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The Alpine Guide

Ball, John

London, 1898

ETH-Bibliothek Zürich

Shelf Mark: Rar 3095

Persistent Link: <https://doi.org/10.3931/e-rara-18327>

Section 20. Monte Rosa district.

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which feeds this gl. is quite invisible from the valley. It is, however, of great extent, and is supported on the E. by a line of tremendous cliffs, the *Freiwänge*, through a comparatively narrow opening in which the glacier proper finds its way towards the valley. The natural result of this arrangement, combined with the great steepness of the ground, is that from top to bottom the glacier is a continued icefall, of a more than usually broken character.

Under favourable conditions, especially in a snowy year, this icefall can be forced. But it is generally better to climb the rock wall of the *Freiwänge*, which can be done in 40 min., if the right way be hit off, the rocks being very steep but good.

From the field of *névé* above them the *Weisshorn* (4,512 m., 14,804 ft.) was ascended twice in 1871 by way of its steep N.E. snow and ice face and the N. arête. 9 hrs. at least are required from a bivouac on the hillock called *Kastel*, 3 hrs. above Randa.]

‘Crossing the field of *névé*, we reached the Col without further difficulty in 25 min., or $6\frac{3}{4}$ hrs. from Randa. The Col (3,549 m., 11,644 ft.), on which there is often a little frozen lake, lies between the *Brunnegghorn* and the *Bieshorn* (4,161 m., 13,652 ft.), and looks N. and S.’ It is better to commence the descent from a point rather E. of the pass, to avoid an ice slope, the descent of which took Mr. Moore’s party $1\frac{1}{4}$ hr. ‘We then traversed the whole length of the upper part of the great *Turtmann* gl. without encountering the slightest difficulty, the inclination throughout being very gentle, while scarcely a crevasse is seen. In a little more than an hour we left the glacier for the rocks on the r. bank, in order to avoid a slight icefall; but, after a steepish descent down a narrow gully in the rocks, took to it again for 30 min., and traversed it for 30 min. more, when we finally quitted it on its r. bank, slightly above its termination, and took to a slight

sheep track which led us to the head of the *Turtmann* valley. Crossing to the l. bank of the torrent, to avoid a sudden fall in the ground on the other side, we returned to the r. bank at *Plumatt*, and reached Gruben in $1\frac{1}{2}$ hr. from the time of leaving the gl., $4\frac{3}{4}$ hrs. from the Col, or $11\frac{1}{2}$ hrs. (including halts) from Randa’ (A. W. M., revised). It is better to quit the gl. on its l. bank, and to follow that bank of the stream to the inn opposite Gruben. The *Brunnegghorn* (3,846 m., 12,619 ft.) may be reached in a short hour from the *Biesjoch*, by a broad snow arête with a cornice. It commands a superb view, especially of the *Weisshorn* and the *Mischabelhörner*, and no one crossing the pass in fine weather should omit to make this short *détour*.

SECTION 20.

MONTE ROSA DISTRICT.

IN describing the range of *Mont Blanc* (§ 16) it was seen that that mountain, with its attendant peaks, is naturally limited by two deep trenches, parallel to the direction of the range, and by well-defined passes which mark an orographic separation between it and the adjoining mountain groups. No such arrangement is found in the great mass which is included in the present Section.

The central range of *Monte Rosa*, which appears to originate in the intersection of two axes of elevation, throws out a number of ridges that radiate afar, and gradually subside into the plain of N. Italy, covering an area much larger than that of most of the other districts described in this work. No convenient mode of subdividing it has, however, been suggested, and we propose to include, along with the central mass, the range of the *Saasgrat* to the N., and the minor ranges to the S. and E.

that enclose the so-called Italian valleys of Monte Rosa. The natural limits of the district are, therefore, defined, on the N. side, by the two branches of the Visp torrent. Following the W. branch through the Zermatt valley, crossing the St. Théodule, descending by the Val Tournanche to Châtillon, and following the Dora Baltea to Ivrea, the line passes round the base of the foot hills to Arona: it then passes along the W. shore of the Lago Maggiore, and up the Tosa valley to Piedimulera, whence it ascends the Val Anzasca to Macugnaga, and crossing the Monte Moro to Saas completes the long circuit by descending the Saas valley to Stalden. Within the line so traced, exceeding 300 m. in length, all the ranges properly belonging to this group are included, with the addition of the Matterhorn, the famous peak which takes its name from the village of Zermatt, at its foot, now the chief centre of the entire district, largely owing to the fame and magnificence of its great peak.

It cannot fail to strike the reader who examines a map of this district that the direction of the ranges and of the depressions offers a marked contrast to that prevailing throughout the adjoining regions of the Alps. Save in a small part of the Italian valleys, the direction here is either parallel or perpendicular to the meridian. The mass of Monte Rosa itself (although its actual highest point is not at the intersection of the two ranges to be named, but rises somewhat to the N., where the N. and S. range is intersected by a short transverse rib, parallel to the main E. and W. range) is best considered as the intersection of a great N. and S. ridge (extending from the Balfrin through the Saasgrat, most of the highest peaks of Monte Rosa, the Vincent Pyramide, and the range on the E. of the Val de Lys nearly to Ivrea) with the transverse range lying between the Dent d'Hérens and the Pizzo Bianco, near Macugnaga. It

is worthy of remark that all the minor ridges on the N. side of the political frontier are parallel to the latter range; it is sufficient to point out the corresponding depressions occupied by the glaciers of Gorner, Findelen, Mellichen, Kien, &c.

Although the peak of Mont Blanc overtops by over 500 ft. any peak in the Monte Rosa range, yet the average height of the latter range greatly exceeds that of its western rival; for the three highest summits of Monte Rosa surpass 15,000 ft., and three others lie between 14,000 and 15,000 ft., while within the same limits are the four highest summits of the Saasgrat and the Lyskamm, in addition to the neighbouring summits of the Weisshorn, the Matterhorn, and the Dent Blanche. The same inference may be drawn from a comparison of the passes, for, with one or two exceptions, all the highest passes yet effected in the Alps cross the ridges of the Monte Rosa group.

It is the opinion of many of the most competent judges that for grandeur, beauty, and variety the valleys descending from Monte Rosa are entitled to pre-eminence over every other portion of the Alps, and, perhaps, if we regard the union of those three elements, over every other mountain region in the world. Nature is inexhaustible in the combination of her attractions, and certainly there are many other scenes in the Alps which may challenge comparison with whatever is most grand and most beautiful; but one who would learn thoroughly to enjoy Nature in those aspects cannot do better than give ample time to the exploration of the district included in this Section. After spending some weeks amid the sterner scenery of Zermatt and Saas, he will find fresh loveliness in the marvellous contrasts that abound in the valleys on the Italian side. A summer's tour devoted to this district, wherein days of exertion, spent in gaining the higher peaks, are made to alternate with days of repose, which need not

here be idleness, will certainly not exhaust the beauties of the country, and will probably leave deeper impressions than a rapid excursion extending over a considerable part of the Alps.

Good accommodation is now found everywhere on the Swiss side, particularly at Zermatt, on the Riffel, at Saas Grund, and at Saas Fee. On the Italian side the same is true of the most attractive headquarters—Breuil, Gressoney, Alagna, and Macugnaga, while the mountain inns at Fiéry and on the Col d'Olen are supplemented by many good Club huts. Among the Italian foot hills, too, the traveller will find good quarters, as at Fobello, Varallo, Ponte Grande, and in the environs of Biella. The mountaineer will, of course, not fail to provide himself with Sir Martin Conway's indispensable 'Central Pennine Alps' and 'Eastern Pennine Alps' (issued in 1890-1 in the 'Climbers' Guides' Series), while Part 2 of volume ii. (1896) of Signori Martelli, Bobba, and Vaccarone's capital 'Guida delle Alpi Occidentali' is useful for the Italian side. For the southern valleys of Monte Rosa Mr. S. W. King's charming 'Italian Valleys of the Pennine Alps' (1858) may still be consulted, while the following Italian local guide books contain much interesting information: Brusoni's 'Guida alle Alpi Centrali Italiani,' vol. i. (Domodossola, 1892), Ratti and Casanova's 'Guida Illustrata della Valle d'Aosta' (3rd edition, Turin, 1893), Tonetti's 'Guida Illustrata della Valsesia e del Monte Rosa' (Varallo, 1891), and Pertusi and Ratti's 'Guida pel villeggiante nel Biellese' (2nd edition, Turin, 1887). The beautifully illustrated work of Signori V. Sella and D. Vallino, entitled 'Monte Rosa e Gressoney' (1890), cannot be too highly recommended.

In addition to the attractions of magnificent scenery some of the valleys described below are otherwise most interesting. The Zermatt valley

was known to botanists and geologists long before it was discovered by holiday tourists, while it has an instructive local history of over 600 years (see the account in Mr. Coolidge's 'Swiss Travel and Swiss Guide Books,' 1889), particularly from the fact that the original Romance-speaking inhabitants gave way in the fifteenth century to a German-speaking population from the Upper Vallais, though some of the old place names still survive under a Teutonic veneer. On the other hand, about 1250, the Saas valley was colonised by Italian-speaking men from the Val Anzasca, while rather later some of the German-speaking inhabitants of the lower part of the Saas valley settled at Macugnaga, the effect on the local names being an interesting parallel and contrast to what happened in the Zermatt valley. In the thirteenth century, too, a German-speaking colony is found at the head of the Val de Lys, probably brought there in the twelfth century over the St. Théodule by the lord of that territory, the bishop of Sion, while it was this colony which probably sent out offshoots to Alagna and Rima, though possibly these are due to the energy of the Counts of Biandrate, who were the promoters of the Saas and Macugnaga colonies. The historical importance of the Théodule and the Monte Moro therefore deserves to be studied more carefully than has hitherto been the case, while the glacier and minor passes should not be overlooked, especially those leading over from the Saas to the Antrona valley. The historian, the philologist, and the ethnologist will thus find much to interest them in the wide area now to be described in detail.

ROUTE A.

VISP TO ZERMATT. EXCURSIONS AND ASCENTS FROM ZERMATT.

	M.
Stalden	4½
Kalpètran	6½
St. Niklaus	10
Herbrigen	13¾
Randa	16
Täsch	18¼
Zermatt	22

Narrow-gauge rly. in about 2½ hrs. 4 trains a day each way.

For many years Zermatt was only accessible (save by glacier passes) by means of a mule path to St. Niklaus, and then by a char road for the rest of the way. But the opening of the railway in 1891 has rendered it possible to gain Zermatt in about 36 hrs. from London direct.

The line on leaving the Visp station (660 m., 2,165 ft.) makes a great curve and passes beneath the town in order to mount along the r. bank of the Visp, here running in a broad, stony bed. Some way beyond the picturesque old *Neubrücke*, over which passes the mule path, the line crosses the stream and mounts steeply to the station of **Stalden** (803 m., 2,635 ft.), which is S. of the village. (For the route hence to Saas see Rte. N. below, and for the Bistenen pass over to the Simplon, § 21. Rte. A.) Stalden stands at the junction of the two branches of the Visp, flowing from the Zermatt and Saas glens respectively. On the way up from Visp to Stalden the vines, which produce fair wine, and the wild flowers announce a climate contrasting strongly with the region of ice and snow in which both branches of the valley terminate. Among the wild plants are several scarce species—*Astragalus excapus*, *Xeranthemum inapertum*, *Achillea nobilis*, and *A. tomentosa*, &c. The mountains rise steeply, and the snowy peak of the *Balfrin* (3,802 m., 12,474 ft.), properly Balenfirn, standing in the fork of the valley, is the first example of that beautiful pyramidal form which

prevails among the surrounding peaks.

After a short ascent the line passes nearly at a level at a great height above the l. bank of the Visp, traversing several tunnels and the imposing viaduct of *Mühlebach*, nearly 150 ft. above the ravine. It attains the level of the valley again beyond **Kalpètran** station, and immediately after crosses to the r. bank. Now follows the most picturesque portion of the route; the line keeps close to the stream and traverses some very striking gorges, in which the Visp makes many fine waterfalls. The stream is crossed once more, and another ascent leads to the green basin in which is the chief hamlet of the valley,

St. Niklaus (the station is 1,130 m., 3,708 ft.) (For the routes to Gruben see § 19. Rte. M, and for those to Saas Rte. P. below.)

[An excursion may be made hence in 2 hrs. to the village of *Grächen*, on the E. side of the valley, and to the *Hannig Alp*, above it, immediately overlooking the junction of the two valleys and commanding a distant view of the Bernese Alps. Grächen was the birth-place of the sixteenth-century Swiss Humanist Thomas Platter, who in his autobiography has given an interesting sketch of his early life in his native valley; the house in which he was born is still shown.]

St. Niklaus and the neighbouring hamlets suffered severely in 1855 from repeated shocks of earthquake, which were felt to a less extent in the adjoining districts, but whose force was mainly expended throughout the few miles between this place and Visp. Forty-nine shocks were counted, and slighter disturbances were renewed in the course of the three or four following years. Scarcely a house in the village escaped serious injury, and many were destroyed.

Above St. Niklaus the scenery increases in grandeur. The rocky walls on either side become higher

and steeper, and the valley is contracted to a trench, 2 miles in depth, between the opposite peaks of the Mischabelhörner and the Weissshorn. The line crosses to the r. bank in order to gain the station of **Herbrigen** (1,257 m., 4,124 ft.), and a further ascent leads to that of **Randa** (1,409 m., 4,623 ft.) Hitherto glimpses of the Brunegghorn (often taken for the Weissshorn) and of the Breithorn, at the head of the valley, have been gained, but at Randa the traveller finds himself close to the world of ice. The village stands on rising ground, a mud avalanche fan, opposite the small *Bies* gl., which streams down from the Weissshorn, but now ends at a great height above the valley. In 1636, according to the perhaps exaggerated records of the time, the entire gl. fell into the valley, spreading fearful havoc before it. Again, in December 1819, a considerable mass was detached, and, though it fell a little on one side of the village, was powerful enough to level most of the houses; it is said that solid beams and roofs were blown away like straw to the distance of a mile from their former site. A barrier formed across the river threatened to renew here the disaster of the preceding year in the Val de Bagnes (§ 18. Rte. E); but some brave men of the valley, working at the peril of their lives, succeeded in cutting an opening for the waters. Other similar falls, on a smaller scale, occurred in January 1848 and in February 1865, the noteworthy fact being that all these took place in winter. (For the passes to Gruben see § 19. Rte. M, and for the ascents to be made from Randa see under Zermatt, below.) Above Randa the valley is nearly level for 2 or 3 miles. A short distance beyond the village is the torrent from the *Kien* gl., on the E., and near at hand the remains of a bergfall which is said to have overwhelmed a village and all its inhabitants. In the green basin or plain of **Täsch** (1,441 m., 4,728 ft.),

seemingly the filled-up site of an ancient lake, the line runs along the dyke built to protect the valley against the ravages of the torrent, and extended in order to bear the railway too. A short distance beyond Täsch the line crosses for the last time to the l. bank of the torrent, and is carried along the side of a narrow gorge high above the roaring torrent. A sudden first glimpse of the Matterhorn is caught, and then a short tunnel through a rocky buttress leads to the green basin of **Zermatt**, the station being at the N. end of the village, both dominated by the Matterhorn. However long a traveller may remain at Zermatt, or however often he may return hither, the overpowering grandeur of that mavelous peak must continue to fascinate his eyes, and the problem of its origin and history to occupy his mind, even though he be unversed in natural science.

The little village of **Zermatt** (1,620 m., 5,315 ft.) bore during the greater part of its existence the name of 'Prato Borno' or Praborgne (*pré borné*, meaning a plain limited by high mountains all around); but at the end of the fifteenth century it is called 'Matt' (the old name being also used), this German translation marking its occupation by a Teutonic colony from the Upper Vallais. The form 'Zermatt' does not seem to be found before the eighteenth century. It was known for many years to botanists and geologists before Saussure came thither in 1789, and even much later pleasure tourists were extremely rare. These few wanderers found lodging in the house of the local doctor, Lauber by name, whose house became, in 1839, a regular inn on a small scale. It stood on the site of the Monte Rosa Hôtel. But it was not till 1854 that it was sold to M. Alexandre Seiler, who, with the aid of his energetic wife, improved the accommodation at Zermatt till it became suited to the requirements of the most helpless and

indolent class of travellers. Many obstacles were encountered by M. and Madame Seiler in their arduous undertaking, but all were successfully overcome, and the memory of the courteous and amiable husband and wife (both now at rest) will long remain green in the hearts of those who had the pleasure and privilege of being their guests.

There is little to see in the village itself, a collection of wooden houses black with age, overtopped by the great hôtels. The village church is of considerable antiquity, while few travellers will fail to spend a few moments in the small bit of the 'God's Acre' on the N. side of the church, wherein rest the mortal remains of many foreigners, climbers and others, who have lost their lives in the neighbourhood; the English Church above the village has been built in memory of some of the earlier of these victims.

