ments—crowded houses, with deficient ventilation and bad drainage. Some will be interested to know if epidemics of diphtheria and scarlatina have preceded, or followed close on, these of infectious sore-throat. I cannot say this has been the case, though scarlatina is frequently present in the same district in which they occurred.

I shall now show you the micro-organisms I have always found in the secretion and membranous deposit removed from the tonsils in such cases, and their mode of growth when cultivated artificially in gelatinised meat-infusion.

A WINTER VISIT TO DAVOS.

By E. DE LA HARPE, M.D., Lausanne, Switzerland.

Two roads lead to Davos; the first from Chur (or Coire), through Churwalden, Lenz, and Wiesen. I found it far more picturesque and interesting than the other one, though somewhat longer. Starting from Chur at 8 A.M., we reached Davos at 4.30, with forty-five minutes' stoppage at Lenz for dinner. The other road begins at Landquart, a small railway-station about eight miles from Chur, and passes through the Prättigau valley, to Klosters and Davos; it is a drive of seven hours. It is better to go by Landquart and return by Lenz, as one thus has all the time a fine view before one's eyes.

I started from Chur on February 25th. The weather was very fine and mild. In a few hours, Wiesen was reached. It is a well sheltered place, which strives to take its rank as a winter station; it has two large hotels, and a medical man. It lies pretty high above the valley, on the steep slopes of a mountain, facing the south-east. It must have accordingly a high mean temperature, but it is about 800 feet lower than Davos. At the time of my journey, there was not a trace of snow to be seen at Wiesen and the sun was already almost too hot.

Between Wiesen and the Davos valley, the road winds through a narrow pass, called "die Züge" (that is, the passages of the avalanche). There is room only for the river, the Landwasser, which comes from Davos, and the road has, in many places, been cut through the rock. The small amount of snow which fell last winter is remarkable. Commonly, the avalanches fall into the gorge, so as to cover up river and road many feet deep, and a tunnel for the traffic has to be dug in the snow. There was nothing of the kind this year; in some places, the river only was hidden under a frozen crust of snow, one or two feet thick.

In the valley of Davos itself, there was about one foot of snow on the ground, except on the western slopes, which were completely bare at their base. The valley becomes wider as soon as one emerges from the pass, and the road leaves the river-side. This road is not good; the water remains on it, and renders very necessary the foot-pavement which exists in the village.

Davos is a collective name for two localities: Davos Platz, the larger of the two, and Davos Dörfli, one mile and a quarter farther north. Davos Platz bears a certain likeness to Montreux, but without the steep slopes which are such a drawback at the latter place. There are so many new houses and large hotels, that it is well nigh impossible to discover the old chalets hidden behind them, and form an idea of the old Davos. There is only one street, bordered on both sides with clean houses; the street itself is kept in good order. I noticed, indeed, that in many places refuse is thrown on the ground between the buildings; but a remedy to this evil exists under the form of special carts, which convey offensive matters out of the village.

Some cases of typhoid fever having formerly occurred in Davos, the authorities hastened to make two important improvements, by providing good water, and establishing a system of drainage. The water is taken in the mountain high enough to be safe against the possibility of pollution. At the time of my visit, workmen were busy everywhere, laying pipes and fitting up public fountains. The drains flow into the Landwasser.

Davos already looks like a small town; many houses have shops with large plate-glass fronts, displaying all the various articles requisite in such a place and climate. On the road, one meets numerous patients taking walks, foreigners of every description, Germans, English, Dutch, Americans, etc. Nearly everyone has dark snow-goggles, a strong walking-stick with an iron point, and well nailed boots. A white felt, or a large straw hat, and occasionally an umbrella, complete the outfit, but no overcoat, or only a light one. The patients remain as much as possible out of doors, sitting in the sun or walking, going up the hills, or skating. Those who wish to remain quiet may hear the daily concerts of the "Kürmusik;" others take drives to Wiesen, Davos Dörfli, etc.

