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ILLUSTRATED EUROPE



VALAIS AND CHAMOUNIX.

Part 5.

THE VALLEYS
OF
TURTMAN AND EIFISCH.

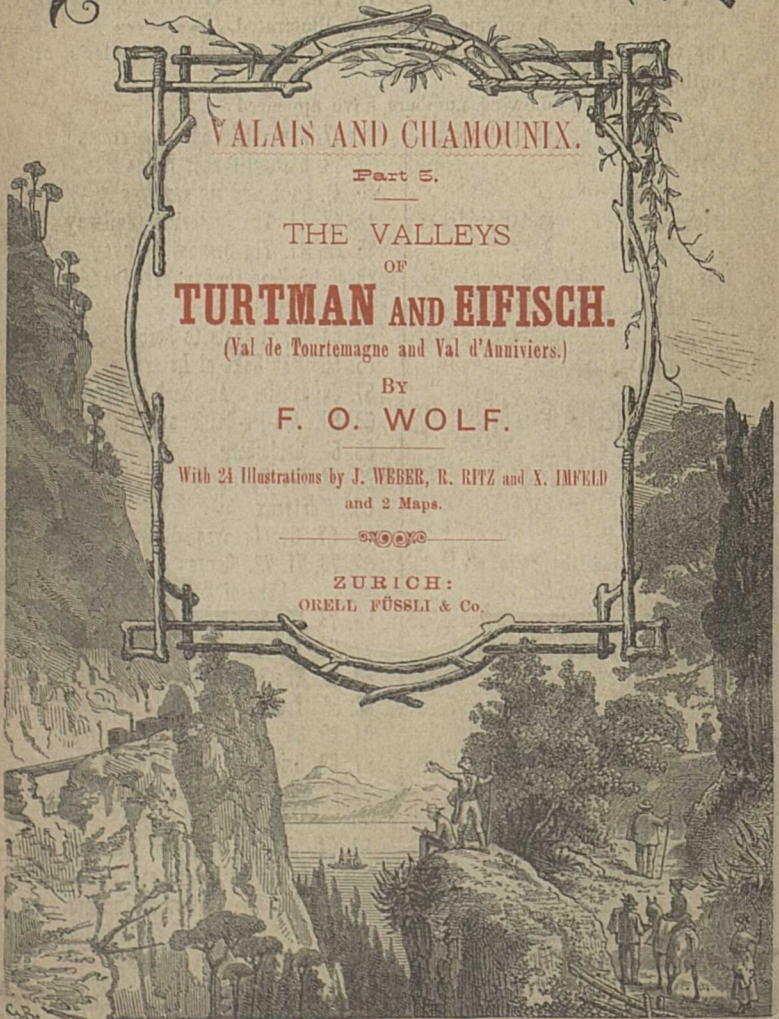
(Val de Tourtemagne and Val d'Anniviers.)

By
F. O. WOLF.

With 24 Illustrations by J. WEBER, R. RITZ and X. IMFELD
and 2 Maps.



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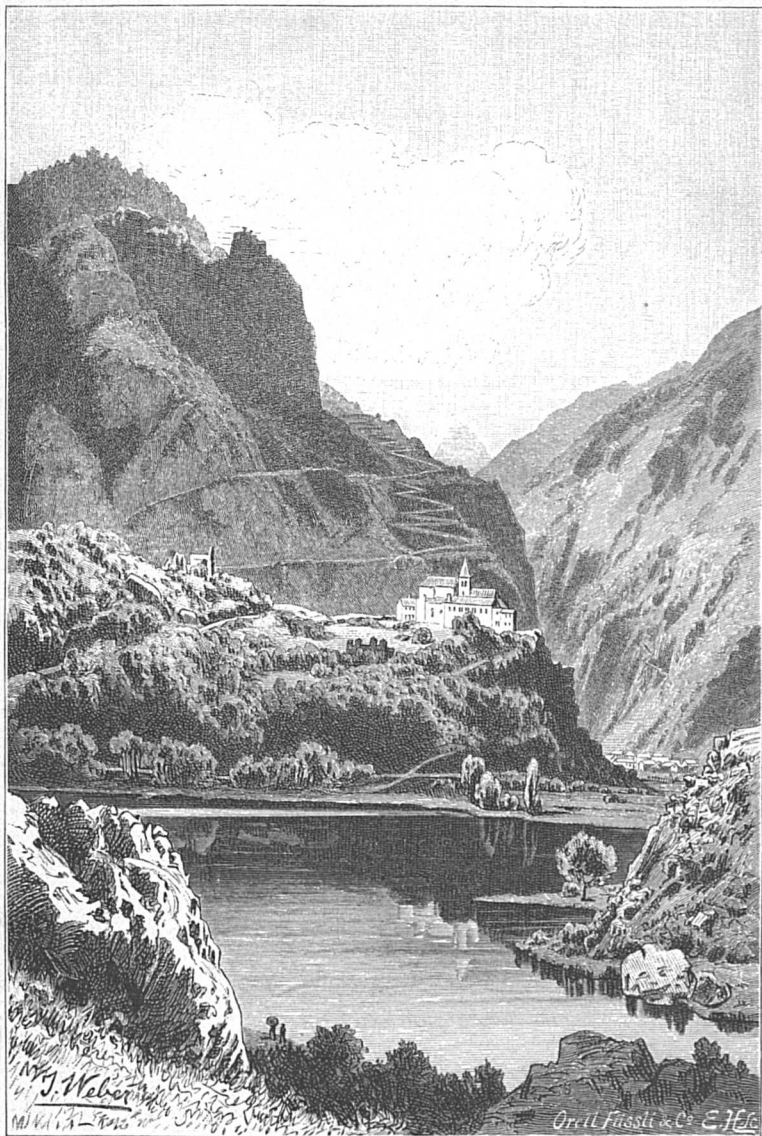
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C. A. S.



Géronde and the Route to Anniviers-Valley.

VALAIS AND CHAMOUNIX.

Part 5.

THE VALLEYS OF TURTMAN AND EIFISCH. (VAL DE TOURTEMAGNE AND VAL D'ANNIVIERS.)

BY

F. O. WOLF.

WITH 18 ILLUSTRATIONS BY J. WEBER, R. RITZ, AND X. IMFELD
AND 1 MAP.



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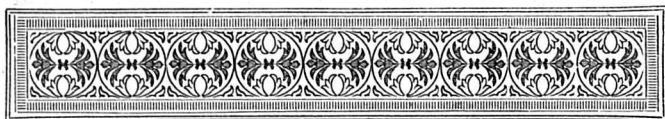
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The Valley of the Rhone from Leuk to Sierre.

IT is customary to regard Upper and Mid Valais, from Oberwald to Martigny, as consisting of one longitudinal valley running between the two stupendous chains of the Alps of Berne and Valais, and opening on to the Lake of Geneva through the cross-valley which forms, below Martigny, that part of the canton known as Lower Valais. But this view is only partially correct. The valley of the Rhone above Martigny really consists of two distinct valleys, the upper one extending from Oberwald to Brieg, the lower one from Leuk to Martigny. Below Brieg the upper valley is closed by the Gredetschhorn on the right and the Glishorn on the left bank of the Rhone, and above Leuk the base of the Torrenthorn and the precipices of the Illgraben approach very near together, so that between Brieg and Leuk the two valleys are connected only by a narrow ravine. Below Leuk the valley expands again, and is bounded on the left river bank by steep cliffs, on the right by gentle acclivities.

This broad dale between Leuk and Martigny—Mid Valais properly so called—is remarkable as being warmer than any other district on the earth's surface in the same latitude. Its temperature is reached neither by the northern arms of Lake Maggiore and the Lake of Como, nor by the valley of the Adige or Valtellina between Trient and Botzen; still less by

the more northern Bellunese, or the Karst and the districts of Laibach and Cilly; neither Fünfkirchen, Theresienstadt, and the valley of the Maros in Hungary and Siebenbürgen, nor Odessa and Astrakhan further east, nor Geneva, Macon, Vichy, Montluçon, Niort, and La Rochelle in the west are favoured with as warm a climate. And yet this part of Canton Valais lies at an elevation of from 1630 to 2260 feet above the sea, —considerably higher than most of the above-mentioned places.

In his “Geology of the Alps of Western Switzerland” Mr. B. Studer gives the following romantic description of this district:

“On the rocks of Fouilly and Sion, glowing in summer’s torrid heat, flourish the wild pomegranate, the globe-thistle, and even the American *Opuntia*; fiery wines, figs, almonds, and saffron are grown almost without cultivation; the chestnut woods are populous with cicadas, and every step we take in the parched grass startles a swarm of gaily-coloured grasshoppers and southern butterflies. Everything reminds us of the descriptions we have read of southern Italian or Sicilian landscapes; or we might even imagine ourselves transported to the sun-burnt surroundings of Lebanon or of the Nile.”

The high temperature of this little spot of earth must be due to quite special causes, chief among them being probably the shape of the valley. The precipitous and often naked rocky walls of the northern mountain-range, heated during the day by the powerful sunbeams pouring from a sky seldom obscured by clouds, are not exposed to the cold north winds, and so retain their heat. The warm air at the bottom of the valley and along the precipices continually ascends, taking with it the evaporated moisture, which condenses and falls as rain or snow in the higher regions of the mountains, while the ascending air is constantly being replaced by a cool and dry current from above. Moreover the entrance of cold currents of air into a warmer atmosphere saturated with vapour—which so often gives rise to rain showers—is hindered, as is also the

reverse; for all the winds have the same direction, and while the moist ones are deprived of their vapour in the manner described, they keep back the clouds hovering over Upper Valais. The reverse of this takes place when the *föhn* or south wind blows; and often too, on its subsiding, the sky, previously clear, becomes cloudy, and as soon as the contrary wind rises a brief but heavy shower of rain falls. Thus it happens frequently in summer that while Upper Valais is covered for days together by a dark canopy of clouds, while rain is falling in torrents on the Lake of Geneva and as far as St. Maurice or beyond, and while the wind is constantly driving clouds into the valley, the masses of vapour break and scatter on the mountains, and above us spreads a clear blue sky. So too it is with the thunderstorms so frequent among the Bernese Alps. The black clouds hang threateningly above the mountain-crests, we can see the flashes of lightning and hear the thunder, while all the time the sun is shining brightly in our valley.

Such are the climatic conditions of Mid Valais, and the result is a dry, sunny, and relatively mild climate. The mean annual temperature of Martigny is 49.94 deg. Fahr., of Sion 51.1, and of Brieg—at an elevation of 2277 feet above the sea—still as much as 47.6, while Geneva shows 49.4 and Montreux, so famous for its mild climate, but 50.7, though at an elevation of only 1263 feet above sea-level. Owing to the greater altitude, the air of Mid Valais is purer and more bracing. The autumn temperature is the same as that of Montreux, the winter somewhat colder, in March the temperature rises more rapidly, and the spring, which at Montreux is marked by “the rawness of the Cisalpine climate, although in a modified degree”*, is warmer, as is also the summer. The rainfall is very moderate, amounting at Sion to only 24 inches, while at Montreux the average is more than 42 inches. The number of cloudless days is correspondingly great, and in this respect Valais is even more favoured than Ticino, for while at Lugano

* A. Christ: *Das Pflanzenleben der Schweiz.*

there were in 1874 (for example) 139 perfectly clear days, there were in Valais 145.

The peculiar climate of Valais has given rise to a peculiar vegetation, in which very diverse elements are combined. Owing, too, to the favourable climate, the inhabitants are able to obtain rich crops from the soil. On the mountains dairying and cheese-making are carried on with great success, at the bottom of the valleys there are fertile meadows, and there, as well as on the less sunny slopes corn is grown, while in the most favourable situations, especially in Mid Valais, vines and fruit-trees thrive to perfection. But constant care is necessary to ensure the success of the crops, and the ordinary operations of husbandry need to be supplemented here in an unusual manner, owing to the drought that prevails throughout the summer. The lack of rain necessitates the artificial irrigation of the meadows and orchards, as well as of the vineyards, and sometimes even of the corn-fields. The entire canton, and especially Mid Valais, is intersected by numerous aqueducts running in all directions; and so remarkable are these structures that they have from the earliest times attracted the notice of travellers. We think it well, therefore, to subjoin a detailed account of them, derived in part from a treatise prepared in 1871 for the Agricultural Society of Sion by Mr. Blotnitzki, of the Federal engineering department.





The Irrigating Aqueducts of Valais.

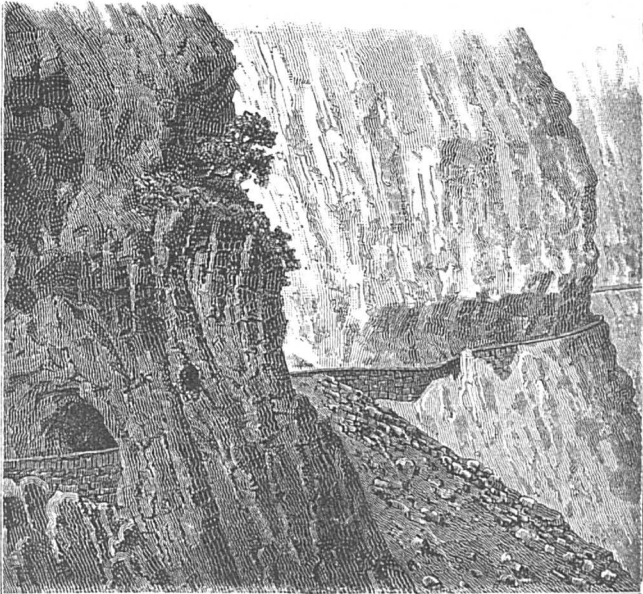
“In many places they water all their estates, conducting the water through their fields and vineyards, and they are very skilful in bringing it from the mountains in canals and conduits.”

Johann Stumpfius. 1556.

THE canton of Valais, so rich in beauties of scenery, is more often visited by catastrophes due to the forces of nature than any other Swiss canton. Earthquakes, landslips, avalanches, and especially inundations of the Rhone and its tributary torrents, have from time to time devastated the fields and houses and imperilled the lives of their owners. Only too frequently the early spring frosts prove fatal to the hopes of a bounteous harvest, and should the vegetation escape all these hostile influences, the long-continued tropical heat of the summer months threatens to parch the life out of every blade and leaf.

We have already told how the Rhone and its affluents have been embanked, the marshes drained, the hollows filled, and avalanches guarded against; we shall now devote a few pages to another of the colossal undertakings of the men of Valais, namely to their system of irrigation, which is unique in its kind, and probably more complete and carefully regulated than any existing elsewhere. As regards the quality of the soil and its fertility, the Alpine pastures of Valais are not inferior to those of other cantons; but when the population had reached a certain point it became clear that nature must

be supplemented by artificial means, if the crops necessary for the support of the inhabitants were to be obtained from the parched soil. This became the more apparent after considerable areas of forest had been converted into meadows and fields, whereby the fertilising showers became less frequent and the mountain-slopes more arid. Had the people of Valais folded their hands in idleness, there is no doubt that in time things



Bisse de Clavoz, near Sion

would have come to the same pass here, as in the Alps of Dalmatia and the mountains of Montenegro, which, formerly clothed with superb forests, are now treeless wastes, almost devoid of vegetation,—a wilderness of naked limestone rocks.

It is probable that the earliest of these aqueducts were constructed in Roman times; certain names still in use seem to point to this, as do also various remains of ancient con-

duits, evidently of remote origin. With the depopulation and devastation of the district, especially at the period of the incursions of the Saracens and Huns, the aqueducts fell into decay, and were not repaired until, under the rule of German emperors and the influence of German immigration, tranquillity was restored and prosperity began to return. Especially after the expulsion of the Saracens in the tenth century, the lateral valleys of the Rhone began to be re-inhabited, and the mountain-slopes to be again cultivated and irrigated. The oldest document, however, in which the irrigating conduits are mentioned, dates from the time of Bishop Witschard or Guiscard Tavelli (1342—87), while references thereto become more frequent under his successors Bishop Justus of Silenen and Cardinal Schinner. The two last issued some extremely wise edicts regarding the use of the aqueducts. In the days of the earliest authors who have left us an account of Valais (Münster, 1552, Stumpfius, 1556, and Simmler, 1574) aqueducts existed throughout the canton, and are described as having been long in use. Simmler writes as follows:

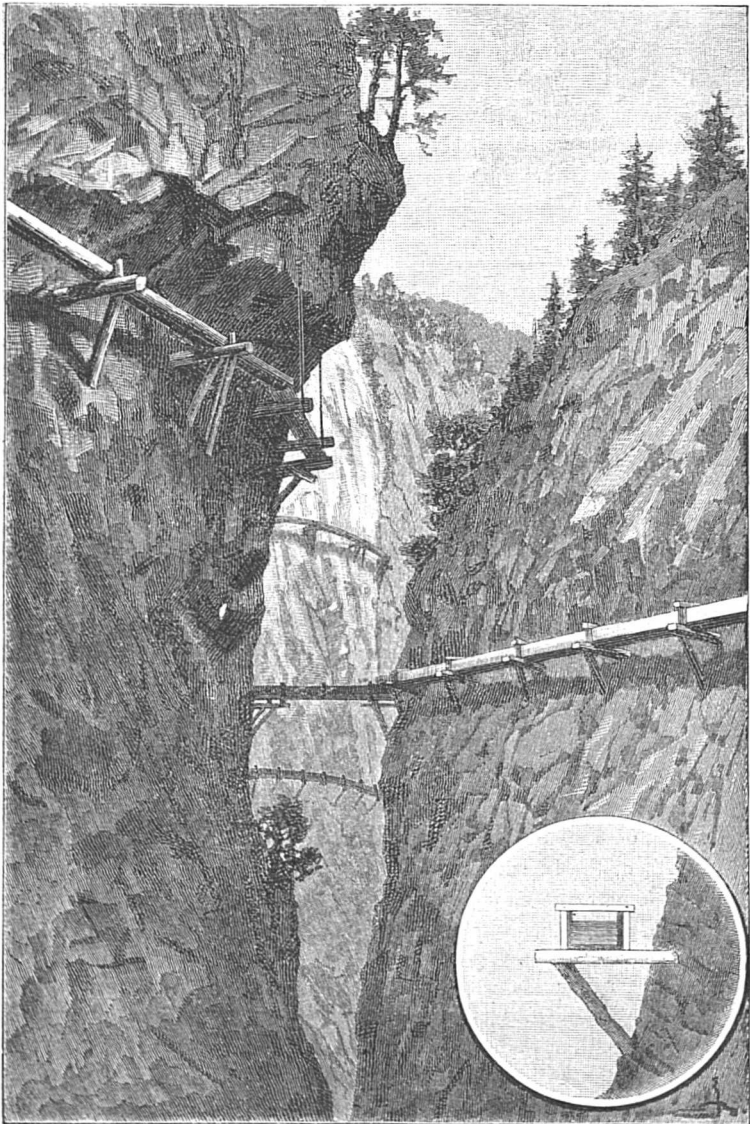
“Incolae ipsi magno labore et singulari industria omnia loca, quae modo culturam admittunt, exercere solent, multum autem operae in aquis derivandis ponunt: et enim non tantum prater et hortos, sed, quod in nostris regionibus inusitatum est, vineas quoque irrigare consueverunt. Itaque e summis montibus aquam ligneis canalibus per duo milliaria aut etiam amplius deducunt, magnis sumptibus, et aliquando etiam magno vitae periculo, quando homines funibus suspensi, nudarum rupium latera caedunt, ut ex suppositis tibicinibus et canteriis canales suspendant. Quare et si vallis arcta et exigua sit, hac tamen industria efficiunt, ut id ipsum quicquid est soli fertilitate nulli finitimarum regionum cedat.”

The construction of these aqueducts is for the most part a bold and hazardous undertaking. In many places the water employed is obtained at a height of more than 8000 feet above the sea, at the foot of the glaciers, and the conduits are often from 24 to 30 miles in length. Their construction and maintenance involve considerable expense, difficulties and hindrances of various kinds often presenting themselves, especially in the loftier regions, where the pipes have to be carried along pro-

jecting or overhanging rocks, and through glacial moraines, mounds of débris, gorges, chasms, and crevices in the rocks. It is but seldom that the water can be conducted through a trench dug in the ground. For long distances the conduits are hewn in the solid rock, or supported by means of masonry. Projecting rocks that could not be rounded have been tunneled through, some of the tunnels being 1300 feet in length.