The grandeur of the scenery around Zermatt, and the number of expeditions which can be made hence into the heart of the ice region, more and more recommended this place to mountaineers, though now the crowd of tourists threatens to swamp them almost entirely. The establishment of the first inn on the Riffelberg in 1854 contributed greatly first to the conquest, then to the frequent ascent of, several of the highest summits around it, which were thus reduced to the limits of a moderate day's walk. Hence Zermatt and the old Riffel inn were the centres whence ardent mountain-climbers successfully attacked almost all the highest summits of the Pennine Alps, with the exception of the Grand Combin and of Mont Blanc himself, who holds his solitary and regal state far away in the W.

Weather is, of course, an indispensable condition for the proper enjoyment of objects so new and vast as surround visitors to Zermatt, which cannot be appreciated or impressed on the mind in a moment. But patience is sometimes severely tested

by a continuance of wet days and heavy clouds veiling the peaks. Snow sometimes falls in August close to the village, but the moments of returning fine weather, and the intervals sometimes snatched from the midst of a broken season, amply reward the traveller's perseverance.

There are many guides resident at Zermatt in summer, the best of whom come from St. Niklaus, Saas, &c., though they are not equal, save in isolated cases, to the best men in the Bernese Oberland. There is an official tariff, as usual, for all the neighbouring peaks and passes.

Irrespective of other attractions, the neighbourhood of Zermatt is full of interest to the geologist, the mineralogist, the botanist, and the entomologist. 'Breithorn' Biner has a vast collection of the rarer minerals and plants for sale. A list of even the scarcest plants would include a large portion of the Alpine flora, but a few may be mentioned which appear especially interesting. Near the village are seen growing close together some plants of the warm region and some high mountain species that have descended from the neighbouring peaks, especially through the Trift ravine. Thus *Stipa pennata*, *Euphrasia lutea*, *Echinosperrum deflexum*, and *Hieracium multiflorum* are seen behind the village close to *Gnaphalium Leontopodium*, *Avena distichophylla*, and *Artemisia mutellina*. Of the rarest species *Draba incana* var. *Thomasii*, *Artemisia spicata*, and *Scirpus alpinus* are found by the Findelen gl.; *Phyteuma humile* and *Carex hispidula* on the Riffelhorn; *Lychnis alpina*, *Oxytropis Gaudini* and *O. lapponica*, *Draba fladnitzensis*, and *Avena subspicata* on the Riffel and Gornergrat; and *Potentilla multifida* and *P. ambigua*, *Campanula cenisia*, and *Crepis jubata* on the Hörnli. *Gentiana tenella*, *Carex bicolor*, and *C. rupestris* are not uncommon.

Before describing the various excursions and ascents that may be

made from Zermatt or the Riffel a few words respecting the topography of the district may be useful. It has been remarked in the Introduction to this Section that the range of Monte Rosa may be considered as formed by the intersection, at right angles, of two great lines of upheaval. The centre of the cross is formed by a great snowy plateau of considerable extent and at a height of rather over 14,000 ft. Reckoning from hence the N. arm includes the *Zumsteinspitze* (4,573 m., 15,004 ft.), the *Dufourspitze*,¹ 4,638 m., 15,217 ft. (on a short buttress projecting W. from the frontier ridge, and so wholly in Switzerland), and the *Nord End* (4,612 m., 15,132 ft.) Beyond the latter peak the ridge falls to the *Jägerhorn* (3,975 m., 13,042 ft.), and then still more rapidly to form the *Weissthor ridge*, about 3 m. in length and 12,000 ft. in average height. About midway the snowy summit of the *Cima di Jazzi* (3,818 m., 12,527 ft.) rises a little above the general level. N. of this stretches a long range for about 10 m., which rises in the *Strahlhorn* (4,191 m., 13,751 ft.), the *Rimpfischhorn* (4,203 m., 13,790 ft.), the *Allalinhorn* (4,034 m., 13,236 ft.), the *Alphubel* (4,207 m., 13,803 ft.),

the *Mischabelhörner* (*Täschhorn*, 4,498 m., 14,758 ft., and *Dom*, 4,554 m., 14,942 ft.), and the *Nadelhorn* (4,334 m., 14,220 ft.), terminating in the *Ulrichshorn* (3,929 m., 12,891 ft.) and the *Balfrin* (3,802 m., 12,474 ft.)

On the S. side of the central plateau are four minor summits of Monte Rosa, arranged in descending order—*Parrotspitze* (4,463 m., 14,643 ft.), *Ludwigshöhe*, 4,346 m., 14,259 ft. (wholly in Italy), *Schwarzhorn* (4,231 m., 13,882 ft.), and *Vincent Pyramide* (4,215 m., 13,829 ft.)—while the rocky crest of the *Balmenhorn* (13,500 ft.), to the W. of the latter point, is balanced on the E. by the *Punta Giordani* (4,055 m., 13,304 ft.) S. of the Pyramide this range sinks into the comparatively inconsiderable ridge dividing the Lys and Sesia valleys.

The E. arm of the cross is formed by the *Signal Kuppe* or *Punta Gniffetti* (4,561 m., 14,965 ft.), the *Punta dei Tre Amici* (3,541 m., 11,618 ft.), and the *Cima della Pissa*, or *Monte delle Loccie* (3,498 m., 11,477 ft.), and may perhaps be considered to include the *Pizzo Bianco* (3,216 m., 10,552 ft.)

More important than this is the W. arm, which includes the *Lyskamm* (4,538 m., 14,889 ft.), the double summits of the *Zwillinge* (Castor, 4,230 m., 13,879 ft., and Pollux, 4,094 m., 13,433 ft.), the *Breithorn* (4,171 m., 13,685 ft.), and the *Petit Mont Cervin* or *Klein Matterhorn* (3,886 m., 12,750 ft.), and is connected with the Matterhorn and Dent d'Hérens by the flattened ridge, about 11,000 ft. in height, that supports the Théodule and Furgg gls.

Several secondary ranges, parallel to this W. range, are connected with the Cima di Jazzi and the other peaks to the N. which divide the gls. descending towards the Zermatt and Saas valleys. The barrier above spoken of connecting the Nord End and the Strahlhorn presents a wall of formidable precipices towards the E., but falls away in a gentle slope to the

¹ Even in the first edition (published July, 1863) of this volume Mr. Ball made the following protest against this name in favour of 'Höchste Spitze': 'With the highest estimate of the services of General Dufour, as Director of the admirable Swiss Survey, the writer does not believe that the name of any individual can remain permanently attached to the highest peak of the second mountain in the Alps. Since that date the name Dufourspitze has been well-nigh universally recognized, and appears on both the Swiss and Italian Government maps. It is adopted in the new edition of this volume, as two other reasons may be urged in its favour which would probably have induced Mr. Ball, on further consideration, to alter his opinion. It is now known that this peak is not, as was formerly believed, on the frontier between Switzerland and Italy, for it rises on a buttress projecting W. of the frontier ridge, and is thus wholly in Swiss territory. Again, on January 28, 1863, the Swiss Federal Government formally and officially adopted this name for the highest summit lying within the land over which it bears rule.

W. For a breadth of nearly three miles the upper snow slopes lie almost unbroken upon this slope, but as they begin to descend towards the main valley they are divided into two ice streams by a ridge which gradually emerges from the *névé*, and finally presents a rather bold front to the gls. on either side. The highest points of this range, appearing insignificant by contrast with the grand objects around, are the *Stockhorn* (3,534 m., 11,595 ft.), the *Hohthäligrat* (3,289 m., 10,791 ft.), the *Gornergrat* (3,136 m., 10,289 ft.), and the *Riffelhorn* (2,931 m., 9,617 ft.) The western slope, immediately overlooking Zermatt, is called the *Riffel* or the *Riffelberg*. On its south side is the *Gorner* gl., formed by the confluence of all the minor gls. descending from the N. and W. sides of the Monte Rosa range, while on the N. side the *Findelen* gl. descends in the direction of the village of Zermatt. The position of the *Riffel*, surrounded by a complete circle of peaks of the first order, is perhaps unique in the Alps. It forms the starting point for many of the most interesting ascents to be made from Zermatt, and is the first excursion which every visitor to Zermatt is bound to make.

The visitor to Zermatt has a choice of many expeditions to all degrees of difficulty, most of which are greatly facilitated by the numberless inns on the heights around the basin in which is the village itself—the two inns on the *Riffel*, those on the *Gornergrat*, near the *Findelengl.*, on the *Fluh Alp*, on the *Täsch Alp*, in the *Trift* gorge, on the *Staffel Alp*, at the *Schwarzsee*, on the way to and on the top of the *St. Théodule Pass*, not to speak of the new *Bétemps Club* hut (practically a small inn) on the *Plattje* rocks at the foot of *Monte Rosa* and $2\frac{1}{2}$ hrs. from the upper *Riffel* inn. It is always hard to draw a hard and fast line, but it seems convenient to describe the expeditions to be made from Zermatt as a centre under the three heads of *Excursions*, *Easy*

Ascents, and *High Ascents*, or *Grandes Courses*.

1. *Excursions*.—(a) *Riffel and Gornergrat*.—This is the Zermatt excursion *par excellence*, and can be accomplished throughout by rail or on horseback. The upper inn on the *Riffel* appears, when seen from Zermatt, to stand on the topmost crest of the mountain, because the gentler slopes behind, leading to the *Gornergrat*, are concealed from view.

(i.) *By Railway* (1 hr. 20 min. from Zermatt to the *Gornergrat*). The line starts from the station opposite that of the *Visp* line, crosses the river, and at once commences to mount the E. side of the valley. The gradient is not very steep, and the stream coming from the *Findelen* gl. is crossed on the same gradient by means of a very lofty bridge. A tunnel is then traversed, and the same direction (S.W.) followed, till at a point about 200 ft. above *Fällistutz* the line enters a cutting, and by a tunnel bends to the E., thus affording a fine view down the valley. Near the *Riffel Alp* station a view of the *Findelen* gl. is gained. Shortly afterwards the line curves round, nearly at a level, and mounts rapidly to the *Riffelhaus*, the station here, like that at the *Riffel Alp*, being about 5 minutes from the *Hôtel*. From the *Riffelhaus* station the line traverses undulating pastures, and passes to the S. side of the watershed, when a sudden and marvellous view of the *Gorner* gl., as well as of the peaks on its farther side, is disclosed. The N. side of the watershed is then regained, and the *Gornergrat* station is attained: it is on a plateau about 100 ft. below and due W. of the summit.

(ii.) *By Mule Path*.— $1\frac{1}{2}$ hr. is required to the lower inn, called *Riffel Alp*, 1 hr. more to the upper inn, or *Riffelhaus*, and $1\frac{1}{2}$ hr. more to the *Gornergrat*. The good mule path crosses the *Visp* by a bridge just S. of the village, and ascends amid meadows to the hamlet of

Winkelmatten. Here (at a chapel) the path to the inns by the Findelen gl. goes straight on, but that to the Riffel bends to the r., crosses the stream from the Findelen gl., and then mounts steeply, before long entering a wood of larch and Arolla pine. At *Schwegmatten*, between the path and the snout of the Gorner gl., there are some transported blocks left by the ancient gl., 700 ft. above the present level of the Visp. Higher up the traveller passes the *Augst-kummen* chalets, which command a noble view of the peaks between the Matterhorn and the Weisshorn. Here, above a flat meadow, the mule path bears to the l., *pedestrians* bound for the Gornergrat keeping straight on. In $\frac{1}{4}$ hr. the splendid **Hôtel Riffelalp** (2,227 m., 7,307 ft.) is attained. It is admirably situated amidst a forest, and commands glorious views, but is now very fashionable, so that the ardent mountaineer will prefer to take up his quarters at the higher and simpler inn of the Riffelhaus. Near the H. Riffelalp are the English Church, and the Monument to the memory of Mr. T. W. Hinchliff, formerly President of the Alpine Club. The mule path soon crosses a small stream, and then mounts a bare and stony mountain slope rather steeply by a series of zigzags, in order to gain the **H. Riffelhaus** (2,569 m., 8,429 ft.), the original inn (now enlarged) built here in 1854. It is one of the highest in the Alps, and the view is very much the same as that from the Riffelalp. Monte Rosa is seen from neither, but the Matterhorn rises more and more grandly. The Riffelhaus is the best starting point for the high ascents round the Gorner gl., &c. The main object of tourists is to reach the summit of the **Gornergrat**, a guide to which is needless. After ascending some way in a S.E. direction, and approaching the shallow little tarn called the *Riffelsee*, the traveller finds himself shut out from the view on the r. by a very steep pinnacle of serpentine rock, called

the *Riffelhorn* (2,931 m., 9,617 ft.) It can be ascended from the lake in $\frac{3}{4}$ hr. by a rough scramble up its E. ridge, and also by a variety of harder routes direct from the Gorner gl. Rising almost vertically from the Gorner gl., it commands the finest of all views of that immense ice stream; but the mountain panorama is less extensive than that from the Gornergrat. Mounting to the l. amidst huge slabs of slaty serpentine and other crystalline rocks, the summit of the *Gornergrat* (3,136 m., 10,289 ft.) is soon gained. It is now crowned by an inn, to the doors of which mules can go.

The panorama from this point presents an unequalled circle of Alpine peaks, from the *Mischabelhörner* right round to the Weisshorn, but only a few summits are seen besides those enclosing the Zermatt valley. The view is sometimes compared with that from the Eggishorn, but the Gorner gl. is not so deep below the spectator's eye as is the Aletsch gl. The upper basin of the Gorner gl. is, indeed, a noble object; but its middle and lower course are, in great part, concealed by the Riffelhorn and other intervening masses, while of the Findelen gl. only a small part is within sight. The first impression of Monte Rosa does not at all correspond with its great height. As seen from the Gornergrat none of the summits of the range on the S. side of the Gorner gl. seem entitled to pre-eminence over the rest; and it was long before their relative claims were settled. The earlier visitors to Zermatt were directed to the Breithorn as the highest part of the range. Later the name Monte Rosa was applied by the Zermatt people to the *Lyskamm*, and this is done on the plates to *Agassiz's 'Etudes sur les Glaciers'* (1840); but as early as 1840 (see *Engelhardt's* first book) the superiority of the *Dufourspitze* was acknowledged, though that summit was long called 'Gornerhorn' instead of by its proper name, 'Monte Rosa.' No

description can, however, prepare the traveller for the effect of the rest of the panorama, as he turns his eyes round the semicircle from the Matterhorn to the Strahlhorn. The only way to do justice to this scene is to return hither frequently during the spare moments of a traveller's stay in this region.

From the Gornergrat it is easy to scramble along the ridge to the *Hohthäligrat*, 3,289 m., 10,791 ft. (1 hr.), and to continue along the ridge and the snow slopes on the N. to the *Stockhorn*, 3,534 m., 11,595 ft. (1 hr.) The view from either includes a greater part of the Findelen gl., but both are overtopped by the *Cima di Jazzi* (3,818 m., 12,527 ft.), which is, therefore, to be preferred to either (see below under 'Easy Ascents').

Another way for walkers is to go through the gorge at the end of the Gorner gl. (*b.* below), rejoining the route described above at the *Fällistutz*, below Augstkommen.

Visitors to the Gornergrat may extend their excursion so as to make nearer acquaintance with the Gorner gl. E. of the Riffelhorn and running along the S. base of the Gornergrat is the stony slope called *Rothe Kuppe*, which is covered with rare plants. A mule track traverses this, at first many hundred feet above the gl., but gradually approaching nearer to the ice. The glacier is free from difficulty, and may be crossed in 1 hr. or so to the new Bétemps Club hut (inn), on the Plattje rocks, at the foot of Monte Rosa. On the gl. the traveller will not fail to notice a series of circular pits of considerable size, that recur at about equal intervals on the N. side of the gl.

The return to Zermatt may be varied by taking the mule path which leads from the H. Riffelalp to the *Grünsee inn* (also reached by a new mule path branching to the r. from the Gornergrat path a little below the summit, and leading direct to this inn), near the end of the Findelen gl., a visit to which may be thus combined

with the Gornergrat, the descent taking no more time. Good walkers may cross that gl., mount to the Fluh alp inn, on its r. bank, and rejoin the Grünsee path to Zermatt at the hamlet of *Findelen*.

(*b.*) **The Gorner Glacier.**—A visit to the lower end of this gl. is within range of an afternoon's stroll from Zermatt. After flowing due W. for 6 miles the Gorner gl. sweeps round the base of the Riffelhorn, and descends nearly due N. into the head of the Zermatt valley. The easiest way lies along the W. bank of the Visp for rather more than a mile; then after crossing the Z'Mutt torrent a very picturesque path leads to the ravine through which the Visp descends from its parent gl. This ravine or gorge has now been fitted up with ladders, &c. (fee), and is worth a visit. As indicated above, it is easy for pedestrians to pass through it (though this is not *necessary*, as across either bridge over the Z'Mutt torrent a path leads towards the gl. itself) and join the Riffel path at Fällistutz. The gl. itself has retreated greatly, and left a bare track of débris and glacial mud. Unpractised visitors should be cautioned against approaching close to the ice, as blocks of stone, lightly poised, hang on the terminal slope, and from time to time slide with great force down the declivity. The lower slope of the Riffelhorn is steep, but it is possible to mount some way along it, so as to observe the process by which the glacier smooths and polishes the surfaces of rock over which it moves. The appearances may be compared with those seen on the upper ridge of the same peak, in the hollow between the Riffelhorn and the Gornergrat, where an arm of the gl. passed when the ice rose many hundred feet higher than its present level. The pinnacles of ice formed in the steep part of the descent to the glacier cannot fail to excite admiration.