I lodged at the Curhaus, the largest hotel in Davos. It is a fine building, containing also the meeting-rooms, the theatre, etc. It is heated by steam-pipes, which are laid in the passages as well as the rooms. Every window has in its upper part a movable sash for ventilation, which may be opened at pleasure. Some of the rooms have, besides this, apertures in the walls above the door. In some, there are stoves instead of steam-pipes. The dining and drawing rooms are well heated and ventilated. The food is good, but, like that of all other hotels, seems to contain too much meat and too few amy-laceous articles, which, with fatty bodies, are of great importance to consumptive patients.

The price of board and lodging ranges from seven francs upwards. I paid, for a very comfortable room on the ground-floor, with carpet, stove, sofa, large looking-glass, etc., nine francs a day. Other petty expenses—attendance, firing, *cur und musiktaxe*—brought this sum to about eleven francs. There are hotels with much more moderate charges, namely, from five to seven francs, all found. A patient may also take a *chambre garnie*, and have his meals at a *table d'hôte*. English people chiefly reside together in two or three hotels (Belvedere, Buol, etc.), which form the English quarter, "das Englische Viertel."

During my short stay there, the weather was very fine, the sun burning hot. The snow was already melting rapidly (a very abnormal thing for the season). There was a frost, nevertheless, every night. The sun rose at 8.30, and set at 4.30; it rises three-quarters or one hour earlier in Davos Dörfli. During the second half of December, the hours of sunshine are from 10 to 3 o'clock.

I went in the morning with the "Curisten" to take the customary walk up the mountain called the Schatzalp, a pasturage nearly 1,000 feet above the village. Early in the morning, the patients are already seen slowly going up hill to altitudes fixed by the medical man's prescription; only a few go as high as the Schatzalp. The footpath winds in a picturesque manner among the big fir-trees, but it is not protected enough against the water, and becomes muddy as soon as the snow melts. At the Schatzalp, the snow was of course much thicker than in the plain (about three feet deep).

Germans seem to be the most numerous visitors of Davos; next come, in decreasing order, English, Dutch, French, and Belgians, Americans, and certainly a smaller number of Swiss than might be expected. The *table d'hôte* at the Curhaus is very lively. The ventilation of the large dining-room, where 180 find accommodation, is perfect, the foul gases escaping through openings in the ceiling; and after dinner the air is pure, not heavy, as it too often is in hotels. I heard very little coughing during the dinner; there was more of it in the coffee-rooms, where ventilation is also provided for, and seems to work well, but where also the fatal habit of smoking is indulged in. As means of recreation may be mentioned a small theatre, an orchestra playing every day, a place for skating with shelter against the north wind, a shooting-ground, etc.

A small paying hospital, the "Diaconissenhaus," has just been opened; it is intended for patients too ill to remain in the hotels. They may have there advice of their ordinary medical man, and attendance from the "diaconissen" (sisters).

Davos stands at 5,000 feet above the sea. The barometer showed, on February 27th, a pressure of 25.1 inches. I must mention the dryness of the air, and the intense heat of the sun-rays, two phenomena well known to the tourist in the high Alps. The hygrometer shows generally a very small amount of (relative) moisture, the figures being sometimes 50°, 30°; even 15° has been seen. The hands are dry, as well as the lips and nostrils. This dryness of the air explains how well the great cold of the winter is supported by the patients. The temperature was, at 8 A.M. on February 27th, 28° Fahr.; and on the 28th, 23°; but it rose to 50° at 12 (in the shade). The sun was very hot, and sitting in its rays was nearly intolerable. During the winter, with the thermometer at 14° to 10° Fahr., patients do not feel the cold when resting in well sheltered places.

From the intensity of the light, as well direct as reflected by the snow, the patients get brown tanned faces, like so many Arabs; this they call "Davoser Schminke," or "Davosian paint." Of course, many of them do not look the better for that; but, nevertheless, the exposure to such an amount of light cannot be bad for the general health.

The valley runs from the north-east to the south-west, and the winds prevailing are either the north-east or the south-west; the first brings with it fine clear weather. It is a favourable wind, as one may shelter oneself against it, and at the same time remain exposed to the sun, which is not the case when the wind comes from the south or south-west.