At certain places, as above Savièse, Lens, Ayent, in the Gredetsch Ravine, &c., where the cliffs are perpendicular, the rock has been excavated, often for a distance of 4000 feet, sufficiently to afford room for the superintendent to pass by. In the case of overhanging rocks the conduits are constructed of wood and supported by brackets, or, as is now often practised, fastened by means of iron rods, one end of which is let into the rock, while the other is suspended by a wire rope. This work involves no slight risk to the person employed in it, since he must be lowered by ropes over the precipice,—the commune of Mund recently purchased a rope 4000 feet in length for this purpose! In places where stones frequently fall, or where the conduits must be carried through glacial moraines and mounds of débris, the channels are cut deep into the mountain and covered either with logs, slabs of stone, or timber galleries. The ravines and fissures of the rocks are frequently crossed by boldly constructed bridges, and occasionally we meet with arched stone bridges, having up to 70 feet span. The Clavoz aqueduct has no less than 7 bridges of masonry. In the Visp valleys the water is often conducted over the river; between Chippis and Sierre a conduit accompanies the new bridge over the Rhone, and near Approz, below Sion, another is suspended above the broad river.

The maintenance of these aqueducts is very costly, for it happens not infrequently that they are filled up or destroyed by heavy showers, to the great detriment of agriculture. It is usually necessary to clean them out every spring, and often



Ravine of Gredetsch, near Mund (Upper Valais).

this operation has to be repeated several times during the summer; in many places the wooden conduits are removed before the winter, especially where they would be liable to be destroyed by avalanches. As long as the conduits are filled with water, which is only during the period when irrigation is necessary, they are visited daily by an inspector, whose duty it is to regulate and superintend the distribution of the water.

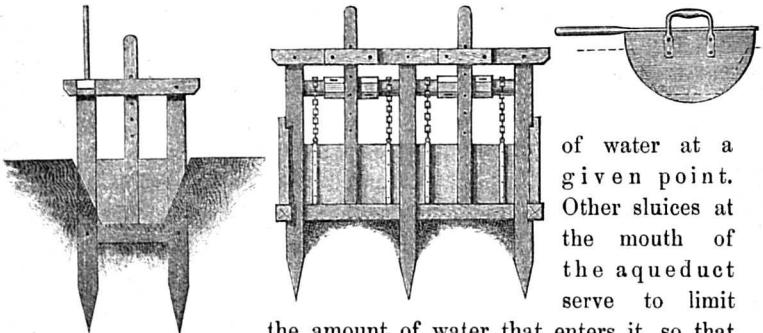
The cost of maintenance and superintendence is covered by the sale of the water. Every landowner receives a certain quantity of water during a certain period of the year, the amount being proportioned to the area of the farm, and a price is charged which varies with the expense of maintenance. The greater this is, the higher the price rises; and in some cases a certain percentage is set apart to form a fund for widening and lengthening, or for maintaining, the conduits.

The width of the conduits varies between 15 and 25 inches, according to the fall; the minimum fall is 0.50 and the maximum 2.50 in 1000. On account of the nature of the soil a greater fall than this is impracticable, and it is preferred, where necessary, to construct several conduits one above the other on the same slope, sometimes to the number of five or six. The expense of construction is thus diminished, as is also the danger of the conduits being destroyed by earth-slips. The amount of water thus employed is very great; some of the torrents, as for instance the Riedbach near Grächen, the Lonza in the Lötschenthal, the Esperenza in the Val Nendaz, the Gredetschbach, the Sionne, &c., are completely drained in summer by the aqueducts.

As a rule the mountaineers construct the conduits themselves; they display remarkable skill in this work, and possess moreover the necessary daring and courage. Some of the larger villages in the valley have employed engineers for the work, but this has considerably increased the expense.

The water of some of the conduits is collected in reservoirs before being distributed, partly in order to warm it, partly to allow of the settling of the earth and other detritus which the water carries with it, and also with the object of having a larger quantity of water at disposal during the day; for only the meadows are irrigated day and night,—in the vineyards this operation always takes place by day.

The distribution of the water, the employment of which is regulated by special rules, prescriptions, and agreements, is accomplished by means of ingeniously constructed sluices, which prevent the passage of more than the proper quantity



of water at a given point. Other sluices at the mouth of the aqueduct serve to limit the amount of water that enters it, so that it can never overflow, however plentiful the water supply may be. The irrigation is effected by means of semicircular plates of metal, furnished with two handles, one of which serves for fixing the implement in the ground, and the other for drawing it out again. In this simple manner the water can be distributed according to requirements.

The torrents flowing from granite, mica-schist, or talc-schist mountains—especially such torrents as flow from glaciers—bring down considerable alluvial matter, and therefore supply the best water for irrigating purposes. Among these we may include all the streams descending from the southern mountain-chain above Martigny (from the Dranse to the Vispe), and those rising in the Bernese Alps, from the Lonza to the

Viescherbach. In districts where there are no torrents yielding a constant supply of water, artificial reservoirs for the reception of the snow water have been constructed, as for instance above Betten, Visptermen, in the Val Ginanz, on the Meretschialp, above Lens, and above Chandolin (Eifischthal); the azure Illsee, too, is nothing more than an artificial reservoir.

The construction and maintenance of these remarkable canals is of the highest importance for the development of the agriculture of Canton Valais and for the prosperity of its inhabitants. Many districts have only in this manner been rendered cultivable. The yield both of the meadows and of the vineyards is more than doubled by this system of irrigation, and many of the meadows supplied with water rich in alluvial matter have for centuries needed no manuring.

Previous to the earthquake of 1855 the hamlet of Zeneggen, with a population of 253 souls, kept 200 head of cattle. The earthquake caused the disappearance of all the springs in the neighbourhood, and the number of cattle consequently sank to 50; but rose to 240 after the construction of an aqueduct from the Augstbordthal. The commune of Vex (population 879) constructed in 1827 the conduit known as the "Bisse de Fang", and in 1860 the great Hérémente aqueduct. After the completion of the former the number of cattle increased one-third, and after the completion of the latter it increased two-fifths, and now amounts to 830 head. The commune of Lens (nearly 4000 feet above the sea-level) possesses 1500 head of cattle, and without irrigation the dry and desiccated soil would quite fail to support the present population of 2185 souls. The commune of Savièse too, with a population equal to that of the last-named, would scarcely support 500 were it not for the system of irrigation employed. But the most striking example of the success of this system is afforded by the stretch of meadow-land known as the Champs-secs, between Sion and Brämis. It has not been ploughed up for 800 years, has so to speak never been manured, and yields nevertheless most

abundant crops. In the seventeenth century the town of Sion imposed a fine of one thaler (about three shillings) for every cart-load of manure deposited on the Champs-secs. This remarkable ordinance proves the high value already set on the alluvium of the Borgne. The fertility of this area (570 acres) is so greatly augmented through irrigation, that the meadows are estimated to yield £ 2000 worth of grass annually above what they would otherwise produce; this does not include the autumn pasturage, the increased fertility of the fruit-trees, and the saving in manure.

The aqueducts are still more important for the cultivation of the vineyards than for that of the meadows; for without the system of irrigation now in vogue, the culture of the vine could never have reached its present extent in Valais*, where slopes once quite barren or covered only with thorns and brambles are now occupied by thriving vineyards.

The total length of the aqueducts of Valais is over 5,000,000 feet, or nearly 1000 miles, and taking the average cost at the low figure of 1s. 1d. per foot we have a total of £ 270,000.

We cannot do better than conclude this chapter with the words of our esteemed friend Dr. Christ, of Basle (see his *Pflanzenleben der Schweiz*, p. 110):

“These aqueducts are the astonishment of all who visit this canton for the first time: they represent a sum of daring labour and persevering industry, such as fills us with the highest admiration of the energy of the inhabitants: not inferior in magnitude to the innumerable dams and canals of the rice-fields of Piedmont, they are far superior to these in boldness of design and execution.”

* See further particulars in No. VI. of the present Series, “Valais and Chamounix.”



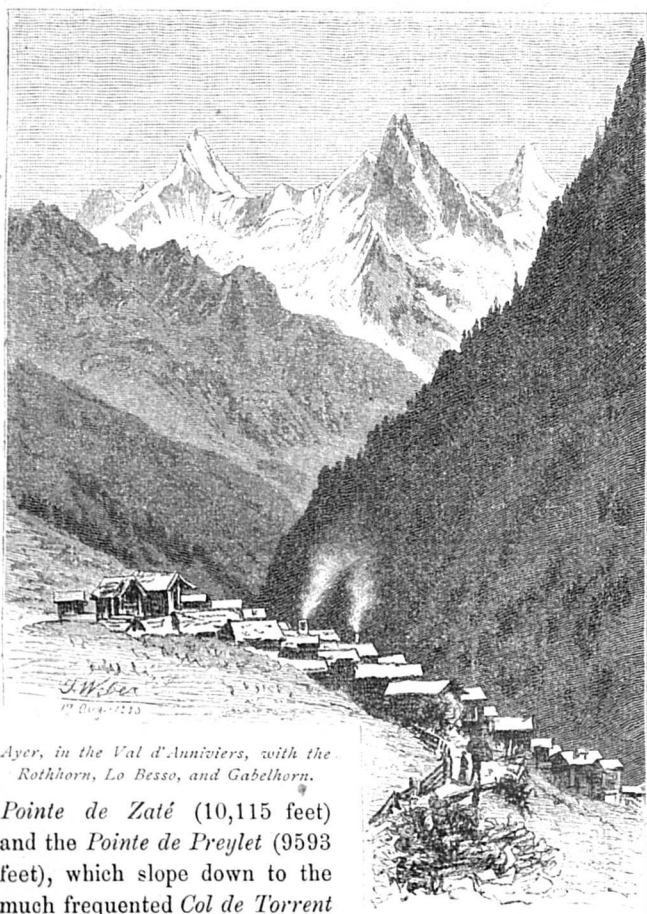


Orography of the Valleys of Turtman and Eifisch.

Literature: M. Ulrich: *Die Seitenthäler des Wallis*, 1850. H. Girard, *Geologische Wanderungen im Wallis*, 1861. J. Siegfried, *Die Berg- und Flussgebiete der Schweiz*, 1869. H. Gerlach, *Die Penninischen Alpen*, 1869 and 1883.

THE majestic *Dent Blanche*, which rises from a spacious snow-clad plateau to the stupendous height of 14,317 feet, and the *Grand Cornier* (13,021 feet) at its northern base, form the centre of the almost triangular group of lofty mountains lying between the valleys of Ering and Visp. Three huge rocky ridges diverge from it towards the north, north-west, and north-east.

Towards the **north-west** there is the elongated ridge dividing the Eringenthal from the Eifischthal; its principal peaks, from south to north, are the *Pointe de Bricolla* (12,017 feet), *Pointe de Mourti* (11,712 feet), *Za de l'Ano* (11,069 feet), and *Couronne de Bréonna* (10,380 feet); they all rise from the snow-fields of the *Glacier de Moiry*. Between the *Dent Blanche* and the *Grand Cornier* is the dangerous glacier pass called the *Col de la Dent Blanche* (11,965 feet), and the *Couronne de Bréonna* is followed by the *Col de Bréonna* (9573 feet), which is separated from the neighbouring *Col de Zaté* (9432 feet) by the serrated crest of the *Serra Neire*—the “black mountains”—a mass of huge fragments of serpentine piled one upon the other in the wildest confusion. The *Col de Zaté* is followed in a northerly direction by the



Ayer, in the Val d'Anniviers, with the Rothhorn, Lo Besso, and Gabelhorn.

Pointe de Zaté (10,115 feet) and the *Pointe de Preylet* (9593 feet), which slope down to the much frequented *Col de Torrent* (9593 feet). In the commanding *Sasseneire* the chain rises once more to an altitude of 10,692 feet, and then falls again suddenly some 1600 feet to the *Pas de Lona*. In the next in succession, the *Becs de Bosson* (10,367 feet) the chain splits into two smaller ridges, which surround the wooded *Rechythal*.

The middle chain, running due **north**, with the *Bouquetin* (11,430 feet), the *Pigno de l'Allée* (11,168 feet), the *Garde de Bordon* (10,761 feet) and the *Corne de Sorebois* (9209 feet) extends as a long ellipsoidal wedge between the upper branches of the Eifischthal, the *Val de Moiry* and the *Vallée de Zinal*. The huge *Moiry* and *Durand Glaciers*, from which descend the two most important tributaries of the *Navigence*, fill the background of the valley, and two passes, the *Col de l'Allée* (10,482 feet) and *Col de Sorebois* (8970 feet) afford communication between the two arms.

Towards the **north-east**, finally, the upper extremity of the Eifischthal is surrounded by a magnificent chain of mountains extending to the lofty pyramid of the *Weisshorn* (14,803 feet), which commands this entire group. The slender, silver-white *Pointe de Zinal* (12,434 feet), the broad, snow-covered *Mont Durand* or *Arbelhorn* (12,283 feet), the double-peaked *Gabelhorn* (13,363 and 11,828 feet), the *Triflhorn* (12,260 feet), *Rothhorn* or *Momming* (13,855 feet), and *Schallhorn* (13,048 feet) are the gems of this superb mountain-chain; they are commonly known in the district under the collective designation of the *Grande Couronne*. Three huge glaciers, the *Durand*, *Momming*, and *Weisshorn Glaciers*, descend to the valley on the north, surround the colossal *Lo Besso* (12,057 feet) and heap up their ice-masses against the *Pointe d'Arpitetta* (10,302 feet) and the *Crête de Millon* (10,551 feet). At the foot of *Lo Besso*, opposite the bleak ridge of the *Roc Noir* (10,262 feet) stands amid magnificent surroundings the *Cabane of Mountet*; thanks to its lofty and central position it facilitates the ascent of the above-mentioned peaks as well as the crossing of the *Triftjoch* (11,614 feet), between the *Triflhorn* and *Gabelhorn*, and of the *Col Durand* (11,384 feet), between *Mont Durand* and the *Pointe de Zinal*, which two extremely difficult passes connect the Eifischthal with Zermatt. Daring mountaineers

can also reach the Grosse Visperthal by way of the *Momming Pass* (12,444 feet) between the Rothhorn and Schallhorn, or over the *Schallenjoch* (12,306 feet), between the Schallhorn and Weisshorn. The *Weisshorn* (14,803 feet) also forms an important centre for the two ridges falling off towards the north, surrounding the *Turtman Glacier* and the almost uninhabited valley of the same name, and dividing the latter on



Cabane on the Mountet, with Dent Blanche, Col de la Dent Blanche, and Grand Cornier.

the west from the Val d'Anniviers or Eifischthal and on the east from the Zermatt branch of the Visperthal.

The western chain sinks from the Weisshorn through the glacier-covered *Crête de Millon* (12,132 feet) to the *Col de Tracuit* or *des Diablons* (10,669 feet), to the north of which a sharply serrated rocky ridge extends through the Diablons (11,614 and 11,850 feet) to the *Frilihorn* and the *Crête d'Omberenza*, which last forms an elongated rocky bastion cutting transversely through to the main range and varying in

elevation between 8200 and 9800 feet. Next in succession is the depression of the *Pas de Forcletta*, above which, still further northward, towers the *Roc de Budri* (10,302 feet). From here another ridge diverges through the *Pointe de Nava* (9120 feet) to the lofty pastures of the *Tétaz-Fayaz* (about 7900 feet), where the Weisshorn Hotel has recently been erected, forming the best starting-point for excursions and explorations in its district. There now follow in the main chain the *Pointe de Tounot* (9921 feet), the *Meidenhorn* (9777 feet), the *Meiden Pass* (9153 feet), and its neighbour the *Pas du Bœuf*, and lastly the twin summits of the *Bella-Tola* (9760 and 10,138 feet), frequently ascended for the sake of its famous panorama. Beyond this point the mountain-chain splits up into several small, rounded minor ridges, in the spurs of which the gorges of Meretschi and Illgraben have been excavated, opening directly into the main valley of the Rhone. Finally we may name the following elevations: *Bortershorn* (9744 feet), *Schwarzhorn* (9094 feet), *Brunhorn* (2930 feet), *Emshorn* (8612 feet), and *Illhorn* (8937 feet); the last-mentioned falls in precipices of fearful steepness into the deeply-cut, crater-like Illgraben.

It only remains to mention the chain of mountains rising to the east of the Turtmanthal and dividing it from the valley of St. Nicholas. The *Biesjoch* (11,643 feet) and the *Freiwänge* (12,086 feet) separate the Weisshorn from the *Bruneggorn* (12,628 feet), to the north of which the *Bruneggjoch* (11,099 feet) lies imbedded between the Turtman and Abberg Glaciers. Now follow the *Ausser* and *Inner Barrhorn* (12,050 and 11,801 feet), the *Gässispitzen*, the *Festihorn*, *Sparrenhorn*, *Rothhorn*, and *Furgwanghorn*, and the *Weisse Egge*, none of which much exceed 9800 feet in height. Between the two last-named lies the barren *Jungthal*, into which the *Jung Pass* leads from the Turtmanthal; and between the *Steinthorn*

(10,298 feet), *Schwarzhorn* (10,521 feet), *Dreizehnenhorn* (10,380 feet) and *Augstbordhorn* (9816 feet) stretches the *Augstbordthal*, which may be reached across the *Augstbord Pass* (9514 feet). To the north of the *Dreizehnenhorn* the range splits up and decreases in altitude in the same manner as near the *Bella-Tola*, and forms the *Ginanzthal*, which, compressed to a narrow gorge, opens into the valley of the Rhone at *Turtig*, opposite *Raron*, while its torrents water the fertile mountain-pastures of *Eyscholl* and *Unterbäch*.





Geology of the Valleys of Turtman and Eifisch, and their Mineral Wealth.

- Literature:** H. Girard, *Geologische Wanderungen im Wallis*, 1861.
H. Gerlach, *Die Bergwerke des Kantons Wallis*, 1859.
H. Gerlach, *Die Penninischen Alpen*, 1869 and 1883.
B. Studer, *Zur Geologie der Hochalpen*.
F. O. Wolf, *Beiträge zur Karte der Fundorte von Rohprodukten in der Schweiz*, 1883.

THE central group of the Dent Blanche is composed, as is well known, of talc-gneiss. The Rothhorn, Schallenhorn, Trifhorn, Lo Besso, Wellenkuppe, Gabelhorn, Mont Durand, Pointe de Zinal, Grand Cornier, Pigno de l'Allée, Pointe de Bricolla, Pointe de Mourt, Za de l'Ano, and all the passes of this stupendous group with which we are acquainted are members of this rock-formation, the outermost buttress of which is the lofty Weisshorn. The formation in question exhibits masses of gneiss of fan-shaped structure (in Lo Besso the strata are perpendicular), surrounded by a sheath of green and grey schists,—the New and Old Metamorphic and the Triassic Schists of Gerlach. The distinguishing characteristic of this mountain-group is not so much its very considerable elevation, as the steep and often perpendicular precipices by which it is bounded; from whichever side we approach it, we are suddenly confronted with vast cliffs often reaching a height of several thousand feet, as for example the western escarpment of the Triftjoch and that of the Weisshorn, measuring no less than

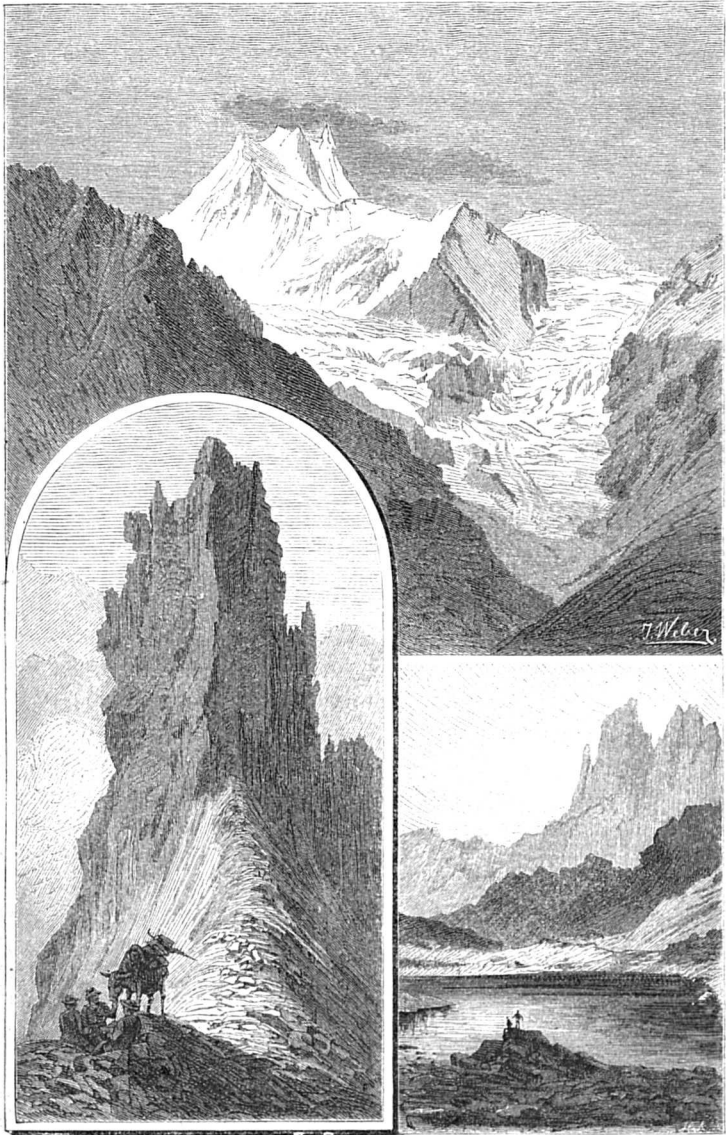
4600 feet. The entire mountain-chain from the Dent Blanche to the Weisshorn is composed almost exclusively of talc-gneiss, which never passes here into syenitic granite, as so often happens in, for instance, the valley of Arolla.