Practised icemen may take the glacier on the way to the Riffel, and good climbers may climb the Riffel-

horn by one or other of several routes direct from the gl.

(c) The **Findelen Glacier**.—This is indicated under *a*, as it may be combined with a visit to the Gornergrat. It is about 2 hrs. by a mule path from Zermatt to the Grünsee inn, on the l. bank of the gl., and about $2\frac{1}{2}$ hrs. to the inn at the Fluh alp, on the r. bank (foot path from the hamlet of Findelen).

(d) The **Schwarzsee, Hörnli, and Z'Mutt Gl.**—This is deservedly one of the excursions most made by strangers. It is possible to ride to the Schwarzsee Hôtel, and thence by the Staffel alp back to Zermatt, but the Hörnli is only accessible to walkers. From the very base of the E. foot of the Matterhorn a nearly level ridge or promontory of rock extends a little N. of E., terminating abruptly in a bold point, conspicuous from Zermatt, called the **Hörnli** (2,893 m., 9,492 ft.) In the angle between this and the higher ridge connecting the Matterhorn with the Breithorn is formed the *Furgg* gl. Below the Hörnli the ridge separating the torrent of this gl. from that of Z'Mutt spreads out, and in one of its undulations forms the basin of a small lake, the **Schwarzsee** (2,558 m., 8,393 ft.), with a solitary chapel beside it. On a knoll to the E. is a large new Hôtel. The mule path bears to the r. at the *Hermättje* huts from that to the St. Théodule (Rte. B), and by it the Hôtel is gained in about $2\frac{1}{2}$ hrs. from Zermatt. On the ascent one of the finest views of the Gorner gl. is obtained; it is here seen while undergoing the process of rapid flexure, at the same time that it falls rapidly round the base of the Riffelhorn, with its surface torn by various systems of crevasses, which finally intersect each other, forming a wild confusion of tottering pinnacles of ice. The view from the Hôtel well rewards the ascent; but those who do not object to a short, rough climb should ascend the *Hörnli* (1 hr.) Nowhere perhaps on the N.

side does the Matterhorn appear more overpoweringly grand than from this point. Other peaks, such as some of the Chamonix Aiguilles, may appear as bold in outline, but they want the air (alas, nothing more!) of solidity peculiar to this unmatched peak. With an audacity that seems to defy the universe it rears its front 5,000 ft. above the snow fields at its base, as though its massive framework could support the shock of a world in ruins. Its stability is but apparent. Those who have passed days or nights on the mountain have witnessed the continued progress of destruction that, stone by stone, is unbuilding that marvellous structure, though it is not yet possible to calculate how many millions of ages would be required to bring it down to the level of the lower ridges that surround its base.

There is no difficulty in following the nearly level ridge which connects the Hörnli with the actual base of the great mountain, where is the *Lower Matterhorn Club hut*, 3,298 m., 10,821 ft. (1 hr. or so.)

On the way back to Zermatt it is usual to follow a mule path which leads from the Schwarzsee Hôtel in $\frac{3}{4}$ hr. to the Staffel alp inn, at the lower end of the great Z'Mutt gl. (it is also possible to gain this inn direct from the Hörnli). A visit may be paid to that great but moraine-covered ice stream described in § 19. Rte. H. A mule path takes the traveller thence in 1 hr. to Zermatt along the r. bank of the Z'Mutt torrent. A remarkable chasm, cut through the rock by that torrent, well deserves attention. It is crossed by a bridge, over which leads a foot path to the hamlet of **Z'Mutt** (1,940 m., 6,386 ft.), the largest of those above Zermatt. Hence a path runs down the l. bank of the torrent to Zermatt.

(e) The **Trift Gorge**.—Some travellers may care to explore this wild, rocky gorge (rich in rare plants), which opens just N.W. of Zermatt.

The mule track for some way is the same as for the Mettelhorn (2. *a.* below), and a steep foot path follows the gorge (mainly along its l. side), passing a small inn ($\frac{3}{4}$ hr.) to the large Trift inn (2 hrs.) This inn is a good headquarters for several ascents to be described below.

2. **Easy Ascents.**—(a) *The Mettelhorn.*—The *Mettelhorn* (3,410 m., 11,188 ft.) is the highest point of a promontory extending eastward from the Morning Rothhorn, and immediately overlooking the village of Zermatt. It commands one of the finest views—some think the very finest—in this neighbourhood, and is distinguished from others of the same class by its proximity to the noble peak of the Weisshorn, and by including a considerable portion of the Bernese Alps in the opening between that peak and the Mischabelhörner. The ascent is a laborious climb of 4-5 hrs. from Zermatt, but is within the reach of an average walker, and many ladies have reached the summit. The mule path mounts N.W. from Zermatt, at first steeply, then, without ascending much, in a N. direction. It is that leading to the Trift inn. When a view of the Trift gl. is gained the ascent (now for pedestrians only) continues direct to the summit. The last part for about 1 hr. is very steep, in part over a snow slope, and in part over débris often mixed with loose snow. From the top a fine view is gained of the extensive Hohlicht gl. on the N.W.

(b) *The Unter Gabelhorn.*—This is an excellent climb for a traveller seeking to prepare himself for more arduous expeditions. The summit (3,398 m., 11,149 ft.) may be best gained from the Trift inn (3-4 hrs.), either by way of the gap to the W. of the peak or by a steep rock gully in the E. face. From the gap mentioned it is easy to return to Zermatt by the Z'Mutt gl.

(c) *The Wellenkuppe.*—This peak too affords good practice for aspiring beginners. It is a snowy dome

(3,910 m., 12,829 ft.) on the ridge between the Ober Gabelhorn and the Triftjoch. The E. arête is gained from the Gabelhorn gl. by rocks and snow, and beyond is a steep wall of good rocks, up which a pleasant scramble leads to the snow cap forming the summit (5 hrs. from the Trift inn). It is said that after the Breithorn this climb and the Rimpfischhorn are the most popular at Zermatt among those who do not propose to attack the great peaks.

(d) *The Breithorn.*—This favourite excursion is best made from the St. Théodule Pass (Rte. B. below), in connection with which it is described; it can, however, be ascended by the N. face by a route which passes immediately under the summit.

(e) *Ober and Unter Rothhorn.*—Those two points form as it were a pendant to the Mettelhorn, on the other side of the valley, as they stand at the W. end of the ridge extending from the Rimpfischhorn. Either peak may be gained in 2-3 hrs. from the inn at the Fluh alp, and the return to Zermatt may be made by the highland glen of *Riederkummen*, lying to the N. The lower (3,106 m., 10,191 ft.) is more detached from the main range than the higher (3,418 m., 11,214 ft.), and commands, therefore, the better view, though the panorama gained from either peak is very fine.

(f) *The Cima di Jazzi.*—This is the highest summit (save the *Jägerhorn*, 3,975 m., 13,042 ft.), which is properly a spur of the Nord End) on the long Weisssthor ridge connecting the Nord End with the Strahlhorn; but though 3,818 m. (12,527 ft.) is attained in 4-5 hrs. from the upper inn on the Riffel, or from the Fluhalp inn, provided an early start be made, as there are vast snowfields to be traversed, when the snow is soft this perfectly easy excursion becomes most fatiguing and laborious. No other summit of the Alps, nearly equal in height, is so completely within the reach of moderate walkers, and so

free from difficulty or danger, provided reasonable caution be used. The Gorner gl. is gained by the mule path described above under the Gornergrat. After ascending gently over the ice, close to its r. bank, this becomes crevassed, and it is usual to go back for a short time to the rocks at the foot of the Stockhorn. Thence easy snow slopes lead up towards the peak, but it is best to bear at the last towards the l., so as to gain the summit from the N.W., where it is less steep. On approaching the summit it is seen that while the side facing Zermatt has the form of a flattened cone, the Cima itself and the entire ridge connecting it with Monte Rosa, as well as the E. side of the great mountain itself, form a continuous range of precipices. Travellers are strongly cautioned against approaching too close to the verge, as the cap of frozen snow that covers the summit usually forms a cornice projecting several feet from the rock, and liable now and then to break away and fall some thousands of feet on the Italian side. The view includes a great part of the circuit of peaks forming the panorama from the Gornergrat, seen from a point in the circumference instead of from the centre. In the opposite direction the eye ranges for an enormous distance over the valley of the Po and the Alpine ridges that enclose the lakes and valleys of Lombardy. The snowy chain stretching farthest to the S. is the Adamello range (§ 40), not the Ortler.

3. **High Ascents.**—Within our limits the principal routes alone up the great peaks can be indicated, full details being given in Sir Martin Conway's two books in the 'Climbers' Guides' series, mentioned in the Introduction to this Section.

(a) **Monte Rosa.**—*Monte Rosa* is not a single peak (though the name is often applied to the culminating point of the mass), but a cluster of peaks, which rise on or close to a line running roughly S. from the Weisssthor

ridge. The fact of this cluster was the cause of the fanciful conjecture according to which the name was derived from a rose and its petals, but it is now recognised that the true explanation is the patois word (found in the valley of Aosta and its glens) 'roësa, ruise, roise,' meaning a 'glacier,' as these were *par éminence* the great glaciers visible from the S. In this group ten summits are usually distinguished, apart from the Jägerhorn (3,975 m., 13,042 ft.), which is a buttress of the Nord End. Reckoning from the N. the names and heights are as follows: *Nord End*, 4,612 m., 15,132 ft.; the *Dufourspitze*, 4,638 m., 15,217 ft.; the *Zumsteinspitze*, 4,573 m., 15,004 ft.; the *Signalkuppe* or *Punta Gnifetti*, 4,561 m., 14,965 ft.; the *Parrotspitze*, 4,463 m., 14,643 ft.; the *Ludwigshöhe*, 4,346 m., 14,259 ft.; the *Schwarzhorn*, 4,231 m., 13,882 ft.; the *Vincent Pyramide*, 4,215 m., 13,829 ft.; the *Balmenhorn*, 13,500 ft.; and the *Punta Giordani*, 4,055 m., 13,304 ft. The Ludwigshöhe and the four points to its S. are situated wholly within Italy; all the others are on the frontier ridge between Switzerland and Italy, save the Dufourspitze, which rises on a W. buttress, and so is wholly within Switzerland, of which it is the culminating point. The Punta Giordani was the first of these summits to be climbed (in 1801), the Dufourspitze not being conquered till 1855. An excellent summary of the history of Monte Rosa up to 1855 is given in an article by M. Pierre Puisieux in the 18th vol. (1891) of the 'Annuaire du Club Alpin Français.' As to the S. summits (the topography of which is very intricate), Sir Martin Conway's article in vol. xii. of the 'Alpine Journal,' Signor G. Rey's two in the 'Bollettino' for 1892 and 1893, and Signori V. Sella and D. Vallino's work (already mentioned), 'Monte Rosa e Gressoney,' should be consulted. It seems most convenient to describe first the Dufourspitze, as of

course it is the most frequently ascended, and then to speak briefly of the other summits, in due order from N. to S. The upper inn on the Riffel (2,569 m., 8,429 ft.), or the new Bétemps Club hut (2,990 m., 9,810 ft.), on the Plattje rocks (2½ hrs. from it), are the best starting points on the N. side, while on the S. side there are the inn on the Col d'Olen (2,865 m., 9,400 ft.), the *Gnifetti Club hut* (3,647 m., 11,966 ft.) on the Hohlicht (3 hrs. from the inn), and the *Regina Margherita Club hut* (4,560 m., 14,961 ft.), close to the summit of the Punta Gnifetti (3 hrs. from the Gnifetti hut), the last-named huts being very convenient for exploring the minor summits of Monte Rosa.

(i.) *The Dufourspitze*.—As seen from the Gornergrat a considerable gl., now called the *Monte Rosa gl.*, flows down in a N.W. direction from the depression, the *Silbersattel* (4,490 m., 14,732 ft.), between the two highest summits of Monte Rosa. But while the Nord End is on the frontier ridge the Dufourspitze is not. The latter summit rises on a great rocky buttress which projects from the frontier ridge towards the W., thus separating the head of the Monte Rosa gl. from that of the *Grenz gl.*, which fills the huge basin between the Dufourspitze and the Lyskamm. It follows, therefore, that the Dufourspitze is wholly within Swiss territory, and that the view thence does not plunge *direct* down the precipices towards Macugnaga, as stated in many old accounts. This great W. buttress parts off from the main frontier ridge at a rocky knob, known as the *Grenzgipfel* (4,631 m., 15,194 ft.) W. of this knob is a gap, and then the ridge rises again to form a rocky crest of considerable length, the two horns or extremities of which are of about equal height; the E. horn is called the *Ostspitze*, while the W. horn is the *Dufourspitze*, the highest point of all. W. of the Dufourspitze the ridge sinks to form a wide snowy depression, known as the *Sattel*

(4,354 m., 14,285 ft.) These topographical remarks will serve to clear up the history of the early attempts on the Dufourspitze. As it was clearly quite practicable to reach the Silbersattel the early explorers all tried from that side. MM. Puiseux and Ordinaire gained the Silbersattel by way of the Monte Rosa gl. as early as 1847. Later parties—the first Prof. Ulrich's two guides in 1848, Johann Madutz and Matthias z. Taugwald—gained the Grenzgipfel, but considered the higher W. ridge to be inaccessible. Probably the Ostspitze was first attained on September 1, 1854, by the three Messrs. Smyth, and later in that year by one or two other parties; though M. P. Puiseux holds (with some show of reason) that the Ostspitze was not reached till 1872 on its way up from Macugnaga by Messrs. Pendlebury and Taylor's party, which in any case was the first to traverse the crest from the Ostspitze to the Dufourspitze. But the Dufourspitze itself had been overcome long before, for on July 31, 1855, Messrs. G. and C. Smyth, Hudson, Birkbeck, and Stevenson, with Ulrich Lauener, of Lauterbrunnen, Johannes z. Taugwald, and two other Zermatt guides, had at last succeeded in finding the true way up it—by leaving the Silbersattel far to the N.E. and by gaining the Sattel, whence the rocky ridge was climbed to the highest and W. horn of the final crest. This is still the usual way, and nowadays it is hard to conceive that it was never tried till 1855, as it was successfully accomplished at the very first time of asking.

From the upper inn on the Riffel the mule path to the Gorner gl. is followed to that ice stream, which is then crossed to the *Bétemps Club hut* (2,990 m., 9,810 ft.), at the base of the Plattje rocks (2½ hrs.) These rocks are then ascended without any difficulty, and then endless snow slopes beyond, which gradually get steeper as the *Sattel* (4,354 m., 14,285 ft.) is neared. It then remains

to clamber along the final rocky ridge on the E., which offers no difficulties to those with any mountain experience, and may be scaled in 1 hr. or less. 5-6 hrs. thus suffice, in the case of average walkers, for the ascent from the Bétemps hut, but fast climbers will, of course, take far less time. The view from the summit is very extensive indeed, and it is said that in clear weather the cathedral of Milan can be distinguished; but as a rule there are light vapours on the Italian side, which spoil that bit of the view, unless the summit be reached very early in the day. The panorama from the top has been drawn by Herr X. Imfeld, and is published with vol. 15 of the 'Jahrbuch' of the Swiss Alpine Club. The eye plunges from the summit to an extraordinary depth towards the valley of Macugnaga, thousands of feet below.

It is a pleasant variation for good climbers to mount by the rocky S.W. rib to the Sattel, or to mount from the head of the Grenz gl. by a steep rock rib direct to the Dufourspitze. Those interested in working out the history of the mountain will like to climb up from the Silbersattel over the Ostspitze to the top ($1\frac{1}{2}$ hr.), or to join that route by climbing from the Grenzsattel over the Grenzgipfel to the gap on its W.

The ascent of the Dufourspitze from the E. or Macugnaga side was one of the boldest feats of modern mountaineers. It was first accomplished on July 22, 1872, by Messrs. W. M. and R. Pendlebury and the Rev. C. Taylor, with Gabriel Spechtenhauser, Ferdinand Imseng, and G. Oberto. The party bivouacked on the *Jägernetzen* rocks (5 hrs. from Macugnaga), then mounted direct the formidable ice and snow slopes which in the day time are swept by avalanches, and in 8 hrs. gained the base of the rocks leading up to the highest crest. Traversing successively the Grenzgipfel and the Ostspitze, the Dufourspitze was finally gained. A

Club hut has now been built on the *Jägernetzen* rocks (3,200 m., 10,499 ft.) by the Italian Alpine Club. It is called the **Marinelli hut**, from an unfortunate climber who perished in an avalanche while trying the ascent from this side. It cannot be too strongly impressed on the minds of our readers that this side of the mountain, though offering no serious climbing difficulties, is extremely dangerous, by reason of avalanches which fall continually. Those who undertake this route should, therefore, consider themselves favoured by great good luck should they meet with no misfortune. The Marinelli hut can be used for several similarly dangerous climbs—the ascent to the Silbersattel, or to the Grenzsattel (also called Zumsteinsattel), or to the Colle Gnifetti, or direct up the Nord End. But none of these expeditions can be recommended to mountaineers who consider that their craft is based on something more than exposure to inevitable and unavoidable danger.

