top to a distance of some thirty feet.



Winter travel of the Federal Post — Rotary Snow ploughs and Caterpillar traction / Winterbetrieb der eidg. Postverwaltung mit Schneeschleuder und Raupenbandwagen

It is a fine sight to see these rotary ploughs in action. They can attack any drift of snow however deep and however icy it may be. But naturally their rate of progress is slow, not exceeding three miles an hour. The track also which they clear is only eight feet wide, quite insufficient for the passage of the large postal coaches. The most recent snow ploughs, on the other hand, provided with adjustable iron wings, cover a span of fifteen feet. Thus the one must supplement the other. As soon as the snow commences to fall, the ploughs are brought out. Then the rotary ploughs follow and clear the piles from the roadside. In this way a broad track is now kept clear. The victory has been won.

A. B. Winter.