The spacious "mantle" enfolding this mass of gneiss is composed, on the other hand, of various sedimentary formations of different age and different petrographic composition. Gerlach distinguishes the following formations:

1. *Triassic Deposits* (sedimentary formations proper):
 - (a) Talc-schists, Schistes lustrés calcareo-talqueux of Lory, Graue Schiefer of Studer.
 - (b) Pontis Limestone.
 - (c) Dolomite.
 - (d) Gypsum and rauchwacke.
 - (e) Variegated schists.
 - (f) Quartzite.
2. *Anthracitic Formation*.
3. *New Metamorphic Schist Formations* (Grüne Schiefer of Studer): Chloritic, talcose, and hornblendic schists, with veins of serpentine and gabbro-nite.
4. *Old Metamorphic Schist Formations* (Casanna-Schiefer of Studer): Chloritic, talcose, and mica schists.

The *anthracitic schists* are only feebly developed, at the entrance to the Eifischthal; here is the termination of the extensive system of anthracitic schists at the northern base of the Pennine Alps, extending from Approz near Sion to this point, and containing in several places rich deposits of anthracite.

The *Talc Schists* (graue Schiefer) have been divided by Gerlach into two zones. The *north-western* zone passes through the Val de Ferret into the Val d'Entremonts, traverses Mont Chemin, and is forced over, near Riddes, to the right bank of the Rhone, which it follows as far as Leuk. This zone only reappears again in the Turtmanthal, above the waterfall, but extends from there far up through entire Upper Valais. The second, or *south-eastern* zone, forms the first great mantle-like



The Weisshorn, from the Meidenalpe.

Summit of the Meiden Pass.

Meiden-See.

sheath of the central mass of the Dent Blanche, and composes in this district the summits of the Sasseneire, Bees de Bosson, Garde de Bordon, Corne de Sorebois, Pointe de Tounot, Roc de Budry, and Frilihorn. This zone appears here, especially on the Bees de Bosson and on the Pointe de Tounot, regularly superimposed on the gypsum, and this latter on the quartzite.

Pontis-Kalk. This designation is applied by Gerlach to a series of limestones of various degrees of purity, more or less dolomitic in character, principally occurring beyond the talc-schist zone, accompanied by gypsum and rauchwacke and apparently confined to the quartzite. A large upper connected mass extends from Turtman in a westerly direction through the lower part of the Eifisch and Eringer valleys to Salin, attaining a width of half a mile to a mile and a half. On the way to the Eifischthal this formation is intersected by the *Pontis Gorges*, extending eastward; perpendicular cliffs 1000 feet in height bear witness to the magnitude of the formation. A similar but much smaller and somewhat darker mass of limestone lies to the north below the former, at the eastern entrance to the Eifischthal. This forms the steep limestone cliffs of *Beauregard*, a third of a mile in breadth, extending from Chippis to Pfyn. Similar small deposits of dolomitic limestone are also found in the quartzite at *Chandolin* and *Fang* in the Eifischthal and on the *Meidenhorn* in the Turtmanthal. The Pontis limestone seems to represent in this district the dolomite proper as it occurs on the Simplon and especially at Binn.

Gypsum. Occurs in connection with the Pontis limestone; it is especially found immediately above the latter, from *Nax* (at the entrance to the Eringerthal) eastward through *Vercorin* to *Turtman*; also in the Pontis limestone itself, as well as below the northern limestone cliffs from Chippis to Pfyn. Lastly it appears in far greater, though only local extent at the further end of the Rechythal (on *Mont Maret*) and on the broad ridge between the valleys of Eringer and Eifisch. Here it sinks southwards beneath the *Sasseneire*, and in the

east it is again seen on the *Col de Sorebois*. On Mont Maret crystals of gypseous spath are found; they contain completely enclosed quartz crystals, and according to Kenngott also calc-spar and celestine.

Rauchwacke occurs in limited amount, for the most part in connection with the gypsum deposits. On the *Pas de Lona* and at *Fang* in the Eifischthal it appears alone and seems to take the place of the gypsum.

The *Variigated Clay* and *Marl Schists*, generally occurring immediately above or beneath the deposits of gypsum, appear to be but slightly developed in this district, or to be entirely wanting.

The *Quartzite*, which on the whole always resembles a metamorphosed sandstone, but varies greatly as regards colour, stratification, and petrographic composition, sometimes forms steep cliffs and tower-like crags with vast rock-strewn slopes. It is also found in several parallel zones of larger or smaller size. Traces of it occur at *Chippis*, above the anthracite and below the Pontis-kalk. A zone of much greater dimensions lies above the great mass of Pontis-kalk, and attains its extreme breadth (nearly two miles) in the mountain-mass of the *Illhorn*. In the south, opposite the Illhorn, the third zone rises, at first forming a broad and shallow mantle on the two ridges to the east and west of the Eifischthal; it then sinks with its deposits of gypsum, rauchwacke, dolomite, and talc-schist beneath the central mountain-mass in the south, and then dwindles away in the west on the ridge between *Hérémente* and *Nendaz* and in the east on the *Frilihorn*.

New Metamorphic Schist Formations (of Gerlach), *Green Schists* (of Studer). Like the zone of talc-schist, with which it frequently alternates and which it sometimes replaces, this group of schists surrounds the central mass of the talc-gneiss of the Dent Blanche. *Chloritic, talcose, and hornblendic schists*, sometimes separate, sometimes interlaced with each other in very varied ways, form the most prominent rock, and quite characteristic of this group are the numerous veins of *serpentine*

and—though far less frequent, especially in this district—of *gabbro*. On the north and north-east sides of the Dent Blanche, with which we are here concerned, chloritic and talcose schists chiefly occur, hornblendic rocks being much less common. In the talcose schists masses of *potstone* here and there occur, and are quarried and used in the construction of stoves, as for instance on the Alpe l'Allée and near the Moiry Glacier, while in the chloritic schist, strangely enough, deposits of *metallic ore* sometimes occur, as at Zinal; they consist only of copper and iron pyrites, however. Far more interesting from a geological point of view are the very considerable *deposits of serpentine* which so frequently occur everywhere in the vicinity of the central mass of the Dent Blanche, and principally on its north side, between the Eifischthal and the Eringerthal. Here, especially on the *Col de Zaté*, they often form deeply serrated masses with vast debris-covered slopes at the foot of the steep cliffs or covering the out-crop. Here various rare minerals are frequently found, such as zoysite, magnetite, schweizerite, epidote, serpentine asbestos, amianthus, strahlstein or radiolite, &c. *Gabbro*, on the other hand, is seldom found in these valleys; it is known to occur only above the pastures of *Tracuit*, at the foot of the Diablons.

Old Metamorphic Schist Formations (of Gerlach), *Casanna Schists* (of Studer). This vast group is very different from the last-mentioned. It has indeed in common with it chloritic and talcose schists, but for the most part serpentine and hornblende are wanting, and a new variety of rock makes its appearance, namely *mica-slate*. The zone of the southern valleys of Valais is of considerable breadth (6 to 12 miles), and in it lies the middle part of these deeply cut cross-valleys, such as the Eifischthal and Turtmanthal. But here more recent formations (*Bella-Tola*, *Pointe de Tounot*, *Frilihorn*, &c.) are superimposed upon the middle arch-shaped portion. To the east of *Ayer* and on the *Augstbord Pass hornblendic schists* occur to a small extent; of more importance are the transmutation, in many places, of the mica and talcose-mica schists

into rocks of more developed crystalline structure—viz. into *gneiss*. The *deposits of ore* occurring in the Casanna Schist group are much more various and extensive than those of the Green Schists. In this respect these mountains are remarkably rich. We may mention:—

1. *Veins of argentiferous galena*, to the south of Chippis and to the north of St. Luc.

2. *Argentiferous copper-ore*, to the north and south of St. Luc.

3. *Copper pyrites* and *non-argentiferous bismuthal copper ore*, near Bourrimont, Biolec, and Beccollo.

4. *Copper pyrites*, on Schöneck to the east of Ayer, and at Maret, west of Grimenz.

5. *Nickel* and *cobalt*, east and south of Ayer, and on the Kaltenberge, in the Turtmanthal.

6. *Arsenical pyrites*, *arseniuret of nickel*, and *native bismuth*, to the north of St. Luc and near Painsec.

All these mines were partly worked at the end of the last century, and especially between 1850 and 1860 they were worked with much success. Since the latter date they have been completely abandoned, partly on account of a deficiency of ore, partly owing to the expense of working.

The accompanying section of the mountain-chain branching off to the north of the Weisshorn and dividing the Eifischthal from the Turtmanthal is the work of Mr. H. Gerlach, to whom we owe the geological map of the Pennine Alps, and who was formerly the technical manager of the mines in the Eifischthal. This diagram gives the best idea of the geological structure of this district, which is so extremely interesting from the miner's point of view.

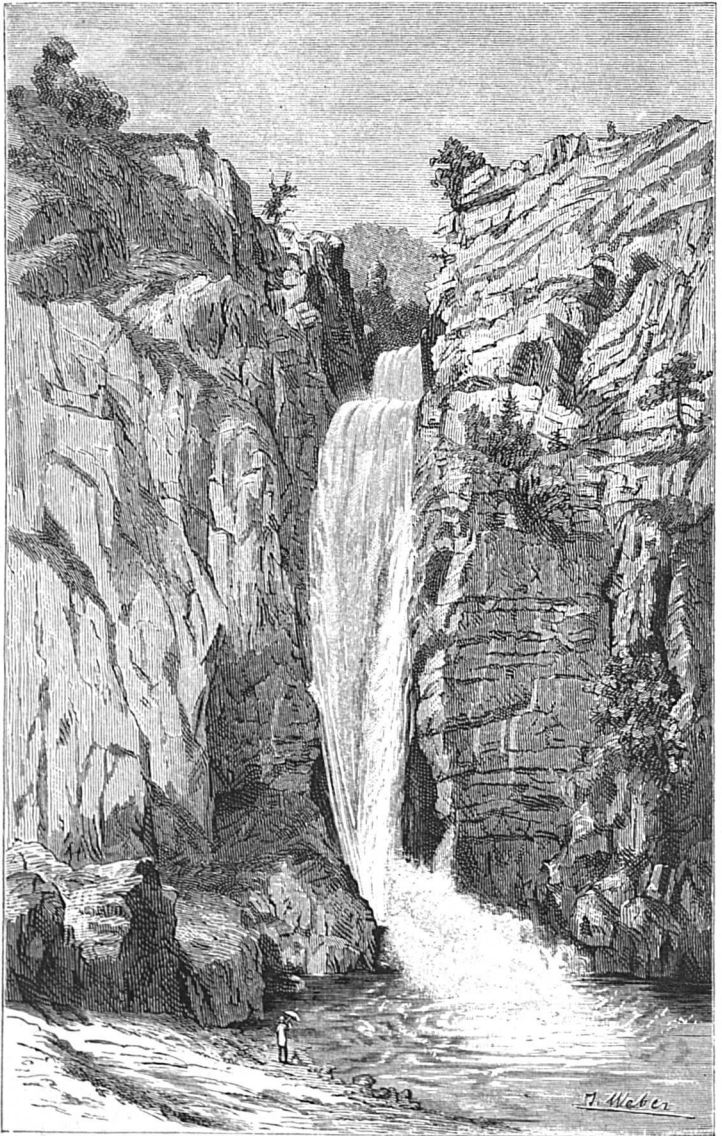




The Turtmanthal.

“In its form the Turtmanthal is by no means intricate. Towards the main valley of the Rhone it opens near the village of Turtman in a wooded ravine. The stream flowing through it has not cut deep into the rocks, but forms a beautiful waterfall 80 feet in height. Beyond the wooded ravine there opens a narrow Alpine valley about 12 miles in length, at the further end of which is the Turtman Glacier, with the Weisshorn above it. The valley is inhabited only during the summer, by herdsmen who pasture their cattle here. There are various paths leading into the lateral valleys; the main pass from the valley of St. Nikolaus is the Jung Pass, leading from the village of St. Nikolaus past the Schwarzhorn. Towards the west there are several paths leading into the Eifischthal.” Melchior Ulrich, “*Die Seitenthäler der Schweiz*,” 1850.

TURTMAN (*Fr.* Tourtemagne), a pretty little village of 520 inhabitants, is concealed in a perfect forest of orchard-trees; it has a handsome new parish church (paintings by R. Ritz and Deschwanden) and an excellent inn kept by Messrs. In-Albon. Formerly the village was the scene of much activity during certain hours of the day, for here the Simplon diligence changed horses; but now all traffic has ceased. Only during the summer months a few tourists leave the railway carriages of the Ligne d'Italie to pay a visit to the cascade of the



The Tourtemagne-Cascade.

Turtmanbach or to the Turtmanthal. In Tschudi's "*Tourist*" we read:

"This beautiful valley, with its Alpine pastures, is quite neglected by tourists, though it affords numerous magnificent points of view and is extremely well deserving of a visit."

The superb waterfall, only ten minutes' walk from the village, gives us an intimation of the beauties of the Turtmanthal. The cascade is situated in a barren ravine; a considerable body of water dashes in a single broad fall over the lofty and barren cliff, making the air resound with its noise and sending up a cloud of beautiful spray.

The path into the Turtmanthal leads us up to the right of the cascade, at first over steep, parched slopes, destitute of vegetation, until we come to some groups of houses known as Unter-Ems, where we rest a moment to enjoy the magnificent prospect of the Rhone valley. The path now runs, at some height above the glacier stream, between meadows and fruit-trees towards the châteaux of Tummenen. On the opposite side of the valley a verdant and well wooded glen opens, with the little village of Ergisch lying half hidden at its further end. A picturesque path leads to it, and still further to Eyscholl and Unterbäch, and over the mountains to St. Nikolaus. But for our part we cross the brook just beyond Tummenen and then ascend a steep path through a small grove of beeches and alders, between huge masses of rock. We are now standing at the entrance to the *Taubenwald*.

Far in the depths beneath us the torrent is forcing its way through the precipitous sides of a narrow gorge, a look into which makes one shudder. Wherever a crevice or a narrow belt of turf affords a foothold, a fir or a beech has taken root. The wildness of the scene inspires us with awe, or even with a feeling akin to terror. Tall trees, with roots still clinging to the lofty crags, hang with their tops dipped in the boiling foam, or, having found a support on the opposite bank, form a spray-swept bridge over the abyss. Shattered fir-trunks,

defying the force of the raging waters, lie jammed between the boulders, their long black roots often rising spectre-like above the white foam. But where the obstacles in its course are many, the impetuous torrent seems to gain strength

from resistance, and dashes over them in one mighty bound.

After contemplating this tumultuous scene, it is refreshing to enter once more the tranquil forest-shade and saunter along at the foot of the century-old fir-trees, on a soft carpet of moss over which trails the delicate *Linnæa borealis*. So numerous are the blossoms of this beautiful little plant that we can at times almost fancy that the ground we are walking on is covered with freshly fallen rose-coloured snow.



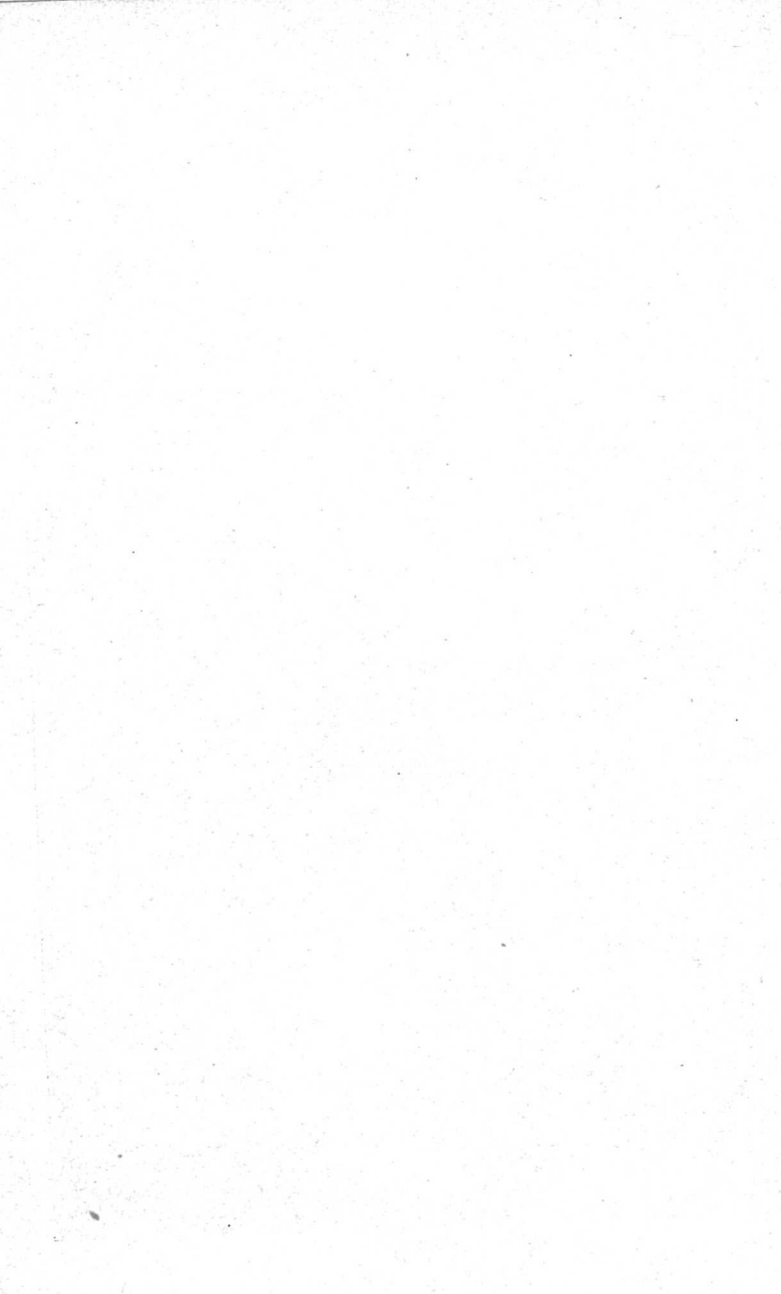
Chapel in the Taubenwald.

In the midst of this forest, which is six miles in length, a little chapel much resorted to by pilgrims stands by the way-side.

“The chapel is reported to owe its origin to a remarkable occurrence. One winter a large block of limestone fell from the mountain above, and



Beggars, returning from the Alps.



lodged midway in the Turtmäna, the brook that drains the valley. In the spring the herdsmen saw the stone, and said to one another while they were eating their supper: ‘Tis a pity that the stone lies in the water; if it were on the land we could use it to build a chapel.’ And lo, in the following night the stream changed its course, and left the stone lying high and dry. The herdsmen saw the hand of Providence in this occurrence, and set to work forthwith to build a chapel. The altar bears the date 1708.”

(Ruppen and Tscheinen’s “*Legends.*”)

Many a pilgrim has here found relief from his bodily ailments, or comfort in mental affliction,—witness the numerous votive offerings adorning the walls.

“While resting here,” so the artist who has furnished our illustrations related to us, “we were suddenly disturbed by merry shouts and by the footsteps of an approaching throng. A band of mendicants of every age and in every variety of costume, one and all in the gayest humour, turned the corner of the forest path. We anticipated a general assault upon our purse, and great was our surprise when they all passed peaceably by, with a respectful greeting, and with a highly satisfied expression of face. We questioned one rosy-cheeked youngster, and learned from him that to-day was “dole-day” on the Blummatt-Alpe. Many years ago, it seems, a deadly sickness fastened upon the cattle there, and the herdsmen in their distress made a vow to distribute year by year on a certain day a quantity of cheese, and milk, and whey among the poor, if the plague were removed. Their prayer was heard, the cattle regained health, and the honest herdsmen still keep up the old custom. The urchin showed me the bountiful share he had received, and hastened to rejoin his companions.”

From here it is another hour’s walk to the end of the wooded ravine. The path leads once more past the Turtmanbach, whose tumult drowns our voices and almost deafens us. On the margin of the forest we pluck the first alpenroses, and decking our hats with a bunch of the fragrant blossoms we step light of heart into the lovely Alpine valley. Surrounded by lofty pastures, the gradually ascending valley still

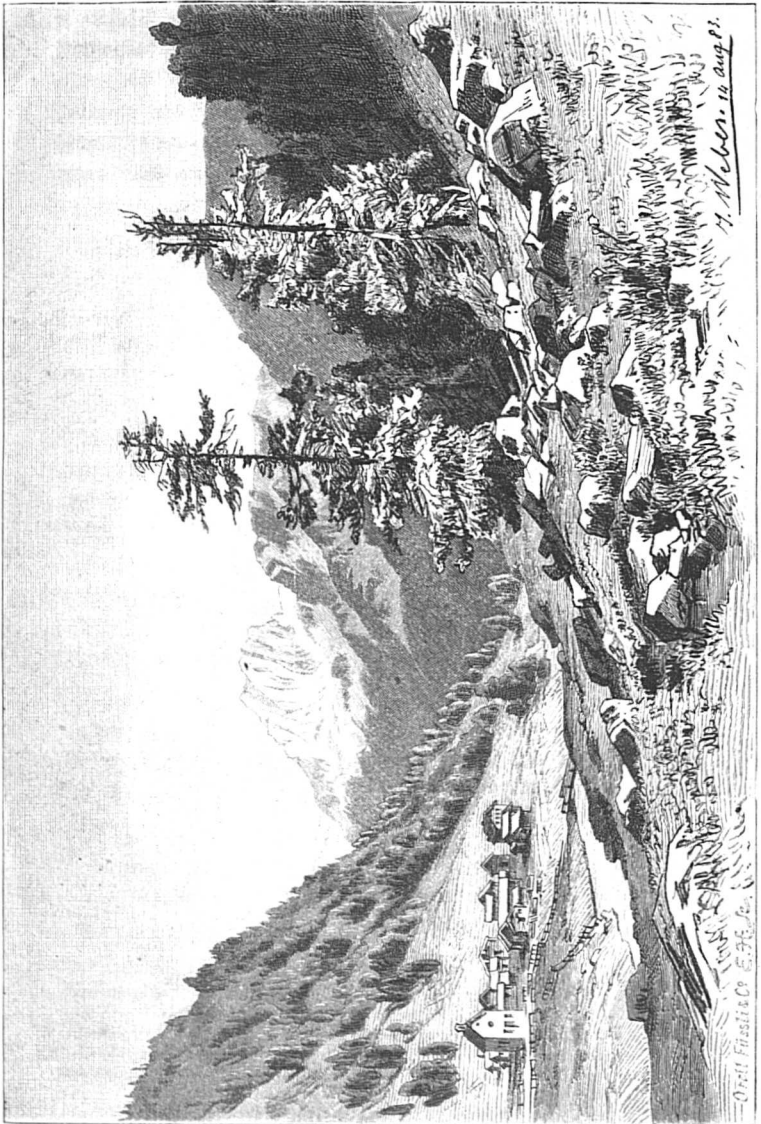
stretches six miles further south; groups of brown timber cottages lie scattered on the banks of the glacier torrent, which now flows smoothly onwards. First we pass Niggelingen, then Staffel, and at last after 1½ hours' walk we reach Gruben (or Meiden) and take up our quarters at the hotel, which has been in sight for some time.

Gruben.

(6059 feet above the sea.)

The chalets of Gruben stand on the right bank of the rivulet, in the midst of grassy meadows interspersed with groups of cembra-pines and larches, at the foot of which the beautiful alpenrose flourishes. The bracing Alpine air of Gruben, and its quiet and secluded situation, render it a most desirable summer resort for nervous and debilitated persons; and for tourists the excellently conducted *Weisshorn Hotel* affords many advantages, forming as it does a capital starting-point for numerous interesting excursions.

In the immediate vicinity the visitor will discover plenty of charming walks,—up to the *Meidenalp* and to the *Kaltenberg*, or up the valley of the *Blummatt*, and to the chalets of *Vorsass* and *Im Zehnten*. Everywhere we find an abundance of Alpine flowers, everywhere streamlets of crystal water flow down the grassy, flowery slopes, and rocks overshadowed by ancient pines invite us to rest; and in every hut the tired wanderer can obtain a draught of refreshing milk and other Alpine delicacies. But the favourite walk is that which leads in an hour and a half to the foot of the *Turtman Glacier*. Before reaching it we have to ascend a hill, near the *Im Zehnten* chalets, which forms a barrier across the valley and through which the Turtmanbach has forced its way. The torrent falls in several cascades through the narrow gorge, which is not unlike that of Vernayaz. On top, somewhat on one side, in the neighbourhood of the *Pipi* chalets, we are suddenly



Orrell Fissler & Co. S. F. S. Co.

H. Meier. 14 Aug. 81.

Gruben in the Turtmanthal.

afforded a view of the upper end of the valley. The spacious snowfields extending on either side of the northern escarpment of the Weisshorn ridge are visible, commanded on the east by the Barrhörner and Brunegghorn, on the west by the Diablons. Two enormous glaciers, descending from these snowfields, unite beneath the precipices of the Weisshorn, and cover the site of what were formerly the finest pastures in the valley, those of the *Blümlisalpe*.

"Here," according to the "Legends of Valais," which we have so often quoted from, "a herdsman once led a sinful life with a girl named Katharine. Her poor old blind father was shamefully treated by the godless pair. One night when a fearful thunderstorm was raging, the herdsman ordered the old man to drive the cattle in from the pastures. He obeyed; but without intending it he walked further and further from the Blümlisalpe, the entire herd following him. Then all at once immense masses of ice thundered down upon the pastures, burying together with them the wicked herdsman, Katharine, and their little black dog. And still, when the torrent is swollen by the melting snows, the little black dog may be seen running to and fro along the bank, and from the icy hollows of the glacier a voice is heard crying:

'Ich und min Kathrin

Müssen immer und ewig auf der Blümlisalp syn!

'I and my Katharine must for ever and aye on the Blümlisalp be!'"

Somewhat longer, but probably the most enjoyable excursion in the Turtmanthal, and one of the most famous in the Alps, is the ascent of the

Schwarzhorn.

(10,521 feet.)

(The summit can be reached in 3½ to 4 hours, so that by starting at day-break the tourist can be back at Gruben at noon. Many prefer, however, to take provisions along with them and spend the whole day on the glorious mountains. Mr. G. Studer, the most experienced of Swiss amateur mountaineers, has published a *Panorama from the Schwarzhorn* in the sixth volume of the "Jahrbuch des S. A. C." The following is an extract from his description, which is as clear and instructive as his delineation of the forms of the mountains is exact.)

The Schwarzhorn rises from the stupendous mountain-chain separating the Turtmanthal from the Nicolaithal; although one of the lower peaks, it yet exceeds the limit of perpetual snow.

Its pyramidal summit is composed of vast rocky fragments piled one upon another, and the slopes immediately below are covered with spacious snowfields. The Schwarzhorn commands all the northern peaks of the same chain as far as its termination in the valley of the Rhone, and although not one of the loftiest mountains of the Alps, it deserves to be frequently ascended for the sake of its prospect. The ascent from Gruben is not difficult, especially since the path over the *Augstbord Pass*, between Turtman and St. Nikolaus, leading close to its southern base, has been improved and even rendered passable on horseback.

The summit of this pass may be reached from Gruben in $2\frac{1}{2}$ to 3 hours, while from St. Nikolaus (through Jüngen) it requires 4 to 5 hours. The Augstbord Pass may also be reached from Stalden by way of Emd and the Emderalpen.

The height of the Augstbord Pass is 9514 feet; in order, therefore, to reach the summit of the Schwarzhorn there remain 1007 feet to be climbed, and the distance may be accomplished by the path in one hour.

The space on the summit is limited, but a group of several persons can find room on the blocks of stone composing it.

The tourist is rewarded for the labour of the ascent by a really wonderful view, which must be classed with the finest of its kind. The most distant points visible are in the south-west Mont Blanc with its *aiguilles*, and in the north-east the Tödi with its satellites. The distance between these two groups of mountains, which stand almost opposite each other, is not less than 120 miles, while the diameter of the visible horizon is probably not more than 36 miles. The section to the north of a line drawn between the two points named above, Mont Blanc and Tödi, has for its boundaries: in the

west the Alps of Savoy, extending from Mont Blanc to the Dent du Midi; and in the north the immense chain of the Bernese Alps, here visible without a break from the Dent de Morcles to the Galenstock. Within this vast belt of mountains, whose summits stand out against the horizon in a thousand different forms, we see in the *west* the peaks rising from the valleys of Bagnes, Hérémece, Ering, and Eifisch, and, in its full extent, the snowy range separating the Turtmanthal from the Eifischthal. Very striking is the pointed summit of the Becs de Bosson, near the Lona Pass, cutting exactly midway through the profile of the Buet. On the north, in immediate proximity to the spectator, spreads the barren ridge (surrounded by extensive pastures) which branches off from the Schwarzhorn through the Dreizehnenhorn towards the Erggischhörner and the Augstbordhorn. But so commanding is our standpoint that it affords a view, over this huge barrier, of the valley of the Rhone and the village of Raron.

Turning now to the *southern* half of the panorama, and beginning at the Furka in the extreme east, we see on the horizon in gradually ascending succession the Mutthörner, the Binnhorn, the mountains of the Binnenthal, somewhat nearer Monte Leone, and then in ever vaster and more imposing outlines the assemblage of peaks forming the centre of the Pennine Alps: the Fletschhörner and the Weissmies, whose snowy summits overtop the lofty Grächengrat—the Balfrin with its dazzling white cupola, Ulrichshorn, and the Nadelgrat, all grouped round the basin through which the Ried Glacier descends in a series of terraces towards the valley—further the giant peaks of the Mischabel, more in the background the proud forms of the Monte-Rosa chain, from the Nordende to the west end of the Breithorn, at the foot of which the snow-covered ridge of the Weissgrat is visible, and lastly the Weisshorn, which, flanked on the east by the slender summit of the Brunegghorn and uniting with it to form one superb group, stand before us in peerless beauty. Its form is that of a sharp-pointed pyramid, the side of which turned

towards the spectator is almost perpendicular and is covered with a mantle of glittering snow. The snow-capped peaks lying between the Weisshorn and our standpoint, crowning the connecting ridge, form as it were the graduated pedestal from which that magnificent pyramid rises.

Into the depths of the Visperthal the eye cannot penetrate; the projecting terraces of the Augstbordthal, surrounding the eastern base of the Schwarzhorn, and the lofty elongated ridge of the Steinthalhorn closing the last-named valley towards the south, intercept the view. Similar obstacles prevent us from seeing the bottom of the Turtmanthal, although we can follow with our eyes the opposite side of the valley almost to its base. On the other hand we have still to mention several peaks of the Pennine Chain rising on the south-western horizon. Between the Weisshorn and the lofty ridge of the Diablons towers the sharply cut profile of the Dent Blanche, with the Grand Cornier next to it. On the right of the Diablons the Combin group appears, and between the Combin de Corbassière and the broad summit of Mont Blanc we recognise the group of the Aiguilles Rouges with the Pointe de Vouasson, whose white cupola serves as a foil to the dark rocky peak of the Grande Jorasse, rising immediately behind it.

Higher Ascents and Passes.

Compare: J. J. Weilenmann, *Aus der Firnenwelt.*
J. von Tschudi, *Tourist in Switzerland.*
G. Studer, *Ueber Eis und Schnee.*

Attempts have frequently been made to scale the proud battlements of the Weisshorn from the valleys of Turtman and Eifisch, but hitherto without success. Yet these unsuccessful attempts have led to the discovery of various lofty passes, and to the ascent of the **Brunegghorn** (12,628 feet), which spreads its silvery mantle of snow at the feet of its lordly neighbour.

The first ascent was made on September 19, 1865, by Messrs. Cobb, Rawlins, and Townsend. From Randa on the north side of the Bies Glacier they climbed to the Biesjoch, and thence in one hour to the summit over a frozen snow-covered slope. They descended to Gruben, over the Turtman Glacier. The ascent of the Brunegghorn from Gruben may thus be combined with the passage of the Biesjoch.

The **Biesjoch** (11,791 feet) lies between the Brunegghorn and the northernmost projection of the Weisshorn. From the châteaux of Im Zehnten, distant one and a half hours' walk from Gruben, we make our way to the Turtman Glacier, the lower part of which we cross. Then for 2½ hours the way leads up steep rocks and again on to the glacier; in four hours more we reach the summit of the pass, where a superb prospect opens before us. The descent across the Bies Glacier to Breitenmatt (and Randa) is very steep, and requires about 5 hours, so that the entire excursion occupies from 13 to 15 hours.

The **Bruneggjoch** (11,099 feet), to the north of the Brunegghorn, requires about the same time and is just as dif-

difficult as the Biesjoch, to which it is also not inferior in interest; the descent from the summit of the pass to Randa is by way of the Abberg Glacier. It is supposed that both these glacier passes were known formerly to the hunters of St. Nikolaus, and that they were even used by the dwellers in the two valleys. Some tourists combine the passage of one or other of these passes with that of the *Col de Tracuit*, and thus reach the valley of St. Nikolaus direct from the Eifischthal.

There is another pass leading into the Nicolaithal between the Barrhörner,—the *Barrjoch* (11,801 feet), celebrated for its splendid prospect, but said to be rather difficult. From the summit of the pass the way leads over the Adlerberg and the Stelli Glacier down to the Walkersmatt-Alpe, and thence to St. Nikolaus.

There follow to the north the **Gässijoch** (Rothgrat Pass) and **Stellijoch**; they are similar to the above-mentioned passes, and are but very seldom crossed.

The Jung Pass and the Augstbord Pass on the other hand are crossed much more often than the above, by tourists and others making their way from the Turtmanthal to the Grosse Visperthal.

The **Jung Pass** (about 9800 feet) lies at the southern base of the Furwanghorn (10,439 feet). Ascending from Gruben across the *Hungerle* pastures, the summit of the pass is reached in about 4 hours; then over detritus and shattered rocks down to the barren Jungthal, past the beautifully situated châteaux of Jungen to the chapel, and from here by a good footpath to St. Nikolaus in 4 to 5 hours more.

The **Augstbord Pass** (9514 feet), the ascent to which we are already acquainted with, is somewhat longer, but much more convenient; almost the entire distance may be made on horseback if desired. From the summit of the pass various points can be reached: down through the Augstbordthal to Emdt and Stalden, or, avoiding the Steinthal, towards Jungen and down by the Jung Pass route to St. Nikolaus. On one of his botanical excursions, in 1872, the author succeeded in

making the passage between the Weisse Egge and the Steintalhorn; probably this is the shortest way from Gruben to St. Nikolaus, and for botanists it is extremely interesting.

Lastly there is the **Turtmanthal Pass** to be mentioned, leading in the rear of the Dreizehnenhorn over to the Ginanzthal.

Before continuing our wanderings to the other side of the mountains, to the frontier-line between German-speaking Upper Valais and the French-speaking portion of the canton, we will present the reader with a few more specimens of the legendary lore of the Teutonic tribe that peopled the highlands of Valais:

“In the gorge of Augstbord, about at the height at which trees cease to grow, there issues from a rock the famous spring known as the Goldbrunnen, often mentioned both by ancient and modern writers, and which was probably known in very remote times, when this pass was often crossed. It appears that the counts or seigniors of Visp had closed the mouth of the valley of that name, so that the people of the ‘Gasenthal’ (St. Nikolaus near Zermatt) were able to communicate with their feudal masters in Raron and Leuk only by means of this pass. This may have given rise to the proverb regarding the way to the Törbel, leading to this ancient mountain-pass or through the Moosalpe to the district of Raron; one often hears said of persons or things, that they are ‘as old as the way to the Törbel’.

“There are numerous legends in connection with the lofty pastures of Augstbord. Once upon a time the herdsmen were sitting quietly together in their hut; suddenly all the wooden milk-pails, which had been placed on the roof of the hut to dry, began to move, and rolled with a great clatter over the roof and down the Staffel. But when the men jumped up to collect the pails and bring them home again, they found that they were all in apple-pie order on the roof, none missing.

“On another occasion the cattle were disturbed in the night, and driven in all directions; the cows lowed loudly, and stamped the ground with their hoofs, while all their bells began to tinkle. But when the herdsmen hastened up to calm the frightened animals, they found the entire herd sleeping quietly.

“Near the conduit supplying water to Törbel and Zeneggen an old woman once found her pig in a very pitiable plight, grunting with pain; one of its eyes was torn out, and hanging by a shred of flesh from its cheek. The woman led poor piggy home again, but no sooner was it in its sty than all its wounds vanished.

“One summer two young girls were employed in minding the cattle on the Augstbordalpe. In the evening, after their work was done, they were often visited by a strange woman, who chatted pleasantly with them. One evening their new acquaintance invited them to accompany her to a merry-making at Jungen. They agreed. The way led up across a slope thickly overgrown with bushes. The old woman wanted the girls to go on in front, but as they did not know the way they persistently refused, so that at length their new friend was obliged to yield and to lead the way up the slope. Then the girls noticed with horror that the woman's left foot was like that of a cock, and not a human foot. Struck with terror, they fell to saying an ‘Ave Maria’, when suddenly their guide vanished. Day began to break, and to their astonishment they found that they had been led high up into the mountains, so that it was evening before they reached their hut again, almost worn out with fatigue.”

(From Ruppen's “*Walliser Sagen*”).

On the west side of the Turtmanthal are the following passes leading into the Eifischthal:

Pas de Bœuf (9150 feet). From Gruben up the valley to the châteaux of Pletschen, then through the Borderthal up to the summit of the pass, or to the summit of the *Bella-Tola*, famed for its panorama. Thence by a path to St. Luc and Vissoye or to the Weisshorn Hotel at Têtaz-Fayaz (altogether 6 to 8 hours).

The **Meiden Passes**. The two Meiden Passes lead up over the flowery and beautifully situated pastures of the same name. From there one leads past the north side of the steep Tounot, through woods, then up steep grassy slopes, and finally over débris to the summit of the pass (about 9000 feet). Thence down past a small lake to the châteaux of Tounot, and then either direct to Têtaz-Fayaz or over the Combaz Verte down to St. Luc and Vissoye. The other Meiden Pass (9150 feet) lies somewhat more to the north, and leads to the same place.

Pas de la Forcletta* (9810 feet). From Gruben through the forest to the upper Blummatt, the upper châteaux of Kaltenberg, and without difficulty to the summit of the pass

* Most of the names of localities in the Eifisch and Eringer valleys, etc., ending in *a*, may also be written with *az*.

between the Roc de Budry and the Crête d'Ombrenza. A wonderful view east and west. The descent across steep débris-strewn slopes to the châteaux of Remoinze is fatiguing, but from there a good path, constantly commanding a charming view of the further extremity of the valley, leads across the pastures of Barneusa and Lirec to Zinal. From Alpe Remoinze Ayer and Vissoye may also be reached by a way leading down the valley.

Col de Tracuit (also known as *Col des Diablons*) has an altitude of 10,669 feet, and lies between the Crête de Millon and the Diablons. Mr. Weilenmann, of St. Gall, was the first tourist to cross this old hunters' pass, and moreover he accomplished the feat quite alone and without a guide (August 20, 1859). In his book "*Aus der Firnenwelt*" he has given a description of the tour. At that time there was no hotel in the Turtmanthal, so Mr. Weilenmann secured a night's lodging in a lonely chalet about an hour's walk from the pastures of Im Zehnten. He climbed up the steep sides of the Diablons as far as the Upper Turtman Glacier, and ascended from there over undulating snow-fields to the summit of the pass.

"A mountain-cirque of rare grandeur and wildness, such as could scarcely be found elsewhere in the Alps, was unfolded to view. The gigantic peaks composing it tower proudly aloft, and pierce the blue ether. Beginning with the Diablons and the Weisshorn, with the adjacent Rothhorn, the amphitheatre attains its greatest depth at the Gabelhorn and Dent Blanche, and, curving northward, terminates with the Grand Cornier and the Pigne de l'Allée. In the midst of the ring of summits rises the dark, serrated Besso, connected by a snowy ridge with the Rothhorn, and dividing the cirque into two almost equal glacier basins, the more westerly of which it in part hides. It is difficult to recognise in Lo Besso the mountain which presents so imposing and threatening an appearance when seen from the meadows of Zinal, so dwarfed is it by the stupendous peaks encircling it. From its snow-

covered sides mighty glaciers descend to the valley, burying its upper end in an eternal winter. The most dazzling feature of the picture, and that on which the eye lingers in admiration, is the immense ridge rising immediately in front of the spectator and culminating in the Weisshorn and Rothhorn, at the foot of which glimmer the ice-terraces of the Weisshorn and Momming Glaciers. A light veil of vapour surrounds the sky-cleaving crags of the Weisshorn, and lessens in some degree the violent contrast between the dark rocks and the dazzling snow."

The descent on the other side, past the *châlet* of Composana and over the *Alpe Tracuit* to Zinal, is very easy, and occupies only about 4 hours, while at least 5 or 6 hours are required in reaching the summit of the pass from Gruben.





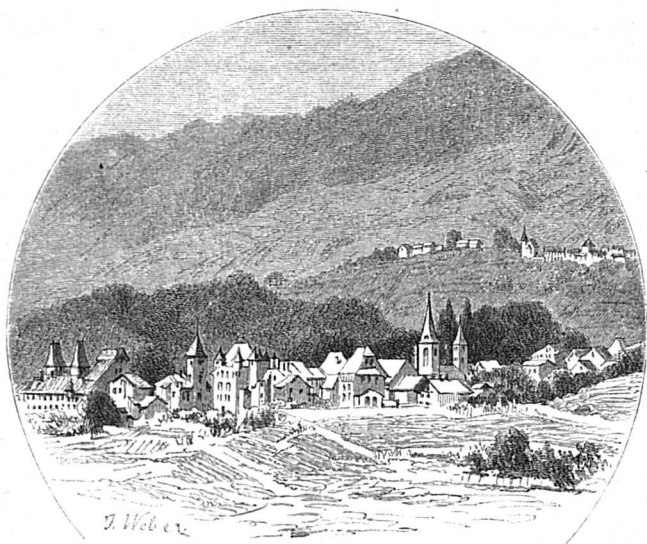
Sierre.

Sierre (*Ger.* Siders), railway station, 1774 feet above the sea, a village of 1670 inhabitants. Fine church, stately castellated mansions belonging to the noble families of De Courten, De Chastonnay, and De Preux. Good hotels, especially the *Hôtel Bellevue*. "Sierre is one of the best *autumnal resorts* for the *grape-cure*, and its climate is admirably adapted for convalescents and for sufferers from chronic bronchial catarrh, chronic laryngitis, &c." (See Gsell-Fels, *Die Bäder der Schweiz*). In the tower of the ancient church is a Roman inscription:

MERCVRIO
L. VALERIVS
OPTATVS
V. S. L. M.

In the environs of Sierre, especially in the adjacent Murat, discoveries have been made leading to the conclusion that Sierre was an important Roman colony. Castle ruins attest its importance in the Middle Ages, when Sierre was the seat of numerous nobles, the families of De Chevrone, De Montheys, De Plateau, &c.

DURING the summer months every train conveys hundreds of travellers past Sierre, but those who leave the train here are few in number,—such as intend to penetrate into the Eifischthal, to make their way on foot to the Baths of Leuk, or to explore the peaks of the Wildstrubel. This is not to be wondered at, for the low level of the railway line and the tunnel beneath the hill of Goubing completely intercept the view. And yet Sierre is one of the most finely situated places in the valley of the Rhone. The valley expands here



Sierre.

even more than at Sion; the northern mountain-chain recedes, its slope is gentler, and the broad and fertile dale is studded with villages adorned with trim churches and stately castles, and with scattered groups of houses interspersed among the fruit-trees. Flourishing vineyards clothe the base of the mountains, whose summits, covered with the extensive snowfields of the Plaine Morte, dominate the charming district, which is well entitled to its popular designation of "la noble contrée."

The opposite side of the valley, however, is bounded by steeper acclivities, in part wooded, in part barren, and here the Navigence torrent pours its foaming waters through a deeply cut, narrow, and inaccessible rock-defile, the entrance to the picturesque Eifischthal. From here we cannot see into the valley, the road to which leads for six miles in numerous zigzags up the steep rocky slope, but on climbing the opposite slope to the villages of Muraz, Venthône, St. Maurice de Lac, and Miège, or still better to the Alpine

pastures above them, the valley of Anniviers (Eifischthal) with its glittering snowfields and lofty mountains is opened before us.

But Sierre itself, *Sirrum amœnum*, "Sierre the Pleasant," as the ancients called it, is situated in one of the most fertile districts of the canton, and is surrounded by vineyards, meadows, and orchards; the walnut-trees too which abound here are remarkable for the luxuriance of their growth, and besides affording an agreeable shade they impart a cheerful and attractive appearance to the place. The surroundings of Sierre present quite peculiar characteristics. The valley here does not form a level plain, as between Sion and Martigny, or from Leuk to Brig; hereabouts, from the Pfynwald to near Grone it is studded with larger or smaller eminences, some barren, some wooded, some quite isolated, others connected by ridges of varying height. All these hills, which consist of débris and detritus cemented by a kind of marly earth, are obviously the remains of an immense landslide which took place (probably at several intervals) during the glacial period, at the time of the greatest extent of the glaciers and during their retrocession, so that the fallen material was in part borne down the valley on the ice-masses of the great Rhone Glacier. Even on the twin eminences of Tourbillon and Valeria, near Sion, which, however, do not consist of loose material, several memorials of this event still exist in the shape of huge blocks, one of which, called the Venetz Stone, figures in scientific annals.*

* The occurrence of these conical hills and undulating plateaux sloping towards the south recalls the analogous formations of earth-pyramids near Useigne in the Eringerthal. An examination of the mineralogical structure of these mounds of detritus shows that their interior consists only of limestone and slate, in fragments varying in size from the finest grains to enormous blocks. Crystalline or other rocks are not found within these hills, though their interior is exposed to view in many places, especially near the Rhone. At a few points only fragments of crystalline rock are found on the surface, and in the vicinity of Sierre and Salquenen some blocks of greenish Taviglianaz sandstone, apparently derived from the heights of the Wildstrubel. On ascending from Sierre

At a later epoch the Rhone cut several channels through them, often changing its course, which, however, is now controlled by solid embankments.

These hills form a chief feature in the picturesque and varied landscapes around Sierre. On turning off to the south we are agreeably surprised when, in the course of an un-fatiguing walk, we suddenly come upon two little lakes, whose azure waters, reflecting the vineyards which surround them, present a tempting opportunity for a bath. Soon after we come to a third lake, somewhat larger in area, lying at the foot of a wooded hill on which stands the ancient convent of

Gerunden,

now the property of the Episcopal Seminary for Priests at Sion. Entering the doorway, we find that perfect silence reigns here, and we can sit undisturbed at one of the windows and enjoy the beautiful prospect that is spread before us. We are far from the tumult of the world, and can fancy ourselves transported back to the old times described by Mr. L. L. von Roten in his poem "*Die letzten Ritter auf Goubing*," when pious Carthusian monks spent lives of prayer and meditation in the convent of Gerunda, or, still more sequestered, in the numerous little cells excavated in some far off time in the face of the cliffs to the south—the legend says, by the hands of dwarfs.

to the steep face of the Varneralpe, the limestone and slate composing it are seen to be of the same kind as we find in the hills of *débris* below. Up on the Varneralpe the strata are almost horizontal, but towards the valley of the Rhone they have a dip of 30 to 35 degrees. It there appears that the masses of *débris* owe their origin to landslips caused by the inclination of the strata towards the valley; similar slips have occurred in modern times above Yvorne (1584) and on the Diablerets (1749), while in the year 562 the Roman colony of Epaunum was destroyed by a landslide from a spur of the Dent du Midi.

There is a legend, too, in connection with the convent itself: its vaults contain an immense treasure, guarded by an enchanted damsel for her wicked father. Only once a century, on Easter morning, is there a chance to break the spell; at early dawn the maiden appears in all her beauty, and makes her toilet at a spring which then suddenly bubbles up from beneath an ancient wall. She waits in vain for deliverance, for the bravest would hesitate to fulfil the hard conditions. The slaughter of a dragon or a griffin would be a mere trifle, but to give a warm embrace to three hideous monsters into which she must be transformed—a black toad, a venom-spitting snake, and a fire-breathing lion—that is rather more than anyone would care to do.

The Goubing Tower.

On another hill, near the railway station, stand the ruins of the ancient episcopal castle of Altsiders, which was destroyed in the year 1415 by the people of Upper Valais in a feud with the Raron family. But of greater interest is the eminence on which stands the Goubing Tower. As already mentioned, just above the station the railway traverses a tunnel, leading through the mound of débris nearest Sierre. A shady path conducts us up to the tower, past several caverns which are used by the people of Upper Valais for the storage of wine. In autumn, and still more a few weeks later, when the new wine begins to get clear, these cool cellars are the scene of many a merry drinking-bout, for every wine-grower is proud of his vintage, and gladly keeps up the old custom of inviting his friends to sample the new growth. The neighbourhood of Sierre was famous centuries ago for its wines, as we learn from the old chroniclers. The varieties chiefly cultivated* here

* In the district of Sierre the grape is still chiefly cultivated in the manner traditional in Upper Valais, especially in sites exposed to the winter and spring frosts. The principal advantages of this method are the

are the *Muscatel*, *Arvine*, *Humagne*, *Fendant*, *La Rèze* (dry, but improving greatly after being stored a few years on the mountains, when it is known as *Vin de Glacier*), *Malvoise*, originally from Spain and well worthy of its fatherland, and lastly a fiery red wine cultivated near Salquenen, the so-called *Vin d'Enfer*.

But let us hasten past these tempting caverns up to the heights. They are covered with vineyards and with a small fir-wood traversed by shady paths. In the midst of the wood, on a huge block, stands an ancient tower, the *Goubing-Thurm*,

following: The old worn out vines being constantly set deeper are replaced by new wood, the vineyards are always in full bearing, and never need to be grubbed up. The trenching brings fresh layers of earth into the neighbourhood of the roots and under the immediate influence of the atmosphere; the mineral constituents of these fresh layers are decomposed by the air, and save the cultivator considerable manure, which he can then employ for his fields and meadows. Finally, in the work of trenching the earth is always thrown towards the higher part of the vineyard, especially where the slope is considerable, and thus the indispensable nutriment is equally dispersed in all parts of the vineyard. But the principal point in this method is that all the plants are renewed in the course of three or four years by means of deep trenches in which a new row is set every spring. The superfluous soil is thrown over the vines planted the previous year, so that they are constantly renewed, and no old wood is found. The training of the vines too is much simpler. The unfavourable climatic conditions, especially the winter and spring frosts, prevent the growth of spreading tops. A lower cane, called the *pouzet*, is left with two or three buds, and an upper one—the *fleurette*—with four or five buds, according to the strength of the vine. In the following year the *fleurette* is removed, and the vine newly formed from the young shoots of the *pouzet*. This indeed is not the ideal of a rational grape-culture, as it can be carried on for instance in the district of Sion and in Canton Vaud. The yield too is perhaps one-third less; but the circumstances, especially the climate, permit of no other method of cultivation, and after numerous experiments during the last 15 or 20 years the vine-growers of Sierre and its environs have been compelled to return to the old, tried method. It must be borne in mind, too, that many of the Sierre vineyards belong to persons in the Val d'Anniviers, who would be unable to convey the necessary manure so great a distance, and who are also unable to devote very much time to the cultivation of their vineyards.

once the seat of the noble De Platea family, and still in good preservation. At the base, and still more on the platform of the tower, we obtain a magnificent view not only of the immediate surroundings, but also a considerable distance up and down the lovely valley of the Rhone.

The Pfywald (Le Bois de Finges).

An excursion to the Pfywald, half an hour's walk above Sierre, is extremely enjoyable. At first we follow the high-road, through the village of Glarey, then over the Rhone bridge to the point where the road to the Eifischthal branches off. Here we turn off to the left into the forest, near the *Mörderstein*, a huge block of limestone, split from top to bottom, in connection with which the following tradition exists.

Once upon a time the Pfywald was infested by a band of robbers, the terror of the district and of travellers passing through it. One day there fell into their hands a poor woman carrying not without difficulty a precious burden, her infant child. The cruel bandits killed the mother, and brought the unfortunate babe to their captain. The child looked up at him as though supplicating mercy,—but the wretch was a stranger to every humane feeling:

“Ha!” cried the chief in mocking tones, “We’ll see
If this young creature can our haunt betray;
Three pretty questions will I put to thee;
Give answer now, and speedily, I pray:
“What canst thou name than the sun more bright?”
“The dream the babe dreams in its cot at night!”
Straightway an infant voice replied;
The robbers’ hearts within them died.
Their hardened chief had almost paused,
Such fear the unlooked for answer caused.
“What’s sweeter than honey to the taste?”
“The milk, the milk from a mother’s breast!”

These plaintive words the infant speaks,
Its glance the ravished treasure seeks.
"And what is harder yet than stone?"
"The ruthless murderer's heart alone!"
Speechless with rage the robber stands,
—Shall thus a friendless child his fury mock?—
He grasps the innocent with cruel hands,
And dashes it against the rock.
Down to the earth it drops, a lifeless corse,
Well might the fiercest ruffian feel remorse.
But see! In token that 'tis softer far
Than that fell murderer's heart,
As moved with pity at so foul a crime,
The firm rock splits apart!

This deed was in the Pfywald done,—
Still may you see the 'Murderer's Stone.'—

(From the above-mentioned Poem by *L. L. von Roten.*)

We need have no hesitation in entering the forest, which has long ceased to harbour gentry like those whose deeds are commemorated in the legend of the cleft stone.

The timber consists for the most part of the red pine or Scotch fir; this is something unusual in Switzerland, and reminds one of the forests of southern Italy. In Valais these pine-woods always stand on old moraines and accumulations of detritus, as for example between St. Maurice and Martigny (Bois Noir), above Sion, at the mouth of the Visp valleys, and here. The trees are smaller than the German pines, but picturesque and of southern compactness. In these pines the southern *Bombyx Pithyocampa* spins its large, strong cocoons, and the south Alpine *Euphrasia viscosa*, as well as *Coronilla minima*, *Chenopodium Botrys*, *Pyrola Chlorantha*, *Astragalus excapus*, *Oxytropis Halleri*, *Hieracium vallesiacum*, *præaltum*, *pictum*, and *tridentatum*, *Viola arenaria*, and many other rare plants are denizens of these pine-woods.

Here and there among the wooded mounds of débris small ponds are to be found, in which various rare aquatic plants such as *Ranunculus Rionii*, *Ceratophyllum submersum*, &c., may be met with.

- Pyrola chlorantha*, Tw.—Pfywald.
Plantago Cynops, L.—Sierre.
Ruta graveolens, L.— Pfywald.
Chenopodium Botrys, L.— do.
Blitum virgatum, L. do.
Coronilla minima, L. Salquenen, Varen, Pfywald.
Euphrasia viscosa, L.—Fir woods.
Molinia serotina, M. et K.—Les Patrières.
Pimpinella nigra, Koch.—Sierre, &c.
Micropus erectus, L.—Sierre, fields.
Achillea setacea, W. et K.
A. tomentosa, L.
A. nobilis, L.
Hieracium vallesiacum, Fr.—Sierre, Varen, Vercorin.
H. lanatum, Vill.—Varen.
H. niveum, Müll.—Sierre.
H. niveum piloselloïdes.—Sierre.
Isatis Villarsii, Gaud.— do.
Equisetum ramosissimum, var. *altissimum*, Al. Br.—Altsiders.
Cheiranthus Cheiri, *Corydalis australis*, *Viola Berandii*, &c.

2. Northern Limestone Alps (Wildstrubel Group).

- Sisymbrium austriacum*, Jacq.—Above Lens.
Draba Wahlenbergii, Hartm.—Bellalui.
Alsine laricifolia, Crantz.—Corbire de Lens.
Mæhringia polygonoides, M. K.—Bellalui.
Cytisus radiatus, Koch.—Lens pastures.
Oxytropis lapponica, Gaud.—Bellalui.
O. Gaudini, Reut.— do.
Astragalus depressus, L.—Corbire de Lens.
Geum reptans, S.—Mont Tubang.
Saxifraga cæsia, L.—Tubang, Wildstrubel.
S. exarata, Vill.—Bellalui, &c.
S. cernua, L.—Bellalui (nowhere else in Switzerland).
Valeriana salinca, All.—Bellalui.
Saussurea depressa, Gren.—Tubang.
Aposeris fætida, Less.—Corbire, &c.
Androsace pubescens, DC.—Bellalui.
Asphodelus albus, L.—Croumaclire.

3. In the Eifischthal.

- Euphrasia cuprea*, Jord.—Brien-dessous.
E. majalis, Jord.—Brien-dessous.

- Hieracium Sempronianum*, Wolf. - Brien-dessus.
H. vallesiacum, Fr.—Brien-dessous and Vercorin.
H. prenanthoides, Vill.—Vercorin.
Rosa stenosepala, Christ.—Vercorin.
Geranium divaricatum, L.—Vercorin.
Galeopsis Reichenbachii, Reut.—Vercorin.
Linnæa borealis, L.—Tracuit, Zinal, &c.
Rosa aculeata, D. C.—Vercorin.
R. Franzonii, Chr.— do.
R. pomifera, Herrm.— do.
R. montana, Chaix.— do. and others.
Epipogium aphyllum, Tw.—Wood on the way to Vercorin.
Geranium bohemicum, L.— do.
Hieracium lactucæfolium, Arv.—Touvet.—Vercorin, Pensec.
H. Wolfianum, Favre.—Pensec.
Rosa Salevensis, Rapin.—Vercorin, Pensec, Vissoye.
R. turbinata, Aiton.—Pensec, Vissoye.
R. cornuta, Christ.—Vissoye.
R. Grenieri, D.—Vissoye, St. Luc.
R. recondita, Pag.—Vissoye, St. Luc.
R. Chavini, Christ.—Vissoye.
Fumaria Schleicheri, S. W.—Zinal.
Allosorus crispus, Bernh.—Zinal.
Draba Thomasii, Koch.—Zinal.

The environs of Têtaz-Fayaz and Zinal are perfect gardens of the loveliest Alpine plants, to enumerate which would occupy too much space.

- Potentilla caulescens*, L.—Les Pontis.
Calamintha nepetoïdes, Jord.—Les Pontis.
Arabis saxatilis, All.—Niouc.
Centaurea vallesiaca, Jord.—Niouc.
Glaucium corniculatum, L.— do.
Orlaya grandiflora, Hoffm.— do.

Excursions from Sierre.

Among the more distant mountain excursions which may be undertaken from Sierre, the following are deserving of mention:

1. Over the *Rohrbachsattel* in 9—10 hours to Lenk in Canton Berne. Over the pastures of *Rong* and *Pepinet* (6597

feet) up to the *Furke* (in $4\frac{1}{2}$ hours) at the end of the commanding rocky wall of *Bellalui*. In the vicinity of *Bellalui* the botanist will discover numerous treasures (see the above list). From the *Furke* it is $2\frac{1}{2}$ hours to the top of the pass, at first down a steep slope, then rounding the further end of the valley of *Dersance* and the foot of Point 3001, crossing the little valley below the lake, the water of which flows off through a tunnel, and over débris to the summit of the pass. From here it is $3\frac{1}{2}$ hours walk down to Lenk.

2. From the *Furke*, *Mont Bonvin* or *Le Sex au Bonvin* (9950 feet) may easily be ascended. Wonderful panorama towards the south—the Pennine Alps and a great part of the valley of the Rhone—and towards the north an imposing view of the *Glacier de la Plaine Morte*.

3. From *Mont Bonvin* we can without difficulty reach the *Glacier de la Plaine Morte* and thence the summit of the pass between the latter and the *Rätzli Glacier*, the *Rätzlijoch* (8792 feet), descending to Lenk.

4. Lastly the *Gemmi Pass* and the *Baths of Leuk* may be reached across the *Glacier de la Plaine Morte*, over the *Lämmernjoch* or the *Schneejoch*. For the three last-named glacier-passes experienced guides are requisite.

But *Sierre* owes its chief significance as a tourist resort to the fact that it lies at the entrance to the *Eifischthal*, whither we now invite the reader to accompany us.

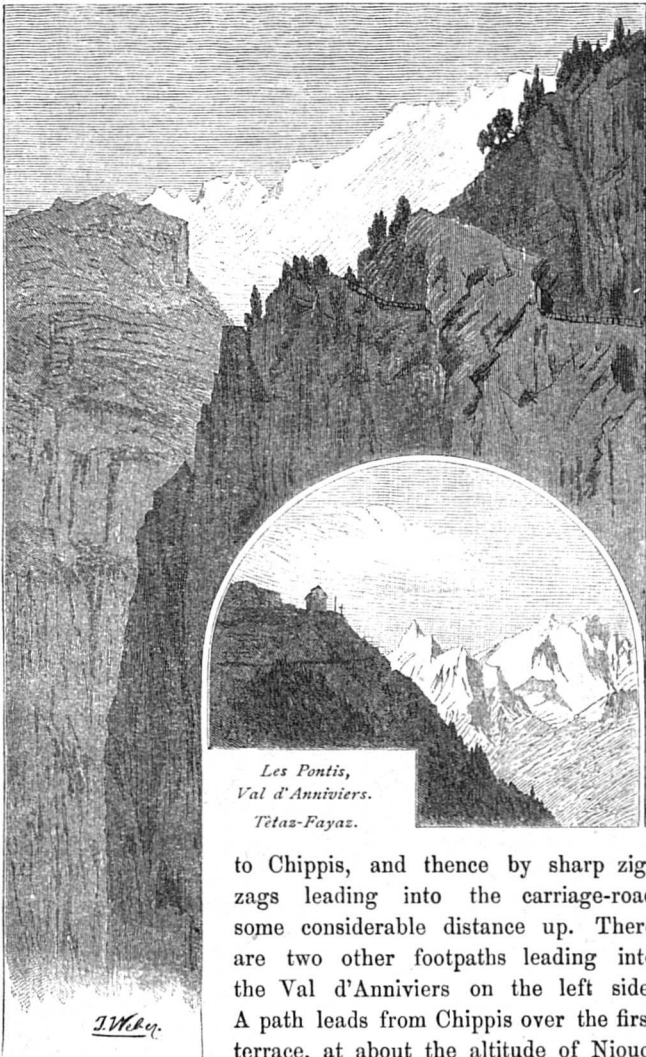




The Eifischthal (Val d'Anniviers).

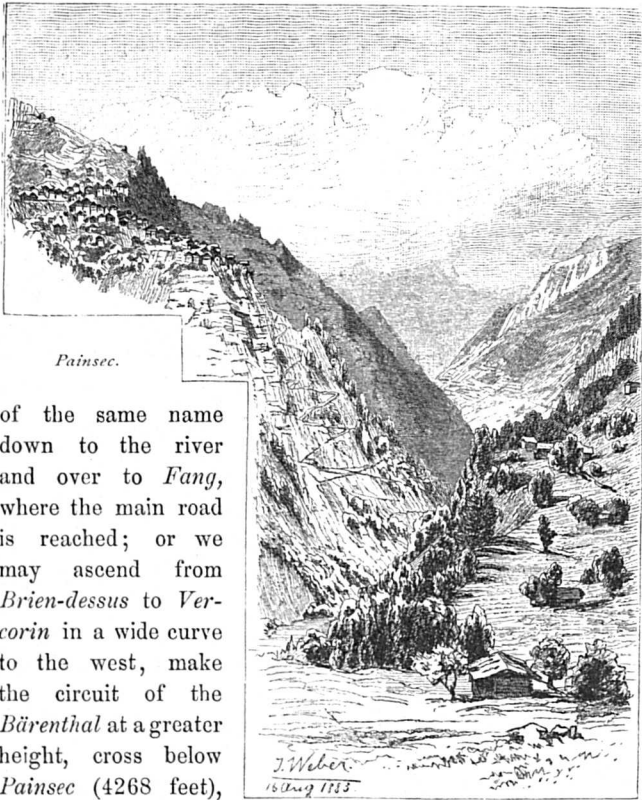
“The long, narrow, wooded, and little known Alpine valley of Eifisch, opening towards the south and traversed by the wild *Navigence*, contains the sublimest mountain scenery of Canton Valais, Zermatt perhaps excepted; everywhere the strongest contrast is presented between the fertile bottom of the valley and the savage and stupendous surroundings, but more especially so in the upper part, the *Zinalthal*. The Eifischthal being narrower and bounded by steeper mountains, is even richer than the valley of Zermatt in picturesque effect and striking contrasts. The good-natured, hospitable, and sober inhabitants, often nomadic in their habits, are said to be of Celtic blood; they are the most industrious and prosperous of the mountaineers of Valais, and have many remarkable manners and customs.” IVAN V. TSCHUDI.

WALKING in the valley of the Rhone, between Sierre and Chippis, we see only the deep gorge excavated by the *Navigence*; the Eifischthal proper lies considerably higher. In order to reach it, we must ascend either to the plateau of *Niouc* (3248 feet) on the right, or of *Vercorin* (4501 feet) on the left side of the valley. Various routes may be selected. The only carriage-road, which was completed no more than 25 or 30 years ago, leads in numerous long windings up the steep wooded cliffs of the western spur of the *Corbetschgrat*. During at least half-an-hour we follow the *Simplon* road, which intersects the *Pfynwald*, past *Glarey* and the Rhone bridge to the vicinity of the “Murderer’s Stone”, where our road branches off to the west. Pedestrians can take a shorter cut, over a new bridge at the foot of *Gerunden*, straight on



*Les Pontis,
Val d'Anniviers.
Têtaz-Fayaz.*

to Chippis, and thence by sharp zig-zags leading into the carriage-road some considerable distance up. There are two other footpaths leading into the Val d'Anniviers on the left side. A path leads from Chippis over the first terrace, at about the altitude of Niouc, to *Brien-dessus* (3165 feet), then round the *Bärenthal*, opposite the first gorge of Pontis, and behind the second gorge



Painsec.

of the same name down to the river and over to *Fang*, where the main road is reached; or we may ascend from *Brien-dessus* to *Vercorin* in a wide curve to the west, make the circuit of the *Bärental* at a greater height, cross below *Painsec* (4268 feet), and thence steer

either for *St. Jean* and *Grimenz* (6263 feet) or for *Vissoye* on the other side of the valley. This last-named way indeed is but little frequented, though enjoyable in a high degree. During six hours we are traversing a district which presents some new attraction at every step; we will mention only the charmingly situated chapel in the woods above *Brien-dessus*, and the commanding plateau of *Vercorin*; then too there are the magnificent forests of the *Bärental*, on issuing from which we all at once see before us the snowy mountains of

the Zinal valley, while at our feet lies an immense moraine landscape, in the midst of which rise the clustering grey roofs of the hamlet of *Painsec*, occupying an adventurous situation on the steep slope.

Although the trim village of Vercorin is not inhabited throughout the entire year, it is quite populous during the summer months, when refreshments can always be obtained of the prosperous inhabitants; and greatly do we relish the excellent cheese and wine after our three hours' walk in the bracing mountain air, nor do we refuse a glass of "Glacier" in the hamlet of *Painsec*. The botanist too will find many treasures everywhere along this route, as for instance *Geranium divaricatum* and *bohemicum*, *Linnaea borealis*, *Astragalus excapus*, various *Euphrasia*, some rare *Hawkweeds*, and numerous *Roses*. All who visit the Val d'Anniviers should at least return by this path, especially if on their way to Sion. In this case there is no necessity to return to Sierre, since Sion may be reached by a direct path leading through the prettily situated villages of Rechy (or Chaley) Grône, and Brâmis.

We now resume our journey along the more frequented carriage-road. From the Pfywald road it is a good hour's walk up the mountain to *Niouc*. The little plateau on which this village lies has quite a different appearance and bears quite different crops from the valley of the Rhone. Up at this altitude wheat and rye are still cultivated, but of maize and the vine there is no trace; a few apple and pear trees are still seen by the roadside, however, besides numerous cherry trees, the fruit of which ripens here only in July or August, when down in the valley grapes may already be had. Here, and still more on a somewhat loftier projecting rock, where once stood Guiscard's stronghold of *Beauregard*, the prospect is magnificent. Northwards lie the Bernese Alps, with the imposing Wildhorn and the serrated peaks rising from the *Plaine Morte*; far below us is the valley of the Rhone, from Leuk to Martigny, where the rocks and the tower of *La Batiâz* are plainly distinguishable. Much nearer lie the hills of

Tourbillon and Valeria, and at our feet "*la noble contrée*,"—
Sierre, Gerunden and its lakes, Chippis, and the entire débris-
strewn district from Grône to Leuk. And on turning to the
south we see before us all the glittering ice-girdled Titans at
the back of the Eifischthal; in short the prospect here is so
overpoweringly beautiful that we despair of doing justice to
it without invoking the assistance of our poetical friend, Mr.
L. L. von Roten (see above):

"There, where the Eifisch Valley opes,
Rises a steep and barren rock,
By some primeval earthquake-shock
Loosed from the rugged mountain-slopes.
As from mid-air the circling kite
With eager beak swoops on her prey,
So ravined in his hour of might
Proud Raron from that hillock grey.

And rightly was the castle named,
The noble prospect rightly famed.
Far as the spacious view extends,
Slowly the Rhone's long vale ascends,
From Sierre's fields and vineyards fair
Up to the distant mountain-chain,
Whose snowy summits cleave the air,
As if to heaven they would attain.
The wolf in yon dark forests hides,
Among the rocks the chamois plays,
And on the grassy mountain-sides
The milky mothers tranquil graze;
From rocky gorge and lofty steep
With uproar wild the torrents leap;
The herdsmen's merry songs resound,
And odorous herbs bedeck the ground.

Here, in this wild romantic scene
Of verdant mead and savage rock,
A people dwells of rugged mien,
Children of nature's true-born stock.

A sturdy tribe of German race
Has planted here its dwelling-place,
Leading a rough and toilsome life,
With all the elements at strife.

Now against savage beasts contending,
Now working, watching, day and night,
Houses and meadows scarce defending
Against the swollen torrent's might;
Now to a deadlier foe a prey,
The avalanche, that, forests cleaving,
Behind it desolation leaving,
Swift and resistless takes its way.
Thus see they oft their best hopes perish,
Nor loss of wealth nor hardships heed,
Two gifts of heaven alone they cherish,
Their ancient freedom and their creed!

But again the flowing Rhone
Beckons to a milder zone,
Where the eye 'twixt gardens roves,
Vineyards steep, and shady groves.

Here the narrow vale expands,
Vanished is the landscape's gloom,
Nature weaves with busy hands
Wealth of leafage and of bloom.
Earth the gifts of heaven receives,
Nature shows her fairest side;
'Mong the vines thick-clustered leaves
Ripening juicy bunches hide.

Th' unclouded sun's refulgent rays
Paint the hills with purest gold,
On their summits, all ablaze,
Glitters many a castle old,
While over gardens, fields, and meads,
A sky of southern sapphire spreads.

... ..

Hither, it may be in the chase,
His way Count Raron found,
And from this lofty vantage-place
Surveyed the country round;
Then reared the towers seen from far,
The lofty towers of Beauregard."

In half an hour we have traversed the plateau of Niouc, and then on turning a corner the character of the landscape suddenly changes. Steep cliffs rise on all sides, while below us lie precipices a thousand feet and more in depth. These



J. Weber
Sept. 1853

Chandolin.

are the celebrated ravines of *Pontis*, whose vast cliffs of dolomite limestone have given the name of "*Pontis-Kalk*" to a geological formation extensively developed in Canton Valais. We can scarcely conceive the possibility of pursuing our way through these terrific gorges; nor was there always a path through them; the way to the Eifischthal formerly led high up past Beauregard, until a benevolent priest of St. Luc caused this path to be constructed,—in part hewn in the solid rock, and in part projecting from it on masonry or woodwork. The following modest inscription commemorates the originator of this useful undertaking:

†
 J. H. S.
 JMPENSJS P* V* QUARTERY
 DE LUC HOC OPUS
 JTIJNERJS* F* F*
 ANNO D*
 1613.

A few years ago the bridle-path was improved and made practicable for vehicles, so that we can now drive through these abysses in perfect security, along an almost level road. Beyond the first and principal gorge, which is famous for its superb echo, a footpath branches off to the left through forests and over the pastures of *Sussillon* (4527 feet) and leads in two hours by a very steep ascent to the mountain hamlet of *Chandolin* (6463 feet).

Sussillon, consisting of a small patch of meadow-land studded with a few cottages, lies about half-way to Chandolin. Already the view is of wonderful beauty, but we have not yet reached our goal; we ascend still higher, once more traversing woods and passing along a steep precipice, in the crevices of which grow the loveliest Alpine flowers, among them the large-blossomed, sky-blue *Aquilegia alpina* and the alpenrose; a snow-white variety of the latter grows very plentifully here, and we stop to gather a large bunch of these beautiful flowers. Huge specimens of the *Pinus Cembra* (here known as *arolles*), in whose branches the nut-cracker (*Nucifraga caryocatactes*) builds, complete the Alpine character of the landscape. Finally we round a projecting rock and reach the open, commandingly situated slopes on which lies *Chandolin*, the loftiest village

of Europe. The zone of forest-trees reaches scarcely higher than the village, and just beyond the last houses begin the Alpine pastures, which are stocked with cattle during the brief months of summer. On the sunny slope below Chandolin are a few gardens, in which cabbage, lettuce, and carrots can be just got to grow; then follow meadows affording one crop of hay and autumn pasturage for the cattle, and still lower, in *La Rechi* (4500 feet above sea-level) potatoes are grown. Orchard trees are of course absent at this elevation, nor is the culture of any kind of grain possible. For the inhabitants of Chandolin it is therefore a necessity, still more than for the other dwellers in the Val d'Anniviers, to acquire and cultivate land in the valley of the Rhone. They have their cornfields at Niouc and their vineyards at Sierre. Thanks to their industry and thrift, the people here are prosperous, and within the last few years they collected funds enough among themselves to build and endow a parish church. Tourists can always obtain refreshments at the parsonage house.

Beyond the second Pontis Gorge our road runs during at least an hour through forests of fir and larch; below us to the right we leave the hamlet of *Fang*, with its luxuriant walnut-trees,—the last in the valley. The slopes above and below us are here less precipitous; springs burst forth here and there by the wayside, and the naked, barren cliffs of limestone are replaced by verdant grassy slopes. Soon we discover beyond the ravine of the Navigence the hamlet of *Painsec*, boldly placed on the brink of the precipitous hillside; *Vissoye*, which has now been visible for some time, so conspicuously is it situated, promises us a hospitable reception, and at the extreme end of the valley appear the silver-glinting snow-capped summits of the *Rothhorn* and *Gabelhorn*, and the dark rocky peak of *Lo Besso*, standing out sharply against the ice and snow of the *Durand Glacier*. From *Fang* there is a good bridle-path leading in 1½ hours directly up to *St. Luc*; but we, leaving at length the savage ravine of the Navigence, hasten on to *Vissoye*, where the *Eifischthal* proper may be said to begin.

Vissoye, 4035 feet above the sea, is the principal place in the valley; thanks to its magnificent situation, it is attracting year by year an increasing number of tourists. Lying

in the midst of grassy meadows on the banks of the Navigence, in the vicinity of easily accessible woods of pine and other trees, and being sheltered by its situation from cold winds, it is admirably adapted for a summer resort. The new hotel, with post and telegraph office, occupies a commanding situation at the entrance to the village, and is surrounded by gardens and flowery meadows.

Messrs. Tabin Brothers, the proprietors of the hotel, give personal attention to all the details of its management. Their wine, the produce of their own vineyards at Sion and Sierre, is especially famous. The charges ("en pension" 5 francs per day) are extremely moderate considering that almost all the provisions have to be procured from Sierre, 12 miles distant, and from still remoter places.

The season at Vissoye begins as early as the month of May, and in this respect the southern lateral valleys of Canton Valais have an advantage over all other Alpine health resorts. It is therefore with perfect truth that, in his description of the climatic health resorts of Switzerland, Dr. Gsell-Fels recommends Vissoye as an agreeable resort for persons whose lungs are affected, and who need not only pure Alpine air, but a temperature that is equable, and mild in regard to the altitude.





History, and Manners and Customs of the Inhabitants of the Val d'Anniviers.

IN the midst of the village stands the ancient parish church, the largest and finest in the valley; and opposite the hotel, on an eminence composed of an ancient moraine, is a chapel erected at the beginning of the present century in honour of the Virgin Mother. The hill is surrounded by barns and other farm buildings; and footpaths, with benches at frequent intervals for the convenience of invalids, lead along its base. We, however, will ascend to the chapel and take our seat on one of the rocks—memorials of the glacial period—scattered around it; here we can contemplate at our ease the beautiful landscape. Looking northwards, towards the mouth of the valley, we see beneath us the ravine of the Navigence or Usenz, through which we have come, with its foaming torrent, and with the villages of Painsec and Chandolin clinging to the steep sides of the gorge; high above Vissoye lies the trim village of St. Luc, and beyond the forest the newly-erected inn on Têtaz-Fayaz. In the reverse direction the valley is seen to be carpeted with pastures, and studded with numerous villages: on the left bank Mayeux, St. Jean, and Grimenz, up towards the Val de Moire or Torrentthal; and opposite these, Quimet, Mission, and Ayer; at the entrance to the Zinalthal, at the further end of which tower the Gabelhorn, the stern sentinel Lo Besso, and the ice-covered cliffs of Le Blanc, below the Rothhorn.

The site of the chapel was formerly occupied by a castle which served as a residence for the episcopal majordomo. All that history has to tell us concerning the Eifischthal is connected with this castle and with that of Beauregard or Perigard. The important domain of *Annavisium* was ceded to the bishopric of Sion in the year 1053 by Aimo of Savoy, abbot of St. Maurice and bishop of Sion (son of Count Humbert of the White Hand). The bishops of Valais appointed deputy governors over this domain, who took their name, *De Annavisio*, from the valley. This wealthy and powerful family remained in possession of the valley during six generations, from 1200 to 1380; namely: *Louis* about 1200, and his son *William*, who in 1243 also inherited the domain of Granges (Gradetsch) from Bishop Boson. He was succeeded by *James I.*, who married Guigona of Chastillon in the valley of Aosta; then came his son *John*, husband of Beatrice de la Tour, and finally *James II.*, the last male representative of the family. This last-named was married in 1336 at the episcopal palace of Tourbillon to Margaret of Ayent, and left only two daughters, *Johanna* and *Beatrice*.

The eldest, heiress of the domain of Ayent, married Tavelli, while the younger was united in the year 1382 to the powerful noble *Peter of Raron*, thus bringing the rich domain of Eifisch under the warlike house of Raron. These nobles having taken an active part in the revolt of the men of Valais against Bishop Edward of Savoy (in 1383) they were severely chastised by the youthful but courageous Amadeus VII. of Savoy, surnamed the Red Count. He laid siege in person to the castle of Perigard, the "impregnable fortress," destroyed it, and beheaded two of Raron's sons on the great bridge at Sion. Finally in the year 1415 Perigard was again captured, this time by the patriots who had conquered and driven out the haughty tyrant *Guiscard of Raron*, the fourth son of Peter; and now the castle was destroyed for ever. The banished Guiscard, it is true, regained possession of his domains in 1420, but ten years later his son *Petermann*, the last of

the race, was declared by Bishop Walter Supersaxo to have forfeited for ever his rights in the valley. Later claims to it on the part of his brother-in-law *Rudolph Asperling* were also unsuccessful. The castle at Vissoye was occupied by the bishop's castellan, with the consent of the inhabitants of the valley, until 1798.

The Eifischthal was the ancestral home of the *De Torrenté* family, which is mentioned in the chronicles of the valley as early as the year 1358. In 1559 this family gave the canton a vice-bailiff (Philippe de Torrenté), and it is still one of the most influential patrician families of Sion. Its ancestral seat is still shown in Ayer.

The Val d'Anniviers was one of the few valleys that escaped the depredations of the French hordes in 1799. On the other hand it has often suffered severely from natural occurrences. In the thirteenth century Grimenz was destroyed by a landslip, and rebuilt on its present site on the opposite side of the valley. In 1834 an inundation of the Navigence destroyed the village of Chippis and occasioned much loss of property in the valley. St. Luc has been destroyed by fire twice in the course of the present century (1849 and 1857), and in 1879 a large conflagration took place at Vissoye. On these and similar occasions the Anniviards have never sought external assistance; on the contrary, in 1834 they magnanimously declined their share of the collections that had been made in Switzerland and foreign countries for the people of Valais, with the request that it be applied to the relief of their still more unfortunate brethren. The General Committee reported as follows concerning this matter:

“In the Eifischthal a large and fertile mountain pasture, the pride and the joy of this community of herdsmen, has been almost entirely destroyed by coarse detritus; the entire valley, eight leagues in length, is perpetually exposed to landslips, owing to the undermining of the lowest meadows; and in the present inundation the damage to buildings (42 of which have been destroyed), lands, and mountain pastures is estimated at £6000. And these are the people who have refused their share of the contributions, and who abide by their refusal, because in their industry

and frugality they possess an inexhaustible spring of contentment, powerful enough in itself to withstand all the blows of fortune."

This noble and unselfish act aroused general admiration, and in recognition of it the Federal Committee of Relief set apart the sum of 500 francs for its commemoration, which was effected by the presentation to the parish church of Vissoye of a richly decorated chalice of artistic design, bearing on an enamel plate the following inscription:

Magnanimis
Navizentiaë
Accolis
Helvetorum
Munificentiaë
Dispensatores.
1835.

A people capable of so remarkable an action must be themselves remarkable; and we now purpose to describe somewhat more fully the inhabitants of the Val d'Anniviers.

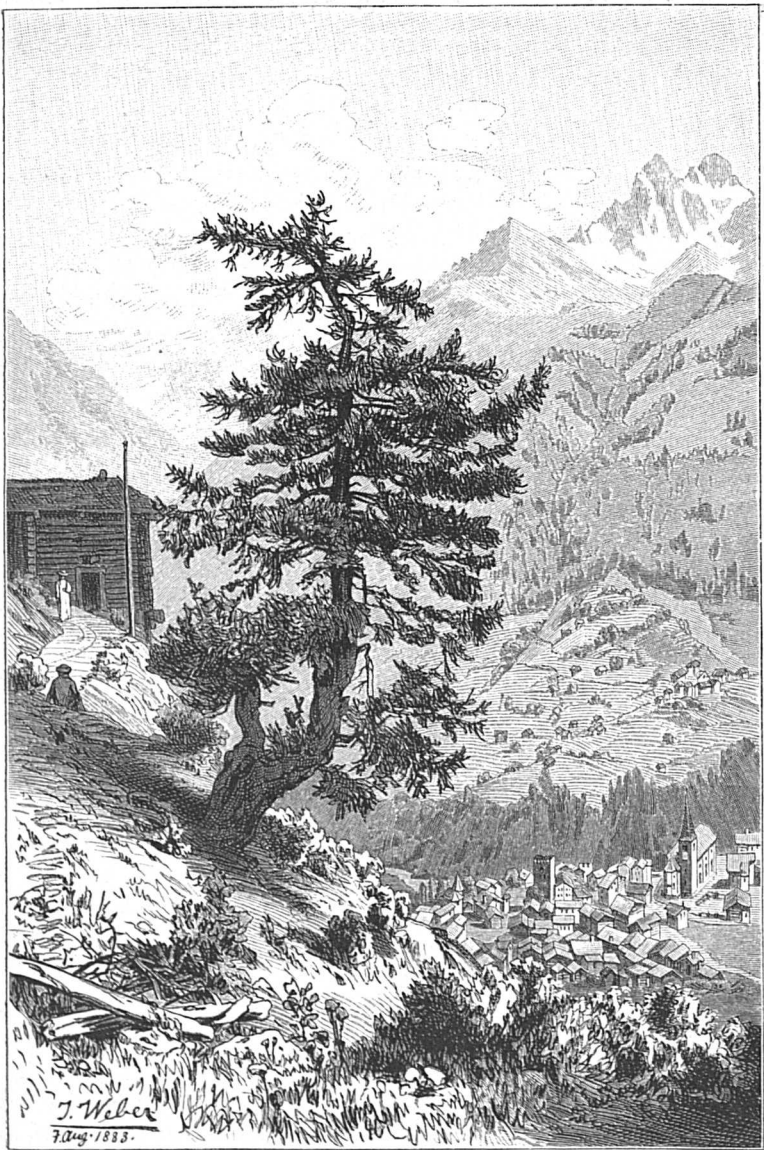
Since the time of the traveller Ebel, almost all accounts of the Eifischthal repeat his assertion that the inhabitants of this valley are descended from the Huns, or as some say from the Hungarians. But of this assertion there is no historical proof. Some have supposed that the *patois* spoken here contains remains of the language of the Huns, while others have attributed the nomadic habits of the dwellers in this valley to their Tartar descent, in spite of the fact that similar nomadic habits are common in many other Alpine valleys, and are indeed necessitated by the circumstances.

The Anniviards occupy themselves not only with the breeding of cattle, but also with agriculture, and even with the cultivation of the vine in the valley of the Rhone. The excessive population of the valley* in comparison to its cul-

* *Chandolin* 169 inhabitants. *St. Luc* 264, and the three communes of *Ayer* (785), *Grimenz* (215), and *St. Jean* (264), together forming the parish of *Vissoye*, 1264; making a total of 1797 inhabitants.

tivable area compelled the people to seek other means of livelihood and to acquire property elsewhere. Formerly they invested their savings chiefly in vineyards in the vicinity of Sierre, but during the past century they have also acquired meadows and fields, so that at the present day the inhabitants of the Val d'Anniviers possess considerably more taxable landed property in various communes of the Rhone Valley (Sierre, Veyras, Miège, Venthône, Randogne, Lens, Challais, and Granges) than in their own valley. There is now not a single family without such possessions.

On seeing the numerous dwellings scattered over the entire valley, from the margin of the glacier to the ravines of Pontis, we might suppose that the valley contained a very numerous population indeed. But at whatever season of the year the traveller visits the valley, he will be surprised to find that some of the villages seem almost uninhabited. The possessions of the Anniviards lie very far apart—often several days' journey—and at very different altitudes, so that almost throughout the whole year some of them may be seen travelling from one plot to another. At all the principal places in which they own property they have built themselves cottages, whose cellars contain a plentiful store of cheese and wine. The cows too, from which their owner parts only during the three summer months, are well provided for. They are lodged in a stable which, although somewhat low, is paved with planks and kept clean, and are supplied with hay of the best quality and with excellent water from the springs. Thus the peasants can travel easily and without great trouble from one station to another. Time, it is true, is lost by this wandering life; but by travelling for the most part at night, this inconvenience is to some extent obviated. It would indeed be difficult to find a busier and more industrious people than these Anniviards. There is not a beggar in the entire valley, and any that the traveller may chance to meet there come from the valley of the Rhone. Neither are there any inns or taverns (except the hotels, which are only open during the summer



Vissoye.

season), nor any expensive amusements such as dancing and music. The people still maintain the simplicity of their fathers. Men and women, rich and poor, all wear the same coarse woollen stuff, which they themselves weave from the black wool of their own sheep. Their houses, formed of trunks of trees laid one upon the other, are simple and devoid of ostentation within and without. Cellars, however, are never wanting, and are always well provisioned; moreover they form the reception rooms for friends and visitors. Their hospitality often knows no bounds, and in Rousseau's "Letters from Valais" he complains of the necessity imposed upon guests of drinking the strong wine of the country at tables where no water was to be found. "But," he adds, "Who could be angry with such good-natured folks? . . . I got drunk out of gratitude, and paid the reckoning with my reason in default of being permitted to do so out of my purse." The simplicity of their dwellings is such, that one seldom sees in them any object that has cost money. They work and save in order to add field to field and to increase their herds; that is their pride and their joy.

We will now examine somewhat more closely the yearly round of occupation of these people. No sooner do they perceive, in spring-time, while their own valley is still covered with snow, that the vineyards of Sierre are free from it and that the soil has thawed, than they flock down, family after family, taking with them even the priest, the justice, and other officials, who then exercise their functions at Sierre. At the head of the party ambles the heavily laden mule kept by every peasant. It carries all that is needed for the household, such of the children as cannot yet walk, and the old people who are past walking. Now-a-days a light cart is often employed, especially beyond Vissoye; if not, the mule is led by the head of the family, or, if not too heavily laden, is ridden by him. Then follows the housewife, with the small, well-fed, and cleanly kept cows behind her. They form the most important part of the caravan. After them come the

children or the other members of the family, followed by the smaller cattle, goats, sheep, and calves. A pig, driven by a little girl or an old woman, brings up the rear. Throughout Lent they remain in their villages near Sierre, and work in their vineyards. Meanwhile the cows are fed on the hay obtained the previous summer from the meadows of the village. A week before Easter they all return to the principal villages of their valley. Meanwhile the snow has also melted there, and now the meadows and fields are manured, the manure being carried on the backs of the mules. Afterwards the fields are planted with potatoes and beans, and sown with barley and hemp. Laborious work this! So steep are the slopes that ploughs cannot be used, and all the fields have to be worked over with a broad hoe. After these labours are completed, another migration to the loftier pastures takes place; the hay stored here is consumed, and the meadows cleansed and manured. In this region there are no fields, but at the most a small vegetable garden.

This too is the time for executing public works, for which purpose one or more persons are requisitioned from every household. There are roads to be mended, water-conduits to be cleaned and repaired, and lime, stone, slate, &c. are required for public buildings. All these things the inhabitants attend to themselves, employing no engineers, architects, or foreign labourers. Their other necessities they also supply themselves, for the most part, none devoting themselves exclusively to any special trade. Everyone builds his own house, the tailors are all shoe-makers also, and at the same time farmers and mountain guides, while the women occupy themselves with spinning and weaving, making and mending clothes, washing and baking.

Gradually the summer approaches. The rye or wheat sown in the higher parts of the valley of the Rhone has ripened, and the meadows are ready for mowing. But this time the cows are left behind in the pastures, or are driven to the still higher "alps," the mountain-pastures properly so

called. This begins as a rule on the day before St. John's Day (on June 23rd).

The Alpine pastures begin immediately above the limit of forest trees (5900 feet) and extend as a rule in terrace-like formations up to a height of 8500 feet, where the luxuriant growth of grass gradually ceases. Each of these "alps" or "montagnes" supports during the summer a herd of cattle, comprising cows, goats, sheep, and pigs. Their pasturage has its precise boundaries, extending almost always from the forests up to the limit of vegetation; and the herd is gradually led up to the highest part, which is reached about the middle of the summer, after which it is gradually brought down again. On the lowest terrace stands the white stone hut in which the cheese and butter are stored. Near it is a rudely constructed stall for the cows, and adjoining this last the huts for the herdsmen and the pigs. On the higher terraces there are no cow-stalls, but only small stone châteaux in which the cheese is prepared, and which afford shelter to the herdsmen; the cows sleep in the open air, on the soft turf. The stalls are cleansed after the manner introduced by Hercules: a brook is conducted into the stall, cleaning out the dung and at the same time watering and manuring the subjacent meadows.

A few days after the herds have been driven up to these loftiest pastures, the curé of Vissoye or his vicar comes, and makes the round of the alps, on which he invokes the divine blessing. He receives in return all the milk yielded by the cows on the third day after their arrival on the summer pastures, and from it a cheese is made on each alp. On the second or third Sunday in September this cheese is carried by the master of the alp to Vissoye. All the masters assemble in front of the church, and when mass is ended they enter the building, twenty-five in number, in an orderly procession, each bearing his cheese on his shoulder or under his arm. He who has the largest (from the Alpe de Torrent, about 100 lbs. in weight) walks at the head, and the rest follow according to the size and weight of their cheeses, the smallest of which

weighs about 12 pounds. Entering the church by the south door they march past the altar, where they receive the curé's benediction; then leaving the church by the north door they proceed to the parsonage, and deposit their burdens in the curé's cellar. After this they go upstairs into the wainscotted and painted parlour, take their seats at the solid walnutwood table, and are regaled with fiery *Vin de Glacier* and with plenty of mutton, beef, and pork. Their dietary having been restricted for some time previously to the products of the dairy, they now fall to on these viands with an amazing appetite.

While in Upper Valais the business of the dairy is confided to the womenfolk, in the Val d'Anniviers and the other French districts of the canton we find only men and youths engaged in this occupation. On all the larger alps eight men are employed. The oldest and most trustworthy of these acts as overseer. He is known as the "maître," and it is his special business to make the cheese both from new and skimmed milk; he also has the control of the store-room. He is assisted by the "patro," who prepares the butter, and the "zeirack" or "zieger" from the butter-milk and skim-milk. Under these two is a third, the "amicij", whose duty it is to cleanse the utensils, bring fire-wood, &c. Then comes the cow-herd or "vigly", (really the second in rank), with a lad called the "pittovigly" as his assistant. Then follow the remaining three: the "mosonnie", who tends the younger cattle, the "bercier" or shepherd, and lastly the little "major" or swine-herd. They all have to give an account of their doings to the "procureur de la montagne", and are elected, like that official, for the term of one year by the commune to which the pasture belongs.

On the day before Michaelmas, and sometimes a few days earlier, the alpine pastures are left, and the cows brought back to their owners in the neighbourhood of the villages, after which the cheese, butter, and "zeirack" is distributed in proportion to the quantity of milk yielded by the cows belonging to each individual.

Meanwhile in the valley below the hay has been mown and carried, the beans, &c., harvested, and the winter crop of rye sown. Down in the valley of the Rhone the grapes are now ripe, and the Anniviards descend thither for the third time. In the German-speaking districts of the canton the grape harvest is made the occasion of great rejoicings, but here nothing of the kind takes place; the grapes are quietly gathered, and thrown into a large cask, and after a few days the must is drawn off and at once transported to the cellars in the valley.

By degrees the cows are brought down again to graze in the pastures by the Rhone, and they are accompanied as before by the entire population. But on St. Katharine's Day (November 25th) they all return, and the cows are installed in their winter quarters in the upper pastures of the valley. Now is the season of rest; but it is not of long duration. In the week before Candlemas (February 2nd) the descent to the villages in the valley begins, and a few weeks later the inhabitants of the Rhone Valley are made aware by the arrival of the Anniviards that spring has returned again.*

From the above description we see that dairying is the principal occupation of the Anniviards, and that they are compelled by circumstances to let the produce of their meadows be consumed on the spot; for if they were to carry the hay down to their villages, the yield of the loftier pastures would necessarily decrease, since it would be impossible to carry up again the required manure. At the same time we see how fatiguing are the labours undergone by these people. Owing to the topographical conditions of the valley, the inhabitants are compelled for the most part to carry on their own backs whatever they have to transport; and besides this there is the great distance between the different plots of land belonging to each peasant—from the loftiest Alps down to the level of the Rhone; so that it is clear that only an exceedingly industrious

* See H. Girard, *Geologische Wanderungen im Wallis etc.* Halle 1861.

and hardy population would be able to thrive under such circumstances. As already mentioned, they often travel from one of their little estates to another in the night-time; and the women share with the men in the most arduous field labour. Owing to their circumstances they are extremely frugal in their diet. As a rule they start off to their work before day-break, and do not get home again till late at night, so that they cannot take their meals warm. In this case their ordinary fare consists of rye bread, cheese, salt meat (dried in the air), and wine; and every family keeps stores of these provisions sufficient for years to come. At the beginning of winter enough cattle are killed to furnish meat for the entire year—in every household a cow, a few pigs, and several sheep or goats—and the bread is baked by the different families in succession, two or three times a year, in the public ovens. Neither butchers' nor bakers' shops are to be found in the valley.

The manners of the Anniviards are simple and earnest. At weddings there are no festivities of any kind. The marriage takes place in the church very early in the morning, before daybreak, and the only persons who attend the ceremony are the two witnesses. These, as well as the newly married couple, separate immediately afterwards, and go about their ordinary avocations.

Neither are christenings made the occasion of any rejoicings, further than that the two sponsors return after the baptism of their godchild to its parents' house to drink its health and to consume a local delicacy known as "raclette"—cheese toasted at a charcoal fire.

Of somewhat greater interest are the formalities at funerals. Upon the death of an adult, two members of the communal council, who have been designated for this office and who also act as treasurers for the commune, visit the house of mourning. It is their duty to make inquiries regarding the financial position of the deceased and of his heirs, the family's means of subsistence, the existence of a will, &c. At the close of this summary process the officials who have conducted it place

the communal house at the disposition of the relatives of the deceased, in order that they may there receive the mourners and hold the customary funeral feast. On the morning of the day on which the funeral is to take place the heirs and other relations of the deceased assemble here to partake of a breakfast consisting of bread and cheese and a glass of wine. This occupies from twenty to thirty minutes, and during this time the family affairs of the departed afford matter for discussion. At the appointed hour the other inhabitants of the village assemble, and proceed, with the corpse borne at their head, to join the party assembled in the communal house, the church bell tolling meanwhile.* The procession now moves forward and makes its way down to the parish church of Vissoye, which is several leagues distant from some of the villages. At the conclusion of the funeral service all who have been present return to the starting-point to partake of the funeral feast in the communal house. Bread and cheese and wine again compose the frugal repast; the wine and cheese have usually been made on the wedding-day of the deceased (or on the birth-day of minors), and have been carefully preserved for this purpose. The meal is soon over, and the guests return to their usual occupations, while the heirs and some of the elders of the commune, known as "hommes de serment," remain to receive the detailed report of the two above-mentioned members of the communal council. The necessary measures are at once taken to put in order the affairs of the family. Any disputes as to inheritance are finally settled at this time, and there is no instance known in which the advice of the "hommes de serment" was not followed, or in which law-suits have taken place on account of such matters. In case there are orphans of tender age to be provided for, they are as a rule put under the charge of the relative best able to care for them, without

* In former times (and occasionally also in the present day), a large can of wine was placed on the coffin, and as each mourner arrived he poured out a glass of wine and drank it off, after clinking the glass on the coffin and crying "Au revoir!"

régard to degrees of relationship. The guardians receive no remuneration for their trouble, and even the interest on any money belonging to the orphans is left untouched, and put by until they come of age. The existence of these usages since time immemorial certainly seems to prove that the interests of the parties concerned are well guarded by it.

Public affairs of every kind, such as the use of the Alpine pastures and of the forests, the maintenance of the churches and chapels (which are very numerous), the repairs of roads, paths, and water-conduits, and the improvement of these last, as well as all other public works, are without exception discussed and determined by the entire adult male population. It is the duty of all citizens to be present at these gatherings, which usually take place at Vissoye after Sunday morning service. As a rule the meetings are very noisy, and it often happens that the majority is found on the side of those who have opened their mouth the widest. A written protocol of the proceedings is seldom made; the decision of the majority is carried into effect by the communal council without further ceremony. This ancient hereditary right, by which every citizen is permitted to take part in and to discuss the business of the commune, is always respected by those in authority, however trifling may be the matter to be dealt with.

The public posts of honour all demand considerable self-sacrifice on the part of those called upon to fill them, there being for the most part no salary attached to them; the term of office varies, according to the nature of the duties, between one year and four years. And as all public works are executed by the combined labour of the citizens, the fortunate dwellers in the Val d'Anniviers enjoy the advantage of having no rates of any kind to pay.

Both in the communal house and in the church the magistrates have their seats of honour, and on the occasion of civil and ecclesiastical ceremonies they wear the large black cloak known as "manteau de cérémonie," while the beadle wears one of scarlet cloth adorned with the arms of the val-

ley. When a magistrate dies, all his colleagues appear at the funeral in their long mantles, with the beadle at their head, to pay the last honours to the departed.

These austere, industrious, simple, and pious mountaineers well deserve our full esteem and even our admiration, especially in the present day, when such dreadful misery often prevails in the wealthy districts where the modern industrial system flourishes.

How happy, on the other hand, are the poor herdsmen of the secluded Val d'Anniviers, where all labour and pray, and all possess the necessaries of life, and where if there are no millionaires, neither are there any paupers!

Excursions in the Environs of Vissoye.

Vissoye affords the tourist abundant opportunities for enjoyable walks and longer or shorter excursions. Those interested in the people themselves, and in their ways and habits, will do well to visit the surrounding villages and hamlets: Combaz, Quimet, Mission, Ayer, Mayeux, Painsec, St. Jean, and Grimenz; while those who prefer solitude can turn their steps to the deliciously fragrant woods, which here consist chiefly of coniferous trees such as the fir and larch. The air in these forests is delightfully cool, especially on the borders of the torrents; as for instance at the upper or southern end of Vissoye, near the picturesquely situated saw-mills*, and above them.

Of similar character, but much more interesting, is the excursion to the waterfalls of Grougé.

In order to reach the **Cascades de Grougé** we must first make our way to the village of *Mission*** , a mile and

* In this locality, close to the path, stands a fine specimen of the extremely rare *Rosa stenosepala*, Christ, and here and there the true *Hieracium Zizianum*, Tausch, may be found.

** The historian Furrer narrates the following tradition in connection with this village: "The first inhabitants of the Eifischthal were Hunnish

a half distant from Vissoye, and then descend to the bridge near the mill. Crossing the bridge, we climb the somewhat steep ascent to the magnificent double fall of the impetuous glacier torrent, which is known in the locality simply as "*le Torrent*," and which descends from the Glacier de Moiry. Here in the forest-shade the pious Anniviards have built a little oratory, mindful perhaps of the words of the royal psalmist: "He sendeth forth springs into the valleys; they run among the mountains; they give drink to every beast of the field; by them the fowl of the heaven have their habitation, they sing among the branches." (Ps. 104.)

There is no necessity to return by the same route we came. From here we can ascend by a steep path to a water-conduit, follow it for a time towards the west, and then cross the Grimenz bridge. From *Grimenz* (where we can obtain an excellent glass of the celebrated *Vin du Glacier* of Mr. Rouaz) the way back to Vissoye leads through *St. Jean*. Following the above-mentioned water-conduit eastward brings us to Ayer or to the road to Zinal.

Another favourite walk of visitors staying at Vissoye is the somewhat longer one to **Vercorin**,—a name already familiar to us. It is advisable to start quite early in the morning and to take the necessary provisions, since one cannot always depend upon finding anyone at Vercorin. It is about three hours walk each way.

Somewhat further, but not more fatiguing, and in many respects still more enjoyable, is the excursion to the **Glacier**

soldiers, who had fled from Italy after Attila's death in 453 and found a safe asylum here. For a long time they lived without intercourse with the rest of Valais, in a very primitive, not to say savage state. Not until long afterwards did the bishops of Sion send Christian missionaries to this horde of heathens, who had now increased considerably in numbers, and who refused for a long time to accept the new teaching. In the eleventh century two princes named Eberhard and Aimo began the work of conversion. One of the remotest villages of this valley is known as *Mission*, it is believed in commemoration of the sojourn and the labours of those who had undertaken the pious enterprise."

de Moiry. Following the road through the valley as far as Grimenz, we then direct our steps either to the châteaux of *Torrent* or to those of *Châteaupré*. During the summer months we may depend upon being hospitably received by the herdsmen at either of these places; they are allowed to supply strangers with milk and other Alpine delicacies at a moderate charge.

The back part of the valley through which the magnificent *Glacier de Moiry* descends is enclosed and dominated by a ring of lofty mountains: *Couronne de Bréonna*, *Za de l'Ano*, *Pointe de Bricolla*, *Grand Cornier*, *Bouquetin*, *Pigno de l'Alée*, and *Garde de Bordon*. The *Grand Cornier* is beyond doubt the most striking feature of this superb prospect.

Another favourite tour, the ascent of the **Corne de Sorebois** (9209 feet) again leads us to the pastures or alp of *Châteaupré*. From here we ascend in two hours to the *Col de Sorebois*, and in one hour more to the summit, which affords a wonderful view of the mountains in the rear of the two glacier-filled valleys of Moiry and Zinal, as well as in the opposite direction. A good footpath leads down to the little Alpine village of Zinal.

Just as Zermatt has its Gornergrat, Goms its Eggishorn, the Baths of Leuk their Torrenthorn, the Turtmanthal its Schwarzhorn, and St. Luc its Bella-Tola, so too Vissoye has a "Rigi" of its own, a mountain commanding a panorama of the first rank and forming a centre of attraction to visitors. We refer to the **Becs de Bosson**, rising in two bold rocky peaks to an altitude of 10,022 and 10,367 feet respectively above the sea-level, and to about 1300 feet above the *Pas de Lonaz*. A considerable part of the ascent, to some distance above the *Alpe Bendella*, can be made on horseback, so that there is only an hour's climbing to be done. At one point the way is somewhat unpleasant, and demands the exercise of caution, but the spot in question is passed without difficulty with the aid of a ladder. From Vissoye the summit may be reached in six or seven hours, by way of Grimenz and the

Alpe Bendella. In returning, the way over the *Pas de Lonaz* may be chosen. The panorama from the Becs de Bosson is no less grand than that from the Bella-Tola, the Schwarzhorn, or the Sasseneire; but although these four mountains are in proximity to each other, and not unlike as regards position, each one of them has peculiar charms which amply repay the tourist for the trouble of ascending the several peaks.

Before leaving Vissoye it remains to mention the mountain-passes leading over into the valley of *Evolena*. The best known of these passes is the **Col de Torrent**, which the tourist can cross, if he pleases, on the back of a mule, so free it is from difficulties. The distances (in time) are as follows: To *Grimenz* 1 hour, to the *Alpe de Torrent* (7939 feet) 1½ hours, to the little Alpine lake, the *Lac de Zosane*, (8871 feet) 1 hour, and to the summit of the pass (9593 feet) 1 hour more. Even here the prospect unfolded to us is very striking; but from the summit of the **Sasseneire** (10,675 feet), which may be easily climbed in another hour, the view is far more extensive, and compares well with that from the Bella-Tola; many indeed give it the preference, as we are here nearer to the heart of the mountains. Tschudi's *Guide* says: "Magnificent view of the Mont Blanc chain, the stupendous Bernese Alps, the Ferpècle Glacier, and especially of the icy pyramid of the Dent Blanche." From the summit of the pass we can descend in four hours to *Evolena*, over the *Alpe Cotter*, and through the mountain hamlets of *Villa* and *La Sage*; or the last-named may be avoided if desired.

To the north of the Col de Torrent lies the **Pas de Lonaz** (9022 feet), leading to *Evolena* in 9 hours; and to the south of it there are the following passes also leading to the same place: the **Col de Zaté** (9432 feet) and the **Col de Bréonna** (9573 feet). But these are less interesting than the Col de Torrent, and moreover must not be attempted without the assistance of experienced guides. The same holds good with respect to the lofty peaks of this chain, the *Za de l'Ano*,

Pointe de Bricollaz, and *Grand Cornier*. The last-named, and the glacier pass below it, the **Col de Moiry** (between points 3570 and 3663 on Dufour's map) are more easily ascended from the Val de Zinal.

For information regarding the remaining excursions which might be undertaken from here (Illhorn, Ill Pass, Ill-See, Bella-Tola, Meiden Passes, and the lofty passes leading to Zermatt, &c., we must refer the reader to the following sections devoted to *St. Luc* and *Zinal*.





St. Luc.

IN the descent from the Col de Torrent towards Grimenz the tourist sees a small village glittering in the sunshine on the opposite mountain-slope. It has much the aspect of an Oriental village, and were it not for the snowy Alps by which we are surrounded, we might fancy ourselves transported to the East. All the mountain villages of Valais have a local colouring, a peculiar tone produced by the weather-stained timber cottages; we are therefore not a little surprised to meet with a mountain village built entirely of stone, and that at so considerable an elevation—5500 feet above the sea. There is a reason for this architectural peculiarity; it lies in the fact that no less than three times within the present century this little Alpine village has fallen a prey to the flames, and always at a period when most of the villagers were occupied on their farms in the valley of the Rhone. Near the venerable communal house stands a high wooden cross. The last conflagration extended as far as here, and both the cross and the adjacent building were already attacked; but the wind suddenly changing, the villagers succeeded in getting the mastery over the fire.

The stateliest house in the midst of the village, next to the church, is the ancient inn belonging to Mr. P. Pont. But two years ago he left it and built a larger and more comfortable hotel outside the village, in an open and wonderfully fine situation. The lofty summits of *Le Blanc*, *Lo Besso*,



View in St. Luc.

Gabelhorn, and Pointe de Zinal are seen rising in the rear of the Val de

Zinal, while above the Durand Glacier towers the black rocky pyramid of the *Matterhorn*. The steep, dark, and for the most part wooded mountains in the middle distance form a pleasing framework to this enchanting picture, which is so beautiful that one never wearies of gazing at it; the landscape constantly assumes new shades of colour, varying with the time of day and the state of the atmosphere. Then there is the idyllic silence which prevails here, the bracing mountain air, the deliciously cool water from the springs

trickling down the mountain-side, and to crown all the excellent *Vin de Glacier*,— so that we need not wonder that the *Bella-Tola Hotel* is thronged year by year with visitors.

Among the numerous excursions for which St. Luc forms an advantageous starting-point we may mention the following:

1. **Bella-Tola** (10,137 feet). In spite of its considerable height this mountain is very easy of ascent, and owing to its commanding situation it has long been celebrated, and has become a favourite with tourists. The Alpine engineer and geologist *Gerlach* was the first to call attention to the Bella-Tola, and he it was who induced a native artist, *Mr. R. Ritz*, to delineate the panorama from it. In 1858, (early in which year the last and greatest conflagration destroyed St. Luc), *Mr. Ritz* undertook the work, and, in spite of the unfavourable weather with which he had to contend, finished a very detailed drawing containing more than 200 names. Unfortunately the work is out of print, but tourists can borrow a copy from *Mr. Pont* for the occasion of the ascent. Later on *Mr. E. Griolet*, of Geneva, did everything possible in order to make the Val d'Anniviers, and especially *his* Bella-Tola, more widely known. He built himself a house at St. Luc, and frequently invited his friends and fellow-members of the Alpine Club to stay with him there. He even gave a magnificent fête, embracing a bivouac on the summit of the Bella-Tola, to the entire Swiss Alpine Club. In consideration of these endeavours the people of St. Luc made him a present of the summit of the Bella-Tola and conferred upon him the rights of a citizen of their valley. Both he and his daughters were accustomed to wear the costume of the district while residing in it.

From St. Luc the ascent occupies 3¹/₂ hours, and the greater part of the way (to within 45 minutes of the summit) can be made on horseback. Ten minutes below the summit stands the shelter-house built by *Mr. Griolet*, and from it a

path* leads over to the **Pas du Bœuf**, for tourists desiring to cross over into the Turtmanthal (see page 400).

Somewhat further to the south lie the two **Meiden Passes**, which are frequently crossed, but which have been noticed above (see under "Turtmanthal").

We therefore now turn our steps to the **Pointe de Tounot** (9921 feet), rising steeply to the south of the Meiden Passes. In order to reach the top of it we ascend from St. Luc to the pastures of *Combaz-verte* and the still loftier châteaux of *Tounot*. Then attacking the rocky pyramid on its southern side, the summit is reached without incurring danger. In the crevices the *edelweiss* flourishes, and from the summit of this mountain the Weisshorn is said to be seen to the best advantage. This ascent occupies four hours; but from the Weisshorn Hotel on the Têtaz-Fayaz** only half this time is required.

Between the *Pointe de Tounot* and the *Têtaz-Fayaz* a wild upland valley stretches southwards, between the *Pointe de Nava* and the *Roc de Budry* as far as the Col de la Forcletta (9809 feet). The entire area has been as it were swept and polished by a former glacier, but few Alpine plants have been able to find a foothold in the crevices of the smooth rocks, and the entire district bears the impress of lifelessness and desolation. So much the more agreeably are we surprised by the magnificent view which opens at the summit of the pass. The further extremity of the valleys of Turtman and Zinal, with their glaciers and snow-fields, lies before us, and at no great distance. For this excursion a whole day is required, especially if the tourist desires to pro-

* From the top of the Bella-Tola there is a way leading direct through the Meretschithal to the railway station of Susten in the valley of the Rhone.

** The most popular ascents from the *Weisshorn Hotel* on the Têtaz-Fayaz are the following: Bella-Tola, Tounot, Meiden Passes, Pas de Forcletta, Turtman Glacier, and Pointe de Nava.

ceed as far as the Turtman Glacier. Mules can be employed for the entire distance.

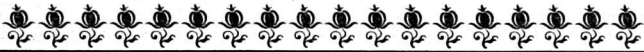
The ascent of the **Illhorn** (8936 feet) is undeniably the finest tour that can be undertaken from St. Luc, and strange to say it is the least known of all. Nothing can be more enjoyable than the walk through the magnificent forest to *Chandolin*. For a full hour the well made path leads through the forest at the same level, and only during the last half hour does the ascent to Chandolin become somewhat steeper.* Beyond the village the view increases in extent and grandeur with every step we take; passing some herdsmen's huts we gradually ascend the gentle grassy slope, and reach the summit in a little more than two hours. We have scarcely been aware that we were ascending, and suddenly we find ourselves on the verge of the deep chasm of the Illgraben; a dreadful abyss yawns beneath us, and we hesitate to take another step forward lest we should fall over this dreadful precipice, a sheer wall of yellowish-gray rock more than 6000 feet in height! This is indeed one of the most terrific sights in the Alps — a scene of perpetual desolation! Not a tree, not a blade of grass can take root in all the length and breadth of the Illgraben. Far down to the right, in pleasing contrast, glistens the azure surface of the *Ill-See*, and below it stretches a verdant dale through which the silvery *Illbach* meanders. Still lower down, half hidden in the thin blue haze, trains are seen from time to time creeping slowly along by the side of the Rhone, past towns diminished to the size of mole-hills. And round us on the horizon is a countless host of Titans, impregnable in their panoply of ice, and armed with the avalanche as with a thunder-bolt.

To Chandolin we shall not return; the lake and the green valley are too enticing. We follow without difficulty the

* The Kalvarienberg, an eminence near the village, affords an interesting view; others visit the Eboulements de l'Illgraben, 45 minutes from here; entomologists will find many treasures on the Plaine de Ste. Madeleine, in the vicinity of the chalets of Prasmarin and Ponchette.

eastern ridge of the Illgraben as far as the depression of the **Illsee Pass** (Point 2485 on Dufour's map). Only once in our rapid course we pause, surprised to discover on the meagre grassy patches one of the rarest denizens of the high Alps, the pretty little *Potentilla nivea*, L., which we have hitherto found only in the valleys of the Vispe. And now on to the lake and, after a refreshing plunge in its cool waters, down through the *Illthal*. The herdsmen in the chalets willingly give us a draught of milk, and direct us into the right path. In the forest further down we stop to collect a few more rare plants — *Aquilegia alpina*, *Geranium aconitifolium*, &c., — and to deck our hat with the last alpenroses. And in three hours after leaving the summit of the mountain we have reached the railway station at **Susten**.





Zinal.

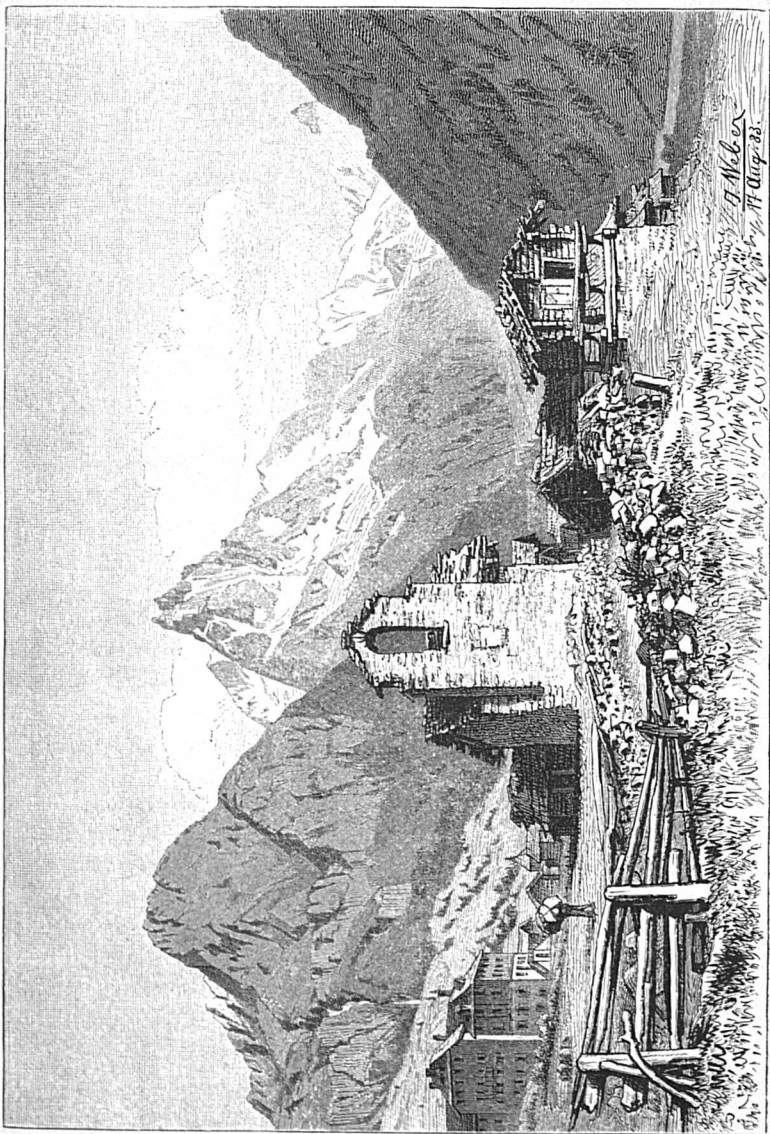
“Zinal forms the best head-quarters for longer or shorter excursions among these grand Alpine valleys.”

(Tschudi's *Tourist in Switzerland*.)

THE way commonly taken leads from Vissoye through the villages of Combaz, Quimet, Mission, and Ayer (to Ayer in 1 hour, and from there 2 hours); but visitors staying at St. Luc need not descend to Vissoye, but can reach Ayer in one hour by a level and shady path.

Beyond Ayer the path ascends somewhat and crosses the scene of a landslide, in the midst of which lie the now abandoned nickel mines of *Bourimont*; after half an hour's walk we cross the Navigence for the first time by the *Pont du Bois*, and after the lapse of a like interval recross it by the *Pont du Pras Long*, not far from a chapel. Between the two bridges we have to traverse a forest, in the shade of which the trailing *Linnæa borealis* grows. Beyond the *Pont du Pras* we keep to the right bank of the Navigence, and reach after three-quarters of an hour the prettily situated Alpine village of **Zinal** (5505 feet).

The *Hôtel Durand* was considerably enlarged a few years ago, but still retains its homely and comfortable character; and the landlady, Madame Epiney, endeavours to entertain her guests as well and cheaply as may be. A fine dining room, parlours, and 53 bed-rooms with 70 beds are now prepared in the deep recesses of the Val d'Anniviers—a valley the very name of which was almost unknown until comparatively a short time ago—for the reception of tourists from every part of the globe.



Zinal, Anniviers-Valley.

Having already described the main features of this interesting glen, it only remains to enumerate briefly the favourite excursions.

Most of them can only be undertaken with the assistance of experienced guides. The following list includes all the guides licensed by the cantonal authorities: A. Antille, of Vissoye; T. Savioz, of Grimentz; J. Pont, of St. Luc; E. Cotter, J. Monnet, E. Peter, J. Peter, and Thomas Savioz, of Ayer.

Garde de Bordon (9209 feet), interesting, and not difficult.

Alpe de l'Allée (6174 feet) and **Alpe de l'Arpitetta** (7417 feet). The most frequented and most interesting points in the valley, only two or three hours from Zinal, and offering no difficulty. Milk is obtainable in the châteaux. On the Alpe de l'Arpitetta we have the huge pyramid of the *Weisshorn* immediately before us, and we overlook the elongated, tongue-like *Durand* or *Zinal Glacier* stretched at its foot, as well as a great part of the spacious glacial basin intersected by *Lo Besso*, with all the lofty peaks surrounding it. Only the Zinal Glacier is in part concealed. On the Alpe de l'Allée, on the other hand, we are more distant from the Weisshorn, but the general view is more complete, the Zinal Glacier being visible almost in its full extent; but it is difficult to decide which of these two points deserves the preference.

The **Cabane on the Mountet** (9475 feet). Beyond the upper châteaux of the Alpe de l'Allée (7178 feet) we soon reach the glacier, the middle of which we traverse for full two hours till we come to the southern base of *Lo Besso*, where the *cabane* occupies a sheltered position on a rocky plateau (about 5 hours from the hotel). The plateau is surrounded by glaciers and snowfields, and a splendid belt of mountains, "*La Grande Couronne*," forms as it were a colonnade around this sublime temple of Solitude. The following are the names of the mountains composing this superb chain: *Grand Cornier*, *Dent Blanche*, *Pointe de Zinal*, *Mont Durand*, *Gabelhorn*, *Triethorn*, and *Rothhorn*.

The following verses were written by Mr. L. L. von Roten on the occasion of the inauguration of the Cabane on the Mountet, July 23, 1872 :

The glacier slumbers in its rocky bed,
And silence as of midnight reigns around,
Save when from craggy cliff or mountain-head
A sudden tumult wakes the vast profound,—
The avalanche sweeps wildly by,
And sings the glacier's lullaby.

The mountain-peaks in stately circle wait,
Like some proud monarch's lordly retinue,
Bearing aloft a canopy of state,
A gem-bespangled tent of deepest blue.
O'er all this scene, so still, so vast,
The moon her silvery light doth cast.

In silent meditation thus it lies,
While night's refreshing breezes o'er it sweep,
And all the starry eyelets of the skies
As faithful sentinels their watches keep;
Only at intervals a tone
Is heard, that seems a hollow moan.

So lies the glacier in the place assigned
By nature, like some mighty frozen stream;
Heedless of flashing skies and blustering wind,
It dreams in peace its tranquil, blissful dream—
Of herdsmen's life on Alpine heights,
Of heroes' deeds in freedom's fights.

The torrent welling from that icy breast,
Leaping in thunder down the rock-strewn slopes,
Battles its way towards the far-off West,
Imparts to distant lands its dawning hopes,
And whispers to the foaming sea
The glacier's dream of liberty.

So spread the happy tidings far and near;
Like some bright fairy tale that poets sing,
To men whose cheerless lives are blank and drear
New springs of action and new joy they bring;
The eager listeners hear a voice
That bids their downcast heart rejoice.

Soon with resistless force are swept aside
Who fain would freedom's progress yet delay,
And that glad voice, resounding far and wide,
Proclaims of liberty the dawning day,
Whose splendour now the highlands tints,
And in bright hues the future paints.

And—as from out the glacier's deep recess—
That once shall brighten to full light of day
(Although by strife aroused and by distress)
Which in the morning-red long hidden lay,
Till triumphs, to the furthest North,
What in that dream was shadowed forth.

The Cabane not only serves as a halting-place over night for those climbing the above-mentioned mountains, (even the *Dent Blanche* has been successfully attempted from here), but also for the excursionist crossing one or other of the glacier passes which converge here:

The **Triftjoch**, which necessitates some very bold climbing; the **Col de Durand**, perhaps the finest glacier pass in the Alps; the **Col de la Dent Blanche**, which, though offering many difficulties, is extremely interesting; and the **Col de Mountet** to the south of the Rothhorn; the last-named, though perhaps not the most difficult, was the last to be discovered of these lofty passes.

The **Momming Pass**, between the Rothhorn and the Schallhorn, and the **Schalljoch** between the latter and the Weisshorn, are equal in grandeur to the above-mentioned, but may also be crossed from the Alpe Arpitetta.

New passes or new routes for the ascent of the highest summits are discovered every year; so that amateur mountaineers anxious to render their names famous in the annals of the Alpine Clubs by the accomplishment of daring exploits, cannot do better than take up their quarters at Zinal and engage the services of the sturdy and skilful guides of the Val d'Annivjers.





SIERRANE
 UND
DER WILDSTRUBEL

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