(ii.) *The Nord End.*—This summit was reached for the first time in 1861, by Sir T. F. and Mr. E. N. Buxton and Mr. J. J. Cowell. It is best attained by way of its N.W. buttress, but is also accessible by a sharp ridge from the Silbersattel. By the last-named route it is possible to combine the ascent with that of the Dufourspitze in one day.

(iii.) *The Zumsteinspitze.*—Like all but one of the points to the S., this peak was first gained from the S. by way of the great snowy plateau N. of the Lysjoch, by Herren Zumstein, Molinatti, and A. and J. N. Vincent, in 1820. The ascent from the Regina Margherita Club hut takes about 1 hr. There is still an iron cross on the summit, left by Zumstein, while his initials and those of the two Vincents are still seen carved in the rock.

(iv.) *The Signal Kuppe or Punta Gnifetti.*—After several unsuccessful attempts Signor Gnifetti, the *curé* of Alagna, at last attained this summit

in 1842, and hence his name was given to it. Close to the top, on the Italian side, is the **Regina Margherita Club hut** (prices very high), built by the Italian Alpine Club, and named in honour of the Queen of Italy, who has visited it. Two men reside in this all summer. The view from the summit is unusually fine. This summit can, of course, be easily reached from the Riffel (as was first done in 1861 by Messrs. F. F. Tuckett, C. H. and W. J. Fox) on the way over to the Col d'Olen inn. 6 hrs. suffice for the ascent from the latter inn.

(v.) *The Parrotspitze*.—Dr. Frederic Parrot, in 1817, made a journey round the S. side of Monte Rosa, in order to determine the lowest limit of eternal snow, and his name has been given to this hump, which is easily accessible from either the Sesiajoch, on the N.E., or the Lysjoch, on the W. It was first visited by Messrs. Macdonald, Grove, and Woodmass, in 1863.

(vi.) *The Ludwigsöhle*.—Another explorer of the group, Ludwig, Baron v. Welden, made the first ascent of this snowy point in 1822, and his name was rightly given to it, as he published in 1824 the first monograph on the Monte Rosa group. The climb up from the gap between the peak and the Schwarzhorn takes $\frac{1}{2}$ hr. by snow slopes.

(vii.) *The Schwarzhorn*.—The exact position of this point was long uncertain, though it actually stands on the main ridge. Hence it was not ascended till 1873, when Baron v. Rothschild and the Marchese Marco Maglioni went up it. It is accessible in a short $\frac{1}{2}$ hr. by snow and rocks from the gap between it and the Ludwigsöhle.

(viii.) *The Vincent Pyramide*.—Besides Zumstein, other Gressoney men took part in the early explorations on the S. side of Monte Rosa, the Vincents. So after J. N. Vincent had, in 1819, first climbed this peak, his family name was most appro-

priately given to it. From the Gnifetti hut the ascent takes 2 hrs., the usual route making a circuit and finally mounting the snowy N. face.

(ix.) *The Balmenhorn*.—Few summits have given topographers more trouble than this comparatively small point. It is clear now that it is a rocky crest rather W. of the ridge between the Schwarzhorn and the Vincent Pyramide. It can be climbed in 5 min. by rocks from the snow field between it and the Vincent Pyramide, and was probably first attained by Signori Pedretti and Mariotti, in 1875.

(x.) *The Punta Giordani*.—This point too takes its name from its first conqueror, Dr. Pietro Giordani, of Alagna, who climbed it in 1801, this being the first recorded occasion on which any peak of the Monte Rosa cluster was scaled. It is accessible in 3 hrs. from the Col d'Olen inn by the Indren gl., or from the Gnifetti Club hut by any of the three ridges which join to form the peak.

It appears probable that a quick walker starting from the Col d'Olen inn might, with good snow, climb in succession all the S. peaks of Monte Rosa up to the Punta Gnifetti, where he could spend the night; next day it would be practicable to continue this splendid excursion, ending at the Dufourspitze, or even the Nord End, and gaining the Riffel that night. If the start were made from the Gnifetti Club hut a good climber might take all the summits up to the Zumsteinspitze, and yet gain the Riffel the same night.

(b) *The Lyskamm*.—The greatest of the tributary glaciers flowing from the mass of Monte Rosa is the *Grenz* gl., descending from the central plateau between the Dufourspitze and the Lyskamm. At the head of this gl. is the Lysjoch (Rte. D), and it was hence that the first ascent of this peak was made in 1861 by a large party, headed by the Rev. J. F. Hardy. The climb takes about 3 hrs. and is not difficult, but the ridge

is very often heavily corniced, so that very great care should be taken. The summit may also be attained from the Felikjoch, on the W., by a very long and in part narrow arête. But Messrs. C. E. Mathews and Morshead in 1867 showed that the easiest, safest, and most direct route is by way of the rocky S.W. ridge, which may be gained either from the head of the Felik gl. or from the Lys gl. by a traverse (6 hrs. up from the Quintino Sella Club hut). An even shorter route is by the S. arête (4 hrs. from the Gnifetti hut).

(c) *The Zwillinge, or Twins.*—These are two snowy points, also called the *Weisse Brüder*. The higher and more southerly, *Castor*, is accessible from the Felikjoch in 1 hr. (or in $1\frac{1}{4}$ hr. from the Zwillingsjoch). The lower and more northerly, *Pollux*, may be gained by its S.W. ridge in $1\frac{1}{4}$ hr. from the Schwarzthor, or in 1 hr. from the Zwillingsjoch. They can easily be climbed together in one not very long day from the Riffel and back, or on the way from the Riffel to Fiéry or Gressoney, Pollux being taken first.

(d) *The Matterhorn.*—This is now the accepted Swiss name of the great Zermatt peak, and is taken from the 'Matten,' or meadows, which have also given their name to the village at its foot. On the Italian side the mountain is called 'Cervin,' probably a form of 'Sylvius.' All these names were originally applied to the St. Théodule pass, and later transferred to the great peak which dominates it. The three names seem to be first given to the mountain in 1804, in 'Ebel's' Guide Book. Its height is 4,595 m. (14,781 ft.) according to the Swiss, and 4,482 m. (14,705 ft.) according to the Italian engineers.

The history of the successive attempts to vanquish this formidable peak, and of the catastrophe that marked the first victorious attack, is well known to those interested in Alpine adventure, and has been

graphically told in Mr. Whymper's classical work, 'Scrambles amongst the Alps' (1st edition, 1871; 4th and definitive edition, 1893). The first complete ascent on the Swiss side was made on July 14, 1865, by Mr. Whymper, Rev. C. Hudson, Lord F. Douglas, and Mr. Hadow, with Michel Croz and the two Taugwalders; but, save Mr. Whymper and the two Taugwalders, all the party perished on the descent, owing to a slip on the iced final slope. Three days later the first ascent from the Italian side was made by a party of men from the Val Tournanche. In 1867 Mr. F. Craufurd Grove made the 3rd ascent, climbing up on the Italian side, but finally traversing a very difficult shelf (the 'galerie') across the W. face of the peak to the N.W. arête. In 1868 the Rev. J. M. Elliott, with Peter Knubel, made the first ascent on the Swiss side since the accident, and a few days later the late Prof. Tyndall (one of the earliest and most persevering explorers of the mountain) ascended on the Italian side and descended on the Swiss side. The same year Signor F. Giordano made geological observations on the occasion of his traverse. He has shown that, although in great part crystalline in structure, the rocks exhibit a very regular structure-like stratification, and that, about mid-height, a mass of gabbro, 1,600 ft. in thickness, and conspicuous on the W. side, takes the place of talcose gneiss on the E. face of the mountain. In 1871 an English lady gained the summit by the Swiss route, and later in the same year an American lady traversed the peak from Switzerland to Italy. Ascents by either route are now very frequent during the summer, and good climbers have not only succeeded in climbing the peak in a single day from either Zermatt or Breuil, but have passed from one place to the other in the day. Difficult and dangerous routes have also been forced up from the Z'Mutt gl. by the W. face, and by the N.W. ridge.

(i.) *The Swiss Route.*—Under or-

dinary circumstances this way offers no great difficulties save to an inexperienced climber. It is usual to spend the night in the **lower hut**, 3,298 m., 10,821 ft. (4 hrs. from Zermatt), unless the Schwarzzsee Hôtel be preferred. Beyond, there is some danger of falling stones (particularly in the afternoon), while getting from the snow on to the E. face, but then the latter is climbed without difficulty, past the abandoned *upper* hut, to the 'shoulder,' whence the rest of the climb is made by the N.E. ridge (leaving to the r. the slope on which occurred the great accident of 1865), there being fixed chains and ropes. 4-5 hrs. suffice for the ascent from the lower hut. When there are several parties on this side of the peak at the same time great care must be taken to keep together, as it is easy to dislodge stones, by which the advance parties are exposed to great danger. A Rly. from Zermatt is projected up this side of the peak.

(ii.) *The Italian Route*.—This is a harder climb than the former, though many ropes have been fixed on the way, but it is safer, as there are no falling or loose stones. It is usual to sleep at the new **Luigi di Savoia Club hut** (3,890 m., 12,763 ft.), at the foot of the 'Grande Tour,' reached in 6 hrs. from Breuil by keeping far to the W. of the couloir leading up to the Col du Lion, and traversing along the face of the Tête du Lion (fixed rope), whence steep rocks lead direct to the Club hut. Steep rocks lead up hence to the 'Cravate': here the *old hut* (4,122 m., 13,524 ft.) lies $\frac{1}{2}$ hr. out of the way on the r. Next the end of the great S.W. buttress, the *Pic Tyndall*, is gained, and a nearly level ridge traversed to the gap at the foot of the last precipitous rocks. These are scaled by a series of fixed ropes and a short ladder, and so the summit reached in 4-5 hrs. from the new Club hut.

The prospect from the summit of the Matterhorn is very extensive, and

has been photographed by Signor Vittorio Sella. It extends to the Viso and the Dauphiné peaks, while Zermatt itself is but a speck far below.

(e) *The Dent d'Hérens*.—This ascent from the Zermatt side by way of the Tiefenmattenjoch is very dangerous, and the peak is best taken from the head of the Valpelline (§ 19. Rte. E), though it may also be gained from Breuil (Rte. B. below).

(f) *The Dent Blanche*.—Of all the peaks round Zermatt this, perhaps, save under exceptional circumstances, is the most consistently difficult. It is usually climbed (since the destruction of the Club hut on the Stockje) in 6-7 hrs. from a bivouac on the Schönbühl promontory, near the head of the Z'Mutt gl. (see § 19. Rte. H.), or in 5-6 hrs. from the new Club hut on the S. Col de Bertol (§ 19. Rte. C.)

(g) *The Ober Gabelhorn*.—This splendid peak (4,073 m., 13,364 ft.) was not conquered till 1865, when it was gained from the Zermatt side by Messrs. A. W. Moore and H. Walker, followed next day by Lord F. Douglas, who scaled it from the Zinal side. At least 6 routes have now been discovered to its summit, and this gives it an exceptional position among Alpine summits. That most usually taken is by the N.E. arête. The best starting point is the inn in the Trift gorge. Thence the Gabelhorn gl. is mounted and the N.E. arête (often heavily corniced) gained just at the foot of the final peak. The climb takes 6-7 hrs. from the inn. Sometimes the rocky E. face is traversed to the N.E. ridge, but it is better to gain that ridge direct.

(h) *The Zinal or Moming Rothhorn*.—As indicated in § 19. Rte. I, this summit (4,223 m., 13,856 ft.) was first attained, from the Zinal side, in 1864, but it was only in 1872 that Messrs. C. T. Dent and Passingham succeeded in forcing a way up from the Zermatt side. Nowadays the Zermatt route has become the chief mode of access, and the ascent is

perhaps the most popular among those at Zermatt, save that of the Matterhorn. It is an easier climb than those of the Matterhorn and Weisshorn, and is often made even by active beginners. From the Trift inn the S.E. ridge is gained by the Eseltschuggen rocks and a long snow slope, and then followed to its junction with the main mass of the mountain. A traverse across the S. face leads to a notch in the S. ridge, at the base of the final rocks, which are scaled mainly by a long crack. 5-6 hrs. suffice from the inn. It is a pleasant variation to traverse the peak to the Montet Club hut, on the Zinal side.

(i) *The Weisshorn*.—This summit (4,512 m., 14,804 ft.) is perhaps the most beautifully sharp and symmetrical of the pyramidal peaks of the Alps, but its ascent, though long feared, is rather laborious than difficult, at least by the usual route along the E. arête. It is formed by the intersection of a main N. and S. ridge with another that descends towards Randa on the E. The N.E. and S.E. faces of the pyramid, as well as the upper parts of the three ridges leading to the top, are mainly formed of hard-frozen snow. On the W. side the pyramid is broken, and displays those vast precipices that present so grand an aspect from the heights above Zinal. The honour of making the first ascent fell to the late Prof. Tyndall, who achieved it in 1861, with Ulrich Wenger and J. J. Bennen, and has given a narrative of the expedition in his genial little volume entitled 'Mountaineering in 1861.' The second ascent was made in 1862 by Mr. Leslie Stephen. The lower two-thirds of the E. arête are formed of successive teeth of rock which start out of steep snow slopes, seamed by couloirs of ice. The earlier ascents were made by a dangerous traverse across the gullies on the S. face of the E. arête, but it has now been found better to keep along the crest of the ridge itself. The final snow ridge is sharp, and ends abruptly on

l. on the edge of precipices of which Mr. Stephen says, 'I have never seen more fearful cliffs.' The summit is a solid angle of frozen snow, ending in a point, the three ridges of the mountain here meeting. For this ascent it is necessary to bivouac on the Hohlicht slopes, 3 hrs. above Randa; thence the ascent takes usually about 6 hrs., but can be done in less.

The peak has also been scaled by the great W. face, by the S. arête from the Schallijoch, and by the great N.E. face and N. ridge from the Bies gl., but all these routes are difficult and dangerous in varying degrees, and cannot be recommended for general adoption.

(k) *The Mischabelhörner*.—This is the loftiest of all the ridges round Zermatt, next after that of Monte Rosa itself. It is crowned by two pointed summits (visible from Zermatt itself) of nearly equal height: the N. summit is the *Dom* (4,554 m., 14,942 ft.), the highest peak in Switzerland after the Dufourspitze, and the S. one is the *Täschhorn* (4,498 m., 14,758 ft.) Between them is the lofty *Domjoch* (4,286 m., 14,062 ft.) These two summits and the ridges N. and S. of them are sometimes called the *Saasgrat*. The ridge continues N.E. from the Dom, and at *Südenzspitze* (4,300 m., 14,108 ft.) sends off a great buttress to the N.W., which is crowned by the *Nadelhorn* (4,334 m., 14,220 ft.) and the *Hohberghorn* (4,226 m., 13,865 ft.) This buttress divides the Hohberg gl. from the extensive Ried gl., and is often called the *Nadelgrat*; its higher points may be climbed from the Randa side, but are more usually ascended from Saas, and so may be considered in Rte. O. below. The Dom was first ascended in 1858 by the Rev. J. L. Davies, who, with the Rev. J. W. Hayward, was also the conqueror, in 1862, of the Täschhorn. The usual starting point for the *Dom* (as well as for the *Nadelgrat*, if climbed from this side) is now the new *Festi*

Club hut (2,936 m., 9,633 ft.), on the r. bank of the Festi gl., which flows due W. from the desired peak (3 hrs. from Randa). Hence a gap in the ridge dividing the Festi and Hohberg gls. is gained, and then this ridge followed to the top, which may also be gained by the great snowy N. face. By neither route is any serious difficulty encountered. 6-7 hrs. are required from the Club hut. The view from the summit is considered by Mr. Stephen (who made the second ascent) as 'the very finest in the Alps,' and this opinion has been confirmed by many other competent judges. The ascent of the Dom from Saas by the E. face is difficult, and very dangerous by reason of falling stones. Active climbers may, however, follow the ridge from the Dom across to the Täschhorn, and descend to the Zermatt valley by the Domjoch (this is a magnificent climb in fine weather); or may *first* take the Täschhorn from the Mischabeljoch and then the Dom.

The *Täschhorn* is less easy of access. It is necessary to bivouac under a rock near the end of the Kien gl. (3 hrs. from Randa), and then to make a way up the N. arm of that gl. to its head, whence a steep climb up snow or ice slopes leads to a high gap in the S.W. arête, by which the ascent is completed (6-7 hrs. from the bivouac). The summit may also be gained from the Täsch alp inn, or the Mischabeljoch, by the long and usually heavily-corniced S.E. ridge, while the climb up the E. face from Saas is very steep, though not as dangerous as that of the Dom from the same side.

(l) The *Alphubel*, the *Allalinhorn*, and the *Strahlhorn* may all be made the object of a visit from Zermatt, but are usually climbed on the way over one or other of the passes to the Saas valley, and may best be described in connection with these (Rte. O. below).

(m) The *Rimpfischhorn*. — This summit, too, may be gained from

either of the passes between which it lies, but, though the view thence over Piedmont is perhaps not so fine as from the slightly lower *Strahlhorn*, it is more frequently ascended direct from Zermatt, and so may best find a place among the ascents from Zermatt. The first ascent was made by Messrs. Leslie Stephen and Liveing in 1859. The start may be made from either of the inns on the Riffel, but now most conveniently from the little inn on the Fluh alp, 2½ hrs. above Zermatt. Thence the long ridge of the *Rimpfischwänge*, projecting far to the W. from the peak, is easily gained, and followed to the foot of the final rocks, the climb up which seems more formidable from a distance than it is in reality. 5-6 hrs. are required for the ascent from the Fluh alp. Good climbers will find it an interesting rock climb of 3 hrs. from the Adler Pass, or of 5 hrs. from the Allalin Pass.

In bringing to an end this brief sketch of the chief excursions and ascents round Zermatt, it may be as well to add that a very favourite and easy excursion is to the summit of the St. Théodule Pass (described in the next Rte.), whether the ascent of the Breithorn be combined with it or not.

ROUTE B.

ZERMATT TO CHÂTILLON BY THE ST. THÉODULE PASS. ASCENTS FROM BREUIL.

The *St. Théodule* is one of the most frequented, and in fine weather one of the easiest, glacier passes in the Alps. Mules may sometimes be taken across from Zermatt to Breuil, and in any case go on the Swiss side nearly as far as the lower inn, and on the Italian side up to the foot of the gl. The short bit of gl. on the Italian side is easy; the longer gl.

on the Swiss side is also quite easy, but large concealed crevasses do often occur, so that the rope should never be neglected, however unnecessary it may seem; and though good climbers may dispense with a guide, yet they should never go less than three. Accidents of a fatal kind have followed on the neglect of these obvious precautions. The inn on the summit of the pass has been much improved of late, and is used as a starting point by those who wish to secure an unclouded view from the Breithorn. Ascending from Zermatt 3 hrs. suffice to reach the lower inn, and 1 hr. more to gain the pass, whence it is an easy 2 hrs. down to Breuil; in the reverse direction reckon 3 hrs. up from Breuil and $2\frac{1}{2}$ -3 hrs. for the descent to Zermatt.

There is no certain evidence that the Théodule was known to the Romans, but it was certainly traversed in the Middle Ages. The first distinct mention of it is by Ægidius Tschudi in his treatise 'De præcâ ac verâ Alpina Rhætiâ' (1538), who calls it 'Mons Gletscher.' Other sixteenth-century topographers give it also the names of 'Mons Matter,' 'Mons Sylvius,' and 'the pass to Aosta.' The two former names were gradually transferred to the great peak on the W., though the pass is still sometimes called *Matterjoch*. One or two writers even call it 'Mont Rose' (roëse = glacier). But it is better known as the *St. Théodule*, from a great wooden statue of that saint (the first bishop of Sion and the patron saint of the Vallais) which existed there at the end of the seventeenth century, about the time when a redoubt was thrown up on the pass by order of the duke of Savoy then (1688) seeking to prevent the Waldensians from re-entering their native valleys near Turin.

The mule track from Zermatt passes along the l. bank of the Visp, crosses the stream from the Z'Mutt gl. by the second or higher bridge, and beyond the Zum See huts splits

into two branches. That to the r. leads to the Staffel Alp. The way to the St. Théodule lies up the l. branch, and at the next bifurcation, a little above, the l. branch must be again taken (the r. one going to the Schwarzsee inn). The ascent has now become steeper, and in about 2 hrs. from Zermatt the grassy pastures give way to the moraines of the Théodule gl. and the smooth rocks below them. The mule path is, however, taken over these to within a short distance of the *lower inn*, on the *Leichenbretter* rocks.

[Here falls in the route for pedestrians only, from the Riffel inns— $\frac{1}{2}$ hr. shorter than that from Zermatt—which crosses the Gorner gl., and then mounts along the E. edge of the Leichenbretter rocks.]

The ascent over the Théodule gl. is easy, though it is laborious after a fall of snow. There is usually a well-defined track over it in a due S. direction, which leads to the rock ridge of the Col (3,322 m., 10,899 ft.) 5 minutes' ascent from the snow up screes is the inn. On about this spot Saussure spent 3 days in 1792 in a temporary shed, making, during his stay, the first ascent of the Klein Matterhorn. Meteorological observations were made, at the expense of M. Dollfus-Ausset, of Basel, in the inn for three successive winters, about 1865.

[Mountaineers may take a shorter route from Zermatt to Breuil. This is the *Furggjoch* (3,357 m., 11,014 ft.), at the very foot of the Matterhorn. It is the most direct route from the Schwarzsee Hôtel. On the Swiss side the *Furgg* gl. is traversed, and there is another smaller gl. on the Italian side, but this pass presents no real difficulties. So much cannot be said of two other passes between the same places. These lie between the Matterhorn and the Dent d'Hérens. The more easterly is the *Col du Lion* (3,577 m., 11,736 ft.), the ascent to which on the Swiss side is by an excessively difficult and

dangerous couloir, though the Italian side is perfectly easy. The other pass is the *Col de Tournanche* (3,468 m., 11,378 ft.), which is very steep and long on both sides.]

The view from the pass may be greatly extended in the direction of the Dent Blanche, &c., by climbing in $\frac{1}{2}$ hr. the *Theodulhorn* (3,472 m., 11,392 ft.), just N. of the pass. A still wider prospect may be obtained from the *Klein Matterhorn*, 3,886 m., 12,750 ft. (2 hrs.), a detached peak of bold form lying a little S. of the ridge connecting the Breithorn with the St. Théodule. This is most easily gained by snow slopes on its S. side from the route to the Breithorn. The *Breithorn* (4,171 m., 13,685 ft.) is, however, the favourite excursion. This is the massive, nearly flat-topped mountain which forms the W. end of the chain stretching from the Monte Rosa cluster of peaks. On the N. side it presents ranges of dark rocks rising above steep snow slopes and glaciers; it can be ascended on this side, but the climb is steep and rather dangerous. On the S. side it is perfectly easy of access ($2\frac{1}{2}$ –3 hrs. up from the pass) by a continuous snow slope of moderate inclination; but the snow is exposed to the southern sun, so that it soon becomes soft, and hence an early start from the St. Théodule inn is advisable. The first ascent of this now frequently visited mountain seems to have been made by a French traveller, M. Henri Maynard, in 1813, with J. M. Couttet, one of Saussure's guides, who had been with him in 1792 on the neighbouring Klein Matterhorn. The first English traveller who is known to have certainly reached the summit is Sir John Herschel, whose expedition was made in 1821 or 1822, for Lord Minto's ascent appears to have taken place in 1830, though it is sometimes dated in 1818.

[The traveller bound from the St. Théodule to the Ayas glen may reach Fiéry, at its head, in 3 hrs. or so,

either by keeping nearly due S. from the St. Théodule, and crossing a gap N. of the Col des Cîmes Blanches, or by bearing due S. from the great snowy plateau just S. of the Breithorn, and going down the E. branch of the Aentina gl.]

In descending from the St. Théodule on the Italian side the traveller must avoid the broad smooth basin of névé before him, and bear well to the right, the track lying for about $\frac{1}{2}$ hr. over gl. and below the remains of the redoubt of 1688. At the foot of the gl. a good new mule path leads over some rocks, and then over pastures to the *Hôtel du Mont Cervin* (2,097 m., 6,880 ft.), now much enlarged and very good headquarters. This is often said to be at Breuil, but is really at the *Jomein* or *Giomein* huts, the true Breuil huts lying in the basin below (2,004 m., 6,575 ft.), and having a small inn to themselves. To avoid confusion, however, the Giomein inn will in these pages continue to be named **Breuil**.

Breuil is an excellent station for the botanist, who, among other rare Alpine plants, may find *Saponaria lutea*, *Silene vallesia*, *Trifolium saxatile*, *Potentilla norvegica*, and *P. nivea*.

[A very fine view of the Matterhorn may be gained from the *Motta di Pleté*, 2,889 m., 9,479 ft. (2 hrs., accessible on mule back), and a still better one from the *Gran Sometta* (3,167 m., 10,391 ft.), on the E., a point which may easily be climbed from the Col des Cîmes Blanches (described in Rte. G) on the way over to the Ayas glen.]

Mountaineers will find many ascents to make round Breuil. The chief, of course, is that of the *Matterhorn*, described in Rte A. 3. d. The *Dent d'Hérens* (4,180 m., 13,715 ft.) can be gained from Breuil by way of the Col des Grandes Murailles, on its S., which is attained by the difficult Mont Tabel gl. in 7–9 hrs. A harder route up the

peak is by way of the S.E. and E. ridges.

There are no easy passes across the jagged line of peaks stretching S. of the Dent d'Hérens till beyond the Château des Dames, though several high gaps have been traversed by adventurous climbers seeking routes from the head of the Val Tournanche to that of the Valpelline. But many of the peaks on this lofty ridge (enumerated in detail in § 19. Rte. F) offer good rock climbs, which may best be undertaken from the inn at Breuil. The *Pointe des Cors*, 3,855 m., 12,648 ft. (8 hrs.), is attained from the Cors huts by a route always bearing N., and a traverse under the Punta Giordano. The *Punta Lioy* (c. 4,000 m., 13,124 ft.) is climbed in 11 hrs. direct up the face. The gap between the Jumeaux de Val-tournanche can be reached by ascending to the cliffs under the Bec de Guin, and then bearing N. for 3 hrs. From this gap either of the *Jumeaux* (P. Giordano, 3,873 m., 12,707 ft., N. peak; P. Sella, 3,860 m., 12,665 ft., S. peak) can be ascended in $\frac{1}{2}$ hr. The *Bec de Guin*, 3,805 m., 12,484 ft. (7 hrs.), is gained by way of the *Bayettes* huts, a traverse l. across the rock wall to the ridge S. of the summit, and then along this ridge. By turning S. on attaining the ridge the *Bec de Créton* (3,637 m., 11,933 ft.) may be climbed. The *Tour de Créton* (3,583 m., 11,756 ft.) may be reached in about 2 hrs. from the lofty Col de Créton, to its S. For the ascent of the Château des Dames and its neighbours see § 19. Rte. F.]

The mule track below Breuil enters a ravine and is carried along a steep slope of rock to the little chapel of *N.D. de la Garde*. It then traverses a green basin, below which the torrent has cut a very deep cleft through the serpentine rock, so narrow that in some places the opposite walls are in actual contact. This spot, called the *Gouffre des Busserailles*, has been made accessible from below and deserves a visit,

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which well rewards the slight loss of time involved. Lower down the path crosses the torrent, and follows the r. bank until, after returning to the other bank, a short ascent leads to the principal hamlet in the valley,

Paquier, called commonly *Val-tournanche*, 1,524 m., 5,000 ft. (2 hrs. from Breuil.) The view hence down the valley, closed by the distant peak of the *Tersiva*, in the mountains of Cogne, is extremely fine.

The ascent of the *Grand Tour-nalin* (3,379 m., 11,086 ft.), on the E., can be made in 5 hrs., there being a mule path to the summit, on which is the *Carrel Club hut*, and is strongly recommended, as the panorama is superb. It can be taken on the way over to S. Giacomo d'Ayas or to Fiéry. For the ascent of the Château des Dames and its neighbours on the W., and for the passes to the Valpelline, see § 19. Rte. F, and for the passes to the Val St. Barthélemy see § 19. Rte. G. *ad fin.*]

There is now a char road from the village all the way to Châtillon (11 m.) After descending the steep hill on which stands the village it passes nearly all the way along the r. bank of the torrent, amidst very beautiful scenery, the chestnut and walnut trees often forming a framework for the Matterhorn, which is seen on looking backward. On the way some extraordinary remains of a fifteenth-century aqueduct may be seen high up on the face of the rock on the r., built to supply water to the hamlet of St. Denis, above Cham-bave, in the Dora Baltea valley. These are continued at intervals for several miles. The finest portion consists of several arches, very perfect, hanging like a picture against a nearly perpendicular cliff, several hundred feet above the valley, opposite the village of *Antey*. Near the latter village another aqueduct (thirteenth century) on the l. bank of the valley leads down to the upper slopes above Châtillon and St. Vincent, this too being seen in part from the valley

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road. The road for the last 2 m. rises high above the torrent, but pedestrians can find a path near the stream, leading more directly to Châtillon. (Those who are bound from Zermatt to the valley of Ayas may combine the finest part of the scenery of the Val Tournanche with a tolerably direct route to the former valley by crossing the Col de Portola from Antey to Ayas, Rte. H.)

Châtillon (551 m., 1,808 ft.) is a large village, the next in importance to Aosta, in the Dora valley, standing at the junction of the Val Tournanche with the Dora Baltea or Aosta valley. It is now a station on the railway from Ivrea to Aosta (15½ m. from the latter city), described in § 15. Rte. A. The chief objects of interest at Châtillon are the bridges. A Roman arch, still standing, is surmounted by a later bridge, which in its turn was superseded by the modern structure, a single arch, boldly thrown across at a great height above the stream. Ruined châteaux on the heights add to the picturesqueness of this part of the wonderful Aosta valley.

ROUTE C.

ZERMATT TO VERRÈS BY THE SCHWARZTHOR AND THE VAL D'AYAS.

It has been a difficult matter to decide how the valleys radiating from the S. and E. sides of the range of Monte Rosa, and the passes connected with them, may be most conveniently described. Formerly travellers, selecting either the higher passes nearest the central mass, or those more distant and easier, made, either partially or completely, the circuit of the entire group included in the present Section. But since the number of known passes between the adjoining valleys has been largely increased, and mountaineers have found their way across the range

of Monte Rosa from Zermatt to the head of each of the four principal valleys, over what was long deemed an impassable barrier, the number of possible routes open to visitors is multiplied to an extent rather inconvenient to the writer of a guide-book. In this and the three following Rtes. the passes leading from Zermatt across the main range of Monte Rosa, and the course down each of these four valleys to its lower extremity (where a railway is joined), are described, while in the subsequent Rtes. are included some of the countless passes lying in the circuit round the S. and E. sides of the range. As the passes to be described in Rtes. C, D, E, and F are among the highest known in the Alps, there is a manifest advantage in taking them from the upper Riffel inn, though the Sesiajoch is so difficult that it is better to *ascend* it from the Italian side.

It has been already observed that the long, nearly flat-topped, ridge of the Breithorn presents, towards Zermatt and the Gorner gl., ranges of very steep rocks. On its E. side it is separated from the broken masses of rock and ice that descend from the Zwillinge towards the Gorner gl. by the *Schwärze* gl., which expands gradually in width as it descends from the crest of the ridge, and is usually broken into a sort of giant staircase by broad, parallel, transverse crevasses. This is bordered on the E. side by a range of nearly vertical rocks, facing a little N. of E., at first very lofty, but diminishing in height as the gl., towards its source, approaches the ridge. At the head of this gl. there is a small, gently-sloping plateau, enclosed, as within a black gateway, by the rocks of the Breithorn and of Pollux, the N.W. summit of the Zwillinge. This gateway forms the pass of the **Schwarzthor**, first traversed in 1845 by Mr. Ball, whose vivid description of his passage, in the first series of 'Peaks, Passes, and Glaciers,' is well known. The Gorner gl. is gained by a descent from

the Monte Rosa path just E. of the Riffelhorn, and crossed to the foot of the ridge descending from Pollux. Higher up the crevassed portion of the Schwärze gl. may be turned by the rocks on the r. bank, but not unfrequently it is possible to ascend straight up from its foot. 5 hrs. suffice from the Riffel to the pass (3,741 m., 12,274 ft.), the view from which is limited by the projecting rocks of the Breithorn.

But it is easy to obtain a fine panorama by climbing *Pollux* (4,094 m., 13,433 ft.) by its S.W. arête or S. face (1½ hr.), while *Castor* (4,230 m., 13,879 ft.) may be ascended by its W. face in 2 hrs. from the Schwarzthor. The two may thus be easily combined in the same excursion, and the return made by the Felikjoch, Rte. D, though now the new Club hut at the N. foot of Monte Rosa enables the expedition to be taken even better in the reverse direction. From *Castor* it is perfectly easy to go down due S. in 2 hrs. to the Quintino Sella Club hut (3,601 m., 11,815 ft.), on the ridge between the Ayas and Lys valleys; see Rte. D.]

On the Italian side it is necessary to keep at first to the l. along the base of Pollux, and then to bear S.W., so as to gain the snow at the W. base of the great rock ridge dividing the two arms of the *Verra* gl. The descent is completed by the l. bank of the W. arm (the E. arm is practicable, but harder), and so the highest *Verra* hut is reached. Some way beyond, at the meeting point of the two branches of the Ayas valley, are the huts of *Fiéry* (1,878 m., 6,162 ft.), where there is now a very comfortable and finely-situated inn, the best headquarters in these parts (4 hrs. from the Schwarzthor). (Hence it is 5-6 hrs. up to the Quintino Sella Club hut, mentioned above, while the passes to the neighbouring Italian valleys are described in Rtes. G and H.)

[In 1863 Mr. S. Winkworth effected a pass, now called the *Zwillings* or *Verra Pass* (3,861 m., 12,668 ft.),

between the two summits of the *Zwillinge*. The ascent on the Swiss side, by the *Zwillings* gl. and an ice slope, is much steeper than that to the Schwarzthor, while on the Italian side the route of the last-named pass is soon joined. Either of the *Zwillinge* is easily accessible in 1-1¼ hr. from this pass, which may serve as a variation on the Schwarzthor.]

Fiéry stands at the junction of the torrents from the *Verra* gl. and of the *Aventina* gl., the united stream being called *Evançon*, a name spelt in different ways. The dialect of the inhabitants of the upper part of the valley is rather different from the usual patois of the tributary glens of the *Dora Baltea* valley, and may represent an early form of *Romance*. ¼ hr. below *Fiéry* is the first hamlet, *S. Jacques*, or *San Giacomo d'Ayas* (1,676 m., 5,499 ft.) Lower down (char road all the way to *Verrès*) the scenery is very beautiful, and deserves more attention from English travellers than it has yet received. It is a walk of 3 hrs. more, passing about half-way the chief village, *Ayas* (1,710 m., 5,610 ft.), and the vestiges of a lake caused by a great landslip, to *Brusson* (1,332 m., 4,370 ft.), a finely-situated village (with a good mountain inn) on the most frequented route from *Aosta* to *Gressoney* (see Rte. I). (A traveller bound from *Fiéry* to *Châtillon* by the *Col de Joux* need not descend as far as *Brusson*, but may find a path which leaves the valley higher up.) Below *Brusson* the valley is called *Val Challant*. It is 3 hrs. from *Brusson* to *Verrès*, beneath the fine ruins of the castle of *Grâines*, and past several villages of *Challant*, which gave their name to a powerful mediæval feudal dynasty, the lords of the entire *Ayas* valley. It is said that the inhabitants of certain villages in the glen held their lands by the quaint tenure of covering with earth the gl. on the *Becca Torché* (3,015 m., 9,892 ft.), S.E. of *Brusson*, so that the complexions of the ladies of the house of *Challant* might not suffer from the

glare during their summer sojourn at their castle of Graines.

The way down the valley is throughout very beautiful, but it is very hot, and many cretins and goitred persons are seen, though not in such large numbers as in former years. *Verrès* is a station on the railway from Ivrea to Aosta, 18 m. from Ivrea, and $23\frac{1}{2}$ m. from Aosta, which is described in § 15. Rte. A.

ROUTE D.

ZERMATT TO PONT ST. MARTIN BY THE LYSJOCH AND THE VAL DE LYS.

It has been already pointed out (Rte. A) that the greatest of the tributary glaciers flowing from the mass of Monte Rosa is the *Grenz* gl., which descends from the great snowy plateau forming the central portion of that group, and lying between the Dufourspitze and the Lyskamm. As it is well seen from the Gornergrat it was natural that soon after the opening in 1854 of the inn on the Riffel mountaineers should seek a way across the ridge at the head of this plateau into the Val de Lys, or Gressoney valley. This was successfully achieved in 1859 by Messrs. W. and G. S. Mathews. But many years previously this watershed had been reached and traversed, though the descent to the Gorner gl. had never before been made. In the Val de Lys there was a tradition that behind the snowy ranges which close its head there was a 'lost valley,' and it was to verify this that in 1778 seven young men of Gressoney, led by N. Vincent, set out on an adventurous quest. This party gained a rocky tooth just W. of the lowest depression in that ridge ($\frac{1}{4}$ hr. W. of the point crossed by the route of the Lysjoch), and on the watershed. This was named by them the 'Discovery Rock'

('Entdeckungsfels'), as from it they looked down on the 'lost valley,' filled in its higher part by the ice stream of the Gorner gl., and girdled by a long line of savage peaks from the Mischabelhörner to the Dent Blanche. Many years later this ridge was traversed to the great snowy plateau on the N., first by Zumstein and J. N. Vincent (son of the hero of 1778), in 1820, when on their way up the Zumsteinspitze, and later in 1842 by Signor Gnifetti, on his way to the conquest of the Signalkuppe or Punta Gnifetti, not to mention the other expeditions of the adventurers before their final successes. But *as a pass* the Lysjoch was discovered and crossed in 1859 only. It is an easy expedition, but is very laborious if the snow is soft, so that an early start is most desirable. 10-11 hrs. suffice from the Riffel to Gressoney under ordinary circumstances.

The first part of the route, as far as the Bétémps Club hut on the Plattje rocks, is identical with that to the Dufourspitze ($2\frac{1}{2}$ hrs.) The Grenz gl. may be ascended without difficulty, but it is best, when high up, to make a bend towards the E., as the true pass, the lowest depression, is defended by an ice precipice, so that the ridge must be crossed at the next gap to the E., between a snow dome and the Parrotspitze. On the way up to the pass the traveller crosses the Grand Plateau of Monte Rosa, a nearly level snow tract, more than 1 m. in breadth, and about 4,200 m. (13,780 ft.) in height, the S. peaks of Monte Rosa rising round it as low hills of snow, broken by projecting rocks. The pass is 4,277 m. (14,033 ft.), and commands, as might be expected from its great height, a glorious view. The traveller looks upon the great plain of Piedmont, enclosed by the Ligurian Appennines, and the curving line of the Maritime and Cottian Alps, from which, at a distance of nearly 100 miles, rises the noble pinnacle of Monte Viso. In the immediate foreground

is the broad eastern arm of the Lys gl., bounded on the r. by a long spur of the Lyskamm, and on the l. by the line of peaks from the Parrotspitze to the Vincent Pyramide.

From the pass most of the minor summits of Monte Rosa, from the Parrotspitze southwards, can be climbed directly in 1 hr. or less, while the Lyskamm is accessible in 3 hrs. along the E. arête, on which great care is always required, as it is often heavily corniced.]

In about 1 hr. the descent is made without difficulty by the E. side of the E. arm of the Lys gl. to the **Gnifetti Club hut** (3,647 m., 11,966 ft.), on the Hohllicht, the best headquarters for all expeditions on the S. side of the mass of Monte Rosa.

Hence there is a very fine view over the wide E. arm of the Lys gl., which unites with the W. arm, flowing from between the Lyskamm and Castor, below the steep rocky promontory called the *Nase*. This is the S. end of the great S. buttress of the Lyskamm, and its highest point is 3,719 m. (12,202 ft.) It may be easily visited from the Club hut by crossing the E. arm of the Lys gl., and, notwithstanding its great height, produces several kinds of flowering plants.]

From the Gnifetti hut the inn on the Col d'Olen can be reached in 1 hr., or Alagna, in the Sesia valley, in 3 hrs.; for both, the Garstelet and then the Indren gls. are crossed in a S.E. direction to the Colle delle Pisse. To gain the inn hence it is necessary to keep nearly due S. by a good made path, while if bound for Alagna the track from the Colle delle Pisse is followed in an E. direction down the Bors glen to the main Sesia valley, which is descended past the Pile Alp to Alagna.]

$\frac{1}{2}$ hr. below the Gnifetti hut is the ruined *Linty hut*, on the Unterlicht. Hence there are several ways to Gressoney (3 hrs. from the higher hut). The usual way descends nearly due S. to the *Lavets* chalets, a little

beyond which the Col d'Olen mule rack is struck, and followed past *Orsia* to Gressoney La Trinité, but it is a more attractive route to leave the mule track at the first Gabet chalets, and descend past the lake of that name and through the lateral glen of *Netschio* direct to Gressoney La Trinité. It is also possible to go S.W. from the Linty hut, and traverse the *Salzafurka* to the glen of the same name, by which the *Cortlis* chalet (2,007 m., 6,585 ft.) is attained.

In 1861 Messrs. W. Mathews and F. W. Jacob discovered a lower but more difficult pass from the Riffel to the Val de Lys, which can also be used as a route to the Ayas glen. This is the *Felikhoch* (4,068 m., 13,347 ft.), between Castor and the Lyskamm. The ascent from the Riffel across the Gorner and up the crevassed Zwillings gl. takes about $5\frac{1}{2}$ hrs. From the pass the Lyskamm can be climbed by a very long and in part narrow arête, while Castor can be gained in 1 hr. by an easy snow ridge, and is worth ascending for the very fine panorama to be obtained from the summit. *The point at which the ridge is passed lies close to the E. foot of Castor*, the lowest depression lying farther E., above an ice precipice the descent of which by mistake has cost one party their lives. Thus the actual line which must be taken does not lead from the Zwillings to the Lys gl., as might be expected, but from the Zwillings gl. to the Felik gl., near the ridge between the Lys and Ayas valleys. On this ridge, due S. of Castor, is the **Quintino Sella Club hut** (3,601 m., 11,815 ft.), gained in about 1 hr. from the pass by most parties, whether bound for Gressoney or Fiéry, unless those bound to the latter village prefer to bear S.W. much higher up, and go down the narrow Castor gl. and the E. side of the E. arm of the Verra gl. direct. From the Club hut Fiéry may be reached in 3 hrs. by descending S. towards the Bettliner

Pass, and crossing the ridge to the N. of that pass, so as to gain the chalets at the foot of the Verra gl. Travellers bound for Gressoney may gain the Cortlis chalet direct from the pass by going from the Felik gl. by a rocky ravine to the moraine on the r. bank of the Lys gl. From the Club hut, however, Gressoney may be more conveniently gained by going S. to the Bettliner Pass track, not far from that pass, and then following it to the Cortlis hut.]

This chalet commands a fine view of the Lys gl. and the peaks around it, and was used as night quarters by some of the early explorers of this district; this is no longer possible without permission from the owner, M. de Peccoz, and its place has been taken by the Q. Sella Club hut. (From Cortlis the *Telchenhorn*, 2,834 m., 9,298 ft., may be ascended in 2 hrs., and commands a very fine view of the neighbouring gls.) It is about 1 hr. down the valley from Cortlis to Gressoney La Trinité. On the way the hunting box of *Stavel* (the summer sojourn of the Queen of Italy) is passed. It belongs to the Baron de Peccoz, whose family, of Gressoney origin, made its fortune in Germany and was ennobled by the late King of Bavaria. The late Baron was a great chamois hunter, and in his house at Gressoney St. Jean is deposited his collection of stuffed animals and birds, killed by himself, which deserves a visit. At *Orsia* the mule track from the Col d'Olen is joined.

Gressoney is the name of the basin which includes all the upper part of the Val de Lys. The upper village is called *Gressoney La Trinité* (1,627 m., 5,338 ft.), and is about 4 m. ($\frac{1}{2}$ hr.'s drive) by a carriage road from the lower village, *Gressoney St. Jean* (1,385 m., 4,544 ft.). 20 min. below La Trinité, in a very fine position at a sudden drop in the valley, is the new and splendid *Hôtel Miravalle*. Some way below is *Noversch*, the

home of Zumstein, one of the early explorers of the upper regions of the Monte Rosa group. The situation of these villages, amidst meadows and fruit trees, in a green basin formed by the widening of the valley, and yet in full view of the eternal snows, is very beautiful. The best book on the region is that by Signori V. Sella and D. Vallino, mentioned in the Introduction to this Section, while the Gressoney Section of Ratti and Casanova's '*Guida Illustrata della Valle d'Aosta*' appeared in a separate and revised form in 1897.

[Many pleasant excursions and ascents may be made in the neighbourhood. Foremost among them is a visit to the Gnifetti, or the Q. Sella Club huts (5-6 hrs.), whence there are very fine views, easily extended by ascending some of the neighbouring eminences. The *Corno Bianco* (3,320 m., 10,893 ft.) may be best reached by the Rissuolo pass and the S.E. ridge, and may be taken on the way over to Alagna. Other ascents are more conveniently described in connection with the easy passes whence they are best made—the *Telchenhorn* (see above), the *Grauhaupt* (Rte. H), and the *Mont Néri* and the *Combetta* (Rte. I).]

The traveller will be struck by the fact that the tongue spoken in the Gressoney basin is German, resembling the dialect prevailing in the upper Vallais. It is known that long before 1218 this basin was a fief of the Bishop of Sion, who, probably before that date, brought in Vallaisan colonists over the St. Théodule. Some poems in the local dialect are printed in Signor Sella's book. The Vallaisan settlement here has historically nothing to do with that at Macugnaga, which is known to have taken place from the Saas valley in the second half of the thirteenth century.

There is now a first-rate carriage road from St. Jean to Pont St. Martin

(about 17 m., $3\frac{1}{4}$ hrs.' drive). About $\frac{1}{2}$ hr. below St. Jean the valley contracts. The road crosses to the r. bank of the stream on leaving the Gressoney basin, and is very picturesque beyond, being carried among huge blocks that have fallen from the heights above. After a double crossing it returns to the l. bank at *Gaby*, where the appearance of the walnut denotes a change of climate.

[Hence several passes lead over in 5 hrs. to Piedicavallo, at the head of the Andorno valley: see Rte. K.]

Beyond is ($8\frac{1}{2}$ m.) *Issime*, about half-way between St. Jean and Pont St. Martin.

[Hence the *Mont Néri* (3,070 m., 10,073 ft.) may be reached in 6 hrs. by way of the Col de Chasten, while the *Becca Torché* (3,015 m., 9,892 ft.)—celebrated from the quaint feudal tenure connected with it (see Rte. C)—is accessible in 6 hrs. by way of the *Col de Dondeuil*, leading over to Verrès. Both summits command magnificent panoramic views.]

Below Issime the torrent traverses the remarkably deep and narrow *Guillemore* chasm, which it has cut through the gneiss rock. The difference between ice-worn and water-worn rocks may be well studied here, as they are seen in close proximity. The chestnut becomes the prevailing tree as the traveller descends to ($2\frac{3}{4}$ m.) *Fontainemore*, where the new road crosses to the l. bank.

[A path leads hence in about 6 hrs. to the Sanctuary of Oropa, Rte. K, by the *Col della Barma d'Oropa* (2,261 m., 7,418 ft.) The ascent is rather long through a lateral glen richly wooded below, wild and stony towards the top. Thence to the Alpe della Strada, about 1 hr. above Oropa, the path is faintly traced, and a guide is almost necessary.]

The scenery of the main valley is throughout very fine. The first vines are met with at ($1\frac{1}{2}$ m.) *Lilianes* (for the pass to Graglia see Rte. K). Hamlets and scattered houses are seen perched on steep

slopes up to a height of 2,500 ft. above the stream. A steep descent over ice-worn rocks takes the traveller down to ($4\frac{1}{4}$ m.) **Pont St. Martin**, $9\frac{1}{2}$ m. from Ivrea and $7\frac{1}{2}$ from Verrès, on the railway from Ivrea to Aosta, which is described in § 15. Rte. A.

ROUTE E.

ZERMATT TO VARALLO BY THE SESIAJOCH AND THE VAL SESIA.

In a former edition the pass here described was not admitted without hesitation, and in the present edition it is retained for topographical reasons, so that this Rte. may range with its neighbours. The *Sesiajoch* must always be a difficult and dangerous expedition, especially the descent on the Italian side, made in 1869 by two English ladies, with Jean Martin. The pass itself was first crossed in 1862 by Messrs. H. B. George and Moore, and has since been traversed by a small number of travellers.

A traveller who has reached the Grand Plateau of Monte Rosa, after ascending the Grenz gl., has on the E. the Signalkuppe, and on the S.E. the Parrotspitze, connected together by a ridge which rises about 300 ft. above the level of the Plateau. On gaining this ridge he looks down upon the Sesia gl., and the head of the Val Sesia, lying some 8,000 ft. below him, and separated by a series of precipices and ice slopes that are only less formidable in appearance than those of the E. face of Monte Rosa. The attempt to force a direct passage across this barrier, 4,424 m., 14,515 ft. in height (one of the loftiest in the Alps), must be counted among the most daring exploits ever achieved in the Alps. The Editor (J. B.) has been favoured with the following notes by Mr. H. B. George. The guides were Christian Almer and Matthäus z.

Taugwald:— We slept at some good chalets about $2\frac{3}{4}$ hrs. from Alagna, reached by the l. bank of the torrent from the Sesia gl., and left our quarters at 2.35 A.M. For 3 hrs. we marched over slopes generally knee-deep in rhododendron, and at last very stony, to a point some way up the l. bank of the Sesia gl. After a short halt we made our way across the gl. to the r.-hand corner of the base of the Parrotspitze, which lay nearly opposite us, and began climbing the rocks of which it is composed. After 2 hrs. of very easy but rapid ascent we had some steep snow slopes to mount, and then came to the foot of the arête, which took us almost to the top. The ascent of this is an affair of extreme difficulty, and would scarcely have been possible but for Almer's skill and determination. After climbing some way we bore to the r., and tried to get along the ice slope to the couloir between the Parrotspitze and the Signalkuppe, with a view to making our way up to the lowest point between them, but the couloir itself looked frightfully steep, besides being dangerous from avalanches: so we relinquished it for the arête. This consisted of extremely steep rocks, often affording very slight footing, intermixed with narrow edges of snow, so steep as hardly to admit of steps being cut in the sides of them. After $3\frac{3}{4}$ hrs. of this work we came to a slope of ice, covered a few inches deep with snow varying from 43° to 50° , which in rather more than an hour, or nearly 13 hrs. from our starting point, brought us to the top, i.e. to a point on the ridge going up from the true pass to the Parrotspitze, about (?) 120 ft. below that peak, and perhaps 60 ft. above the true col, which is practically inaccessible. The descent of the Grenz gl. was straightforward. It would be impossible to take this pass from Zermatt, or either way late in the year when the snow was gone from the gaps in the rock arête, and off the snow slope below the top. Christian Almer led the

way throughout, never being at fault for a moment, although he had only seen the mountain for 10 minutes through a break in the clouds two days before, our whole route remaining in cloud till we were fairly on the base of the Parrotspitze. The view from the summit, including the Italian lakes and Monte Viso, was marvellous.' (H. B. G.)

On the second passage the party slept at chalets higher up, and reached the pass in $9\frac{1}{4}$ hrs., exclusive of halts. (The ridge between the Parrotspitze and the Ludwigshöhe has also been crossed by a difficult pass, called *Piodejoch*, or *Ippolita Pass*.)

The Sesia gl. is formed in the angle between the E. ridge of Monte Rosa, extending from the Signalkuppe to the Monte delle Loccie, and the S. ridge connecting the Parrotspitze and the Vincent Pyramide. Owing to the great steepness of the walls of rock that enclose it, no great accumulation of snow takes place at a high level, and the dimensions of the gl. are small as compared with the height of the neighbouring mountains. The N. branch, now called the *Vigne* gl., descends from the Col delle Loccie (Rte. G), and the S. branch is the *Piode* gl.

To the S.W. of the Piode gl., on the E. side of the ridge connecting the Vincent Pyramide with the Colle delle Pisse (Rte. G), is the *Bors* gl., which sends down its torrent through the Bors glen to join the Sesia. Travellers visiting the Val Sesia should not fail to approach the base of Monte Rosa at least as near as this point, which may be reached in 2 hrs. from Alagna. The view may rank as second only to that from above Macugnaga. A still nearer view may be gained by ascending the ridge N. of the Bors glen ($1\frac{1}{2}$ hr. from the Pile huts). At the head of the latter valley is seen a very fine waterfall, that of *Pisse*, (?) 600 ft. in height, fed by the snows of the Vincent Pyramide.

In descending from the Piode gl. to Alagna it is best to keep to the l.

bank of the torrent until, after joining the track from the Turlo Pass (Rte. H), a bridge, with an oratory beside it, is crossed. The way then lies chiefly on the r. bank, again crossing and re-crossing the Sesia. In coming down from the Pile alp huts the path lies on the r. bank of the Sesia, descending a steep staircase of rock at the base of the *Stoffelberg* (which shuts out the view of Monte Rosa), until, at the oratory above mentioned, it joins the main track to Alagna.

The position of **Alagna** (1,191 m., 3,908 ft.) is not very striking, but the neighbourhood offers some of the finest scenery in the Alps. The fullest guide book for the Val Sesia and its tributary glens is that by F. Tonetti, published at Varallo itself.

[Besides the passes described in Rtes. G, H (especially the Col d'Olen), and I, the mountaineer may devise many excursions of the highest interest. One deserving of especial notice, hitherto much neglected by English tourists, is the ascent of the **Corno Bianco** (3,320 m., 10,893 ft.), the highest summit in the ranges S. of the mass of Monte Rosa. From Alagna it is best gained by way of Riva Valdobbia, the Vogna glen, the path to the Risuolo Pass, and the S.E. ridge (c. 7 hrs.), but the most convenient starting point is the Hospice on the Col de Valdobbia (Rte. I), whence the ascent takes 6 hrs. More difficult routes have been forced up from the Pujò gl. on the N.E., and along the N. arête.]

The upper part of the **Val Sesia** is German-speaking, the language being of the Upper Vallais type, though frequent intercourse with the Italian-speaking folk of the lower part of the valley has caused some intermixture of dialects. The Counts of Biandrate (who settled the Vallais colony at Macugnaga) were very powerful in the upper Val Sesia before 1270, and if the German-speaking population of Alagna and Riva was introduced by them it must have been before that date. But it is far more probable that

it is an offshoot of the Vallais colony at Gressoney, with which place there is easy communication over low passes.

There is now a good carriage road from Alagna to Varallo (23 $\frac{3}{4}$ m., 4 $\frac{1}{2}$ hrs.' drive), the road keeping throughout on the l. bank of the Sesia.

$\frac{1}{4}$ m. below Alagna is **Riva Valdobbia** (for the Col de Valdobbia see Rte. I), at the junction of the *Vogna* glen with the main valley. There is a striking contrast between the apparent poverty of the people and the comparative splendour of the church, covered without by fresco paintings of considerable merit, the work of a native artist, one of three brothers, all of whom attained great local celebrity. From the village there is a grand view of the peaks and glaciers at the head of the valley. The Abbé Carestia, of Riva, is an excellent botanist. The flora of the southern and eastern valleys of Monte Rosa offers a great general resemblance, but includes several species very rare or unknown elsewhere in the Alps. Of these may be noted *Senecio uniflorus*, *Campanula excisa*, *Potentilla grammopetala*, and *Saxifraga stenopetala*. Still more interesting is the discovery by M. Carestia of *Cherleria imbricata* on the Nase, and near the old Vincent hut, above the Lys gl.

Close to Riva the schists constituting the rocks at the head of the Val Sesia give place to gneiss, which extends hence to the Val d'Aosta, and farther E. is represented by syenite.

The descent is easy and agreeable from Riva to (5 $\frac{1}{2}$ m.) *Mollia*. The valley, which is throughout its length very sinuous, here makes a sharp turn nearly due S. A little way beyond is (6 $\frac{1}{2}$ m.) *Campertogno*, soon after which there falls in from the W. the char road from Rassa, in Val Sorba, through which leads a pass to Piedicavallo (Rte. K). The scenery is extremely grand, though without distant views. At (9 m.) *Piode* the road turns E. and passes by (11 $\frac{1}{4}$ m.) *Scopello*, where formerly the copper ore raised near Alagna and elsewhere in the valley

was smelted (now nickel and cobalt only), and where the valley bends N. of E. The next village is *Scopa*. The vegetation increases in richness as the road reaches (14½ m.) *Balmuccia*, at the junction of the *Va Sermenza*, or Val Piccola (Rte. I), with the main valley, called, by contrast, *Val Grande*. Here the stream turns again due E, and the valley gradually opens out as the traveller approaches **Varallo**.

The situation of this little town, at the junction of the Val Sesia with the Val Mastallone (Rte. L), and in the immediate neighbourhood of much beautiful scenery, suffices to render it attractive. But the main object of interest to most visitors is the *Sacro Monte*, a famous Sanctuary founded in 1486, and adorned by famous artists with works that mark a stage in the development of Italian art. The hill, now called *Sacro Monte*, is covered with a series of nearly fifty chapels or oratories, containing modelled groups of life size, painted and clothed, representing events nearly all taken from the New Testament. (English readers may consult Mr. Samuel Butler's book, entitled 'Ex Voto Sacro Monte; or, New Jerusalem at Varallo,' 1888.) Some of these groups and individual figures, modelled by Tabachetti, are extremely fine, while those of the chapels painted by Gaudenzio Ferrari and his pupils are very interesting. The chapels are numbered, and those best worth examination are: 5, the Appearance of the Star in the East; 17, the Transfiguration; 38, the Crucifixion. The paintings on the walls and ceiling of the last-named chapel are the best on the *Sacro Monte*, and are fine works of Gaudenzio Ferrari. Other works of importance by the master are the frescoes which cover the screen between the choir and the nave in the church of Santa Maria delle Grazie, at the foot of the *Sacro Monte*, and an altar-piece in the parish church of San Gaudenzio.

A branch of the Italian Alpine Club has been opened at Varallo, and mem-

bers of the English Club who may call there will find books, maps, &c., in addition to the courteous kindness usual among all ranks in Italy.

Varallo stands upon true granite, which forms a band extending N. to the head of the *Val Bagnola*, and S.S.W. to Biella (Rte. K). Outlying masses of the same rock are seen in the well-known sites of Mont'Orfano and the Mottarone, near the Lago Maggiore. (For the routes from Varallo to Omega and the Val Anzasca, see Rtes. L. and M.)

There is a lovely way from Varallo to Orta by the Colle della Colma (Rte. L). But most travellers will probably take the railway, which runs in 34 miles from Varallo to Novara. 8 miles from Varallo is *Borgo Sesia*, at the meeting of delightful routes from Biella, and from Orta by the *Valduggia* (Rte. K). Between *Borgo Sesia* and *Romagnano* the line runs between porphyritic rocks, in which masses of Jurassic limestone and marine tertiary molasse are strangely intermixed. From *Borgo Sesia* the route lies amidst richly-wooded slopes, picturesque with churches and ruined castles, to (16¼ m.) *Romagnano*. Here the river *Sesia* enters the plain of Piedmont, and flows to Vercelli. 18 miles further is *Novara*, at the junction of the lines from Turin, Genoa, Milan, and Domodossola.

ROUTE F.

ZERMATT TO DOMODOSSOLA BY
THE WEISSTHOR AND THE VAL
ANZASCA.

It has been pointed out above (Rte. A) that the Gorner and Findelen gls. flow from a common *név*, which reaches to the crest of the steep black precipices, streaked with gullies, that close in the head of the *Val Anzasca*. It seemed from the

Swiss side as if a way must lie over this gently sloping *névé* into Italy; but in early days the Italian precipices were regarded as too formidable to be even tried, and the usual route (connected with a sixteenth-century pilgrimage from Zermatt to Varallo by way of Macugnaga) lay round the N. side of the hump (3,612 m. of the Swiss map) which rises at the junction of the main ridge running N. and S. with a great spur running E. and W. This is, no doubt, the oldest of all the Weissthors, and was crossed certainly in 1825 by Brantschen; it is now known as the *Schwarzberg Weissthor*. But there was also a tradition of a more direct pass, which is now believed to be the present *Fillarjoch*, or *Old Weissthor*, between the Jägerhorn and the Cima di Jazzi; it was traversed in 1851 by Herr A. Schlagintweit, and rediscovered independently by Sir Martin Conway in 1882. By 1848 an easier, yet very direct, route had been discovered by Stephen Biner and Matthias z. Taugwald; this lay N. of the Cima di Jazzi, and is now known as the *New Weissthor*, being the pass commonly used by parties going from Zermatt to Macugnaga. The history of all these passes is very intricate, and those wishing for further details on historical points are referred to Sir Martin Conway's article in vol. xi. of the 'Alpine Journal' (corrected in one important point as to the true Old Weissthor by his 'Eastern Pennine Guide,' p. 67) and to two articles by Dr. Schulz in vols. 17 and 18 of the 'Jahrbuch' of the Swiss Alpine Club.

It seems most convenient to describe the three main Weissthors in topographical rather than in historical order.

(a) *The Old Weissthor*.—The true pass (3,485 m., 11,434 ft.) lies just N. of the Jägerhorn, and is quite an easy pass if the right line be taken up the final rock wall, which should be climbed to the N. of the more

southerly of the two snow couloirs. The ascent is made from the Fillar gl.

Another route over this ridge starts from the *Castelfranco* gl., on the N. of the Fillar gl. Hence one of the three great couloirs, or the rock ribs between them, is ascended, but all are more or less dangerous by reason of falling stones. It was by two of these gullies that Prof. Tyndall and Mr. Tuckett mounted in 1861, searching for the lost Old Weissthor.

(b) *The New Weissthor*.—The lowest point in the ridge N. of the Cima di Jazzi is the *Mittelthor*, and is accessible on the E. side by a great snow couloir. But the pass now usually called the *New Weissthor* is rather higher (3,580 m., 11,746 ft.), and lies on the S. shoulder of the snow hump marked 3,645 m. on the Swiss map. The ascent to the pass from the Riffel by way of the Gorner gl., or from Zermatt by the Findelen gl. (4–5 hrs.), is perfectly simple; but on reaching the crest of the ridge the scene is changed as if by enchantment. Instead of toiling over a snow field with no object visible save boundless fields of *névé* and occasional black rocks, the traveller finds himself on a narrow ledge of rock apparently overhanging a precipice, which extends far to the S. till it is united with the tremendous E. face of Monte Rosa. The highest summit on this long ridge is the *Cima di Jazzi*, 3,818 m., 12,527 ft. (Rte. A. 2. f), accessible by a snow slope in $\frac{3}{4}$ hr., but generally crowned by a snow corniche, so that caution should be used in approaching the edge of the precipice. Looking downwards, the traveller sees, if the valley below be clear, the lower end of the Macugnaga gl., about 6,000 ft. below him, but appearing so near that a stone flung from the hand might reach it. It far more commonly happens, even in fine weather, that a sea of cloud hangs like a pall between the spectator and the valley

below. Lying, as do these clouds, some thousands of feet below him, he supposes that they fill the valley, while the people of Macugnaga, seeing clouds three or four thousand feet above their heads, imagine that they cover the mountain tops. The rocks adjoining the pass afford a home to a few flowering plants, e.g. *Androsace glacialis*, *Eritrichium nanum*, *Gentiana brachyphylla*, and *Saxifraga planifolia*. This is one of the highest stations at which flowering plants have been found in the Alps.

Some rocks lead down to a great snow shelf, which is followed for some distance (*not* to its end), when easy rocks give access to the foot of the *Roffel* gl. Here is the **Eugenio Sella Club** hut (3,150 m., 10,335 ft.), $\frac{3}{4}$ h. from the pass. The descent thence to Macugnaga offers no difficulties, and the N. side of the Anza is followed to Macugnaga (2 $\frac{1}{2}$ –3 hrs. from the pass). It is, of course, easy to vary the pass by climbing another broad shelf of snow on the face of the Cima di Jazzi, and so mounting direct to the summit of that peak (2 hrs. from the Club hut). Or travellers who fear the steep descent may in a few steps reach the pass next to be described.

(c) **The Schwarzberg Weissthor.**

—This is the pilgrims' pass, and is quite easy, while it is as short to descend from it to Mattmark, in the Saas valley, as to Macugnaga. Prof. Ulrich's party in 1852 seems to have been the first to go down to Mattmark, while Mr. Marshall Hall, in 1849, seems to have been the first English traveller who actually crossed it to Macugnaga.

If coming from the Riffel, it is necessary to bear a little to the l. at the last, while if coming direct from Zermatt a slightly more E. course must be taken than if the New Weissthor itself was the object. In either case the snow hump (3,612 m., 11,851 ft.) at the junction of the main ridge and the great E. spur is attained.

5 min. descent E. along the crest of the latter (this is the narrow 'Arête Blanche' of the old books) then leads to the parting of the ways. A party bound for *Mattmark* should then bear to the N.E., so as to gain the *Schwarzberg* gl., down the l. bank of which, and the r. bank of the stream issuing from it, the route lies, the Mattmark inn being gained in 3 $\frac{1}{2}$ hrs. from the pass. If it be desired to descend to *Macugnaga*, this may be effected by going down rotten rocks to the *Roffel* gl. (1 hr.), or by passing the same ridge farther to the E., or by traversing the upper snows of the Schwarzberg and Seewinen gls. to the Monte Moro Pass itself (Rte. N), by the track from which Macugnaga is attained.

Macugnaga is a wide grassy basin, shut in on all sides by towering mountains. There are many hamlets scattered throughout it, the inns being at that called *Staffa* (1,327 m., 4,354 ft.) A short way off is the *old* church, which has a Gothic S. doorway and choir windows, and is thus a monument of the German-speaking colony settled here for the last 600 years, so that the local tongue is the Vallaisan dialect of German. For many hundred years the basin of Macugnaga, the history of which was long quite distinct from that of the Val Anzasca, of which it forms the termination, was simply a pasture belonging to the Benedictines of Arona; but in the thirteenth century it passed (as did the Val Anzasca) into the possession of the Counts of Biandrate, a powerful Piedmontese family. About the same time a lucky marriage brought to the chief of the family the extensive possessions of the lords of Visp, at the mouth of the united Zermatt and Saas valleys. Owning, therefore, the two Alpine glens, which are only separated by the easy pass now called the Monte Moro (Rte. N), and finding the head of each valley inhabited only by shepherds in summer, Count Godfrey conceived and carried out a bold plan, which has left its mark on their local history. In 1250 it is recorded that

he established a colony of Italian-speaking people, from the Val Anzasca, in the valley of Saas, above the Martinswald, which therefore became Italianised, while a few years later he transported a band of German-speaking colonists from the neighbourhood of Visp to the pasture basin of Macugnaga. Hence we find German names at Macugnaga; e.g. the Anza is called the Visp. But the similar colonies in the Val Sesia, perhaps due to Biandrate influence, are probably not an offshoot of the Macugnaga settlement (see Rte. E).

[Besides the Weissthor, Macugnaga may also be reached by mountain routes from the Val Sesia and from Saas (Rtes. G, H, I, and N), but in any case the excursion to the Belvédère and the Macugnaga gl. should be made, while that up to the Monte Moro Pass is strongly recommended to those who do not propose to cross that pass to Saas, and active walkers will be tempted by the ascent of the Pizzo Bianco.

It is best to go to the *Macugnaga gl.* by one route, and to return by another, so as to vary the points of view. In approaching it the traveller has before him the precipices up which lie the routes to the different Weissthors described above. Mounting along the r. bank of the Anza, he will gain (2 hrs. by mule path) the steep, rocky eminence called the **Belvédère**, 1,932 m., 6,339 ft. (where there is now a small inn), which breaks the descending ice stream of the Macugnaga gl. and divides its lower end into two branches. The traveller should then cross the W. arm of that gl. to the *Jazzi* huts, at the base of the Cima di *Jazzi*, and should continue along the slope to those of *Fillar*, at the foot of the gl. of that name, and higher up than the *Jazzi* huts. Crossing a steep moraine, he should now return to the Macugnaga gl., here much crevassed, and make his way for some distance towards its head, immediately under the 8,000 ft. of precipice that is crowned by the highest summits of

Monte Rosa. (For the dangerous ascent from this side see Rte. A. 3. a. i.) The usual limit of the excursion is a waterfall—fed by the snow slopes that here and there cling to the face of the precipice—which disappears in a chasm in the ice. The monotonous roar of the cataract is broken from time to time by the thunder of avalanches. Language is incompetent to give any idea of the grandeur of the scene.

Returning, and bearing towards the E. moraine, the gl. is left near the chalets of *Petriolo*, at the base of the Pizzo Bianco, which forms the E. side of the great amphitheatre. The enormous size of the blocks that cover the lower slopes near the chalets excites wonder. A very rough path leads along the mountain-side, for the most part high above the gl., and descends into the main valley near the foot of the Belvédère. It is better to keep along the great r.-hand moraine of the gl., and then cross the gl. to the Belvédère. The whole excursion need not take more than 8 hrs.

The ascent of the **Pizzo Bianco** (3,216 m., 10,552 ft.), made in 1789 by Saussure, offers a view which is in some respects unsurpassed in the Alps. It can be effected in 4-5 hrs. from Macugnaga. The way is by the track leading to the Belvédère. When near its base a cattle track turns sharply to the l. and mounts the rocky slope by zigzags. Bearing always to the l. an alp is passed, and an ascent made towards the ridge connecting the *Pizzo Nero* (2,739 m., 8,987 ft.), a prominent point overlooking Macugnaga, with the much higher Pizzo Bianco. Before attaining the ridge it is necessary to bear somewhat to the r., and to keep straight up over rocks and snow slopes. The summit lies some way back, and is reached by following the crest of a snow ridge.]

There is a mule track from Macugnaga (soon to be a carriage road) to the foot of the Morghen, whence a carriage road descends the valley to Piedimulera. A walker may reckon

about 6 easy hrs. from Macugnaga to Piedimulera (14 m.)

In descending from Macugnaga the traveller has the disadvantage of turning his back upon Monte Rosa, which at intervals comes into view; but the near scenery is throughout so beautiful that it fully engages his attention, and, if he be wise enough not to hurry, he may halt at intervals to enjoy the wonderful views of the great mountain. The first of these is found at *Borca* ($\frac{1}{2}$ hr.), at the mouth of the Quarazza glen (Rte. H). $\frac{3}{4}$ hr. lower is *Pestarena*, a poor-looking village with a mining population. Gold, associated with iron pyrites, is found here in quantities which repay working, and this is one of the few spots in Europe where it has been continually extracted for centuries, apparently since the time of the Romans. These mines are now worked by an English company. A short way below Pestarena the track passes to the r. bank of the Anza, and soon encounters a low rocky hill, the *Morghen* (a Teutonic name), which appears to bar the valley, and has long impeded the construction of a road up to the mines. Here the basin of Macugnaga is quitted. The Anza forces its way through an impracticable ravine, while the mule path and a miner's track (easier for pedestrians), after mounting a short way, descend more steeply on the E. side of the barrier, and at its base return to the l. bank at the hamlet of *Campioli*, where the carriage road (3 m. from Macugnaga) now begins. In the early summer the beautiful *Saxifraga cotyledon* is plentiful on the rocks hereabouts. A short distance farther is *Prequartera*, whence a path leads up a glen on the l. to the Saas valley, across the Mondelli Pass, which is shorter than the Monte Moro, but misses the grand scenery. In $2\frac{1}{4}$ hrs. from Macugnaga the traveller reaches *Ceppomorelli* (753 m., 2,471 ft.), and $\frac{3}{4}$ hr. lower down is *Vanzone*, where two churches connected together are worth a visit.

(For the passes from these villages to the Val Antrona see § 21. Rte. E.) At Ceppomorelli a view of the E. face of Monte Rosa, combined with a new foreground, but always surpassingly grand, opens out. It is hard to say that anything is wanting to complete the beauty of the Val Anzasca. Monte Rosa remains constantly in the background, unsurpassed in the boldness of its form and the vastness of its proportions. The middle distance presents mountain ridges of varied form, clothed with pine forest or broken into rocky masses. The vegetation of N. Italy is in the foreground, rich with chestnuts, and vines, and fig trees, and all the accessories are characteristically Italian. Instead of small, dark, wooden houses grouped round the pointed spire of a village church, we have here massive buildings in solid masonry, brilliantly white, and nearly all covered, within and without, with rude frescoes: and the square *campanile* marks from a distance the village place of worship.

$\frac{3}{4}$ hr. from Vanzone is *Ponte Grande* (524 m., 1,719 ft.), which takes its name from a high bridge across the Anza. (For the passes hence to the Val Sesia and Orta see Rtes. I, L, and M, and for those to the Val Antrona see § 21. Rte. E.) (A char road leads hence across the river in $\frac{3}{4}$ hr. to the large village of *Bannio*, the capital of the Val Anzasca, which stands on rising ground, amidst fine chestnut trees, near the junction of the *Val Olocchia* (Rte. I) with the main valley.)

It is about 6 miles (2 hrs.' walking) from Ponte Grande to Piedimulera. The road is carried along the N. side of the valley, at first near the bank of the Anza, then gradually rising to a great height above the stream. A short way below Ponte Grande the torrent issuing from the *Val Bianca* on the N. forms a pretty waterfall, and some way farther is *Calasca*. Beyond the last-named village, on the S. side of the valley, is seen the opening of the *Val Segnara*, leading

to the Val Strona (Rte. M). About 4 miles from Ponte Grande is *Castiglione*. Beyond the village the traveller, once again looking back, may see the range of Monte Rosa in great perfection, and then the road begins to descend rapidly, passing through two short tunnels. The hamlet of *Cimamulera* is left on the way, and the road issues into the Val d'Ossola at *Piedimulera*. This picturesque village is a station on the railway from Domodossola to Novara (§ 21. Rte. A), and is 7 miles ($\frac{1}{2}$ hr. in the train) from the first-named place.

ROUTE G.

TOUR OF MONTE ROSA BY THE HIGH
GLACIER PASSES.

By choosing a wider or a narrower circle round Monte Rosa, a traveller may completely change the character of the scenery through which he will pass in making the tour of the mountain, and in the same degree vary the difficulty of the undertaking. This and the two following Rtes. describe three sets of passes by which this tour may be made, from high glacier passes to easy mule passes.

By the recent erection of two high Club huts on the S. slope of the Monte Rosa range a very fine snow route may be made as follows:—1. From the inn on the St. Théodule Pass (perhaps a very active party could achieve the distance by starting from Zermatt itself) by the snowy plateau S. of the Breithorn to the Schwarzthor route, then ascending Castor and descending to the Q. Sella Club hut (Rte. D)—about 8 hrs. 2. Ascend the Lyskamm by the S.W. arête, and go down the S. arête to the Gnifetti Club hut (9 hrs.), and to the inn on the Col d'Olen (if preferred, the night might be spent at the Club hut, and next day some point of

Monte Rosa climbed, but this would lengthen the round by a day). 3. Sleep at the Faller Alp. 4. By the Colle delle Loccie to Macugnaga; and 5. By one of the Weissthors (Rte. F) back to Zermatt.

The route taken on the first two days has been described in bits in Rtes. A, B, C, and D. If preferred an easier way can be taken to the Q. Sella hut from the St. Théodule or Breuil. This involves crossing the *Col des Cimes Blanches* (2,980 m., 9,777 ft.) This gap is reached from the St. Théodule by bearing due S., and from Breuil by mounting in a slightly S.E. direction. On the other side the descent is made through the Aventura glen to the Ayas glen, a little below Fiéry (Fiéry is reached in 3 hrs. from the St. Théodule, or in about $4\frac{1}{2}$ –5 hrs. from Breuil.) From the Col the view may be extended by climbing the *Gran Sometta* (3,167 m., 10,391 ft.), unless the traveller is in haste and wishes to mount the same day from Fiéry by the gap N. of the Bettliner Pass to the Q. Sella hut (5–6 hrs.)

Again, if a traveller desires to see Gressoney on his way, he could reach Fiéry by any of the ways indicated above, and next day cross one of two passes direct to La Trinité. The N. pass is the *Bettliner Pass*, 2,896 m., 9,502 ft. ($6\frac{1}{2}$ hrs.), which leads to the Cortlis chalet at the head of the Val de Lys, and does not seem to possess any advantages over the S. pass, the *Bettafurka*, 2,676 m., 8,780 ft. (5 hrs.), which is traversed by a mule path. The ascent from Fiéry lies past the hamlet of *Resy* and through the Furka glen, and the descent past the oratory of *Sant' Anna* (whence there is a fine view of the snowy chain on the N.) to *Orsia*, where the mule track from the Col d'Olen is joined. Another way of visiting Gressoney *en route* would be to descend direct thither from the Q. Sella hut.

The Col d'Olen and its neighbourhood are described in the next Rte.

The *Faller Alp* is 4 hrs. from the Col d'Olen inn, or $2\frac{1}{2}$ hrs. from Alagna. (The *Flua Alp*, where fair chalet accommodation is to be had, is still higher, and about 3 hrs. from either Alagna or (by the Bors glen) from the Col d'Olen inn; it is the most conveniently situated night quarters for a party starting from the inn.) Thence the passage of the **Colle delle Loccie** to Macugnaga next day is not a very long expedition. It was first crossed in 1862 by Messrs. J. A. Hudson and W. E. Hall, but the difficulties encountered on that occasion are now in great part avoided. The ascent lies past the *Vigne Alp* and up the *Vigne gl.*, and the pass (3,353 m., 11,001 ft.) is gained without any difficulty (3 hrs. from the *Faller Alp*). The view may be much extended by following the ridge to the S.E. for $\frac{1}{2}$ hr. up the *Monte delle Loccie* (3,498 m., 11,477 ft.), also called the *Cima della Pissa*.

The descent on the Macugnaga side is more difficult. A short steep ice slope (which can be partly turned by steep rocks on the W.) must be cut down, and then the *Loccie gl.* followed till due S. of the *Petriolo Alp*. Some *séracs* are encountered, which in case of necessity can be turned by the steep rocks on the W., but it is generally better to keep to the glacier all the way. Some way S. of the *Petriolo* chalets, on the r. bank, the gl. is left, in order to gain those huts through the glen of the same name, and henceforward the way is one of those described in the last Rte. in connection with the excursion to the gl. from Macugnaga. By this pass Macugnaga is gained in 9 hrs. or so from the *Faller Alp*. The pass must be reckoned as first-rate, both for the grandeur of the scenery and for difficulty.

ROUTE H.

VALTOURNANCHE TO MACUGNAGA
BY THE MIDDLE PASSES.

A traveller wishing to make the tour of the Italian valleys of Monte Rosa may choose an intermediate course between the somewhat arduous passes mentioned in the last Rte. and the easier and more frequented paths described in the next Rte. In four days (an active party could cross the Col de Portola and the Pinterjoch in one day) of very moderate walking much of the most beautiful scenery of this district may thus be seen.

1. The first pass is the **Col de Portola** (unless it be preferred to cross the Col du Tournalin, so as to combine with it the ascent of that fine panoramic point, the Grand Tournalin, Rte. B), which takes 5 hrs. from the village of Valtournanche to that of Ayas. The traveller must descend from the former village for a short distance along the l. bank of the stream, and soon take a path to the l., which before long begins to ascend through a wood. This splits up into numerous tracks, and a guide is here almost indispensable. The true path keeps a general direction nearly parallel to the main valley, mounting a little E. of S., until it gains a point about 2,000 ft. above the stream, whence the greater part of the beautiful Val Tournanche is seen, backed by the Matterhorn and the range extending S. from the Château des Dames. Quitting the verge of the mountain-side the path now bears S.E. across Alpine pastures, and before long reaches the village of *Chamois* (1,815 m., 5,955 ft.) (This hamlet may be gained direct by a path from the lower bit of the Val Tournanche, or in 2 hrs. by a mule path from the village of Valtournanche past *Chêneil*.) A rather long but gentle ascent in a slightly S.E. direction leads to the summit of the pass (2,415 m., 7,924 ft.), which is N. of the *Mont Zerbion* (2,721 m., 8,928 ft.), hence easily accessible in

$\frac{3}{4}$ hr., and commanding a magnificent view. The pass lies across a ridge of limestone rock that steeply overhangs the valley of Ayas. The descent is rapid, but free from difficulty, and the hamlet of *Ayas* (1,710 m., 5,610 ft.) is attained. Here a traveller may now find fair accommodation for a night, so that it is not necessary to ascend to *Fiéry* or to descend to *Brusson*.

2. A little higher up the valley is *Champoluc*, whence commences the direct ascent to the *Pinterjoch* or *Col de Cunéaz*, crossing the range between the *Ayas* and *Lys* valleys, and lying just S. of the *Grauhaupt*. This pass may be effected in 6 hrs., but the traveller, favoured by fine weather, should not omit the ascent of the *Grauhaupt*. The greater part of the ascent from *Champoluc* to the *Col* is easy enough, commanding at intervals fine views of the *Matterhorn*, but after about 3 hrs. the way becomes steep and difficult to find. It lies along the l. bank of a waterfall, and in $\frac{3}{4}$ hr. more leads to the crest of the *Col* (2,780 m., 9,121 ft.) It has a wide view to the W., which includes *Mont Blanc*, but is shut out from *Monte Rosa* by the adjoining peak of the *Grauhaupt* (3,315 m., 10,876 ft.), accessible in $1\frac{1}{2}$ hr., and commanding perhaps the finest view of the S. side of the *Monte Rosa* chain. The ascent is rough, lying in great part over and amidst large loose blocks, but except close to the top, where the rocks become steep, it presents no difficulty. It overtops all the nearer summits, and the panorama is one of the finest on the S. side of the *Pennine Alps*. *Campanula cenisia*, *Eritrichium nanum*, *Linaria alpina*, *Carex curvula*, and a few other flowering plants have been found close to the summit.

Mountaineers who do not fear a stiff scramble will find it more interesting to make the ascent of the *Grauhaupt* by the N. face and ridge, or the E. end of the mountain overhanging the *Val de Lys*, and to reach

the summit partly along the shattered ridge, partly along the ledges of its S. face; they can return to *Gressoney* by the *Pinterjoch*. The bouquetin still haunted this range in 1840.]

The descent from the *Pinterjoch* towards the *Val de Lys* is easy, and practicable for mules. In less than an hour the track, following at first the bank of an Alpine rivulet, reaches the highest chalet, and in $\frac{1}{2}$ hr. more arrives at a larger establishment in the midst of fine pastures. The last part of the descent is steeper; the path is carried down the l. side of a waterfall, and joins, in about 2 hrs. from the *Col*, the high road in the valley, about $\frac{1}{2}$ hr. above *Gressoney St. Jean*. In taking the pass from *Gressoney St. Jean* at least $3\frac{1}{2}$ hrs. should be allowed for the ascent to the *Col*, and about $2\frac{1}{2}$ hrs. for the descent to the *Val d'Ayas*.

3. The traveller following the line of the so-called *Middle Passes* will do best to select the *Col d'Olen* for his route from *Gressoney* to *Alagna*. This very beautiful pass is practicable for mules, but an active pedestrian can