Among the minor points favourable to Davos, we must reckon the

scarcity of dust, due to the fact of the ground being everywhere under snow, the proximity of pine-forests, the absence of steep inclines along the road, and the pleasant width of the valley.

The last winter was not so good as it generally is; too little snow fell in October and November. Then came a number of bad days, cold or windy, without sunshine. In January, however, there was a series of fourteen clear days without any interruption.

I saw the well known "apostle" of Davos, Dr. Spengler, and his son-in-law, Dr. Peters, whose cordial reception I will not forget to mention here. They gave me much valuable information about Davos and its value as a health-resort. They seem to aim chiefly to strengthening the general system, and the heart in particular. I do not think they make systematic use of the milk-cure or of the *douche*; but the methodical walks up hill form part of the curative system. Consumptive patients benefit by their stay here if the heart be in good functional order, and if they have still a certain amount of strength. Erethic, or very weak patients, sometimes lose their sleep as soon as they are here; and, unless they regain it after the first few days of acclimatisation, they do better to leave the place altogether. Davos seems to be favourable also in the case of torpid, scrofulous, patients who want a bracing and exciting atmosphere, for non-irritable anemics, debilitated and convalescent subjects. The fear of tuberculous infection in these large sanatoria may keep away a number of such patients until special hotels have been opened for non-tuberculous persons.

I spoke with our professional brethren on the occurrence of hæmoptysis, and was told that it was by no means more frequent here than in the plain. It is a question which is, unhappily, too often answered *a priori*. In a pamphlet, *Die Landschaft Davos*, I find the following instructive data given by Dr. Spengler himself. "Out of 323 patients, 178 never had hæmoptysis, either at home or here (in Davos); 126 had hæmoptysis at home, and none here; 16 had it both there and here; 3 first got it here." These figures speak very plainly for themselves.

Davos has now got over the first stage through which every new place of cure has to pass. The number of visitors was over 1,000 last winter. There may be certain dangers in the agglomeration of so many patients in one place. The hotels are, it is true, well ventilated. But there is also the question of the expectoration; and though the hotels are well provided with spittoons, it is impossible that, in the open air, matter be not scattered in every direction. It would be certainly interesting to know whether the native population, which was free of phthisis when Dr. Spengler settled there, is still so now. It is known that in Montreux, for instance, phthisis is now more frequent among the peasantry than it used to be before that place became a favourite resort to German and Russian consumptives. But this is obviously a delicate problem to solve, as it is impossible to weigh the other factors introduced into it, such as the rise in the price of everything, overcrowding of the dwellings, intemperance, etc.

Upon the whole, I brought back a favourable impression from Davos. During fine weather, the patients have a first-rate opportunity of being the whole day in a bracing air. Otherwise, the hotel-arrangements seem to be good, warmth and ventilation well provided for. Summer-time may be spent in some other high place of the Grisons, and thus, during the whole year, the invigorating and curative influence of Alpine air is enjoyed. Patients may also remain in Davos, a custom which, as I was told, is every year becoming more popular. The melting time of the snow seems to be by no means so bad as it has been said; but immediately afterwards, in May or the beginning of June, according to the year, there is an unhealthy period, when the ground is soaked with moisture and people begin to work in the fields. Pneumonia is then frequent among the native population, a disease almost unknown during the winter-time.

Davos will certainly benefit by the opening of the Arlberg railway. An international train runs now between Calais and Vienna, bringing the traveller directly to Sargans. Thence to reach Landquart by rail takes only half an hour, so that by leaving London at 11 A.M., Davos is reached the next day at 8 P.M.; but travelling at this rate is meant only for tourists. Invalids should, I think, as a rule, remain a few days at some intermediate altitude.

DR. CHARLES E. CORMACK has settled in practice at Hyères. The other English medical men in the island, which is much resorted to in the winter months, are Mr. Griffith and Mr. W. P. Biden.

BEQUESTS AND DONATIONS. — Mrs. Willink has given £100 to Queen Charlotte's Lying-in Hospital, Marylebone Road. — Sir Andrew Barclay Walker (the President) has given £100 to the Derbyshire Children's Hospital.

SURGICAL MEMORANDA.

GUNSHOT-WOUND: SUICIDE: NECROPSY.

AN interesting gunshot-injury came under my notice lately. On May 26th last a sepoy, off sentry-duty that morning, went, after breakfast, to the naick in charge of the armoury, and asked for his rifle to clean. The naick brought the key and an oil-can, offering the sepoy the latter as he opened the door. But the sepoy remarking that he had oil enough on his cleaning-rag, the naick took the can back to his quarters. On the way, he heard a muffled discharge, and rushed back, with another man, to find the sepoy lying on his back, quite dead. He had taken down his pouch, abstracted a cartridge, loaded his rifle, and, sitting in native fashion, had pressed its muzzle against his belly, and pulled the trigger with his toe. The two men carried the body out, and I saw it twenty minutes later, as it lay at the armoury door.

On inspecting the body it was seen that the bullet had entered the middle line five inches above the navel. The wound was punched clean through the abdominal wall, of the size of a threepenny-piece, circular, its edges not inverted. The skin for an inch around was scorched and blackened, the epidermis partly detached. An inch and a half above the wound, to the right of the middle line, was a group of small burned spots; on the shirt opposite there were corresponding charred parts. Opposite the wound the shirt was torn and blackened, but not burned. No blood had flowed from the wound, and there was no oozing. The wound went directly backwards. There was no other wound or mark of injury on the body.

The body was conveyed to hospital, and a necropsy performed. On examining the abdomen, the following conditions were observed. All the contents were bathed in blood; the omentum was entire; the small intestine was perforated in seven places; opposite the wound the transverse colon was three-quarters shot through, its contents escaping into the abdominal cavity; the stomach was perforated on its upper curvature, near the pyloric end. Behind the stomach, on each side of the spine, was a space filled with blood, found, on introducing a hand, to communicate freely with the corresponding pleural cavity. Lying against the ribs could be felt pieces of hard matter, which proved, on inspection, to be fragments of bullet. The head of the pancreas was shattered; the under surface and posterior border of the liver were much lacerated. This latter viscus was completely severed from its connection with the abdominal wall behind; the gall-bladder was full and entire. The inferior cava was torn through where it comes in contact with the liver; the aorta was completely severed at the same level; the splenic vessels were torn across, the spleen itself was uninjured; the bladder was empty; the rectum and the kidneys were all uninjured. All the abdominal organs were normal in size, and showed no trace of present or previous disease. The lower lobes of both lungs were found to be shattered posteriorly. The pericardium was intact; the heart firmly contracted, quite empty, and uninjured. The diaphragm was rent from side to side. The sixth and seventh ribs on the left side were fractured at their angles. No trace of abrasion or fracture could be seen or felt along the front of the spinal column. There were old pleuritic adhesions of the right lung. The other lung was normal. The heart was small, independently of the contraction, weighing only seven ounces. The great vessels and heart were quite healthy. The brain and its membranes were quite healthy in appearance. The victim was a young soldier, aged 23, and of two years' service. No motive for the act could be adduced.

The extensive injury to organs finds its explanation in the condition of the bullet. This, an ordinary Snider bullet, had burst into thirteen pieces, including the plug; these were about equally distributed on each side of the spine. The fragments are now in my possession. But save as regards the fractured ribs, and perhaps the perforations of the small intestine, the explanation is indirect. The broken pieces could not form a wound of exit; the gases produced by the explosion of the gunpowder, forced into the body from the muzzle of the rifle having been pressed against the belly-wall, caused even greater havoc than is usual under the circumstances, when much of their force is expended in widening the wound of exit produced by the bullet.

DAVID BAIN, M.A., M.B., L.R.C.S., Indian Medical Service.

ACCIDENTS WITH DENTAL SPRING-GAGS.

MR. CRIPPS LAWRENCE draws attention in the JOURNAL to an accident by which part of a dental spring-gag was detached in the mouth of a patient during anæsthesia; and Mr. Lawrence points out that such gags should be made with the tooth-plate and movable cylinder in one piece. I would add that the surface of the gag which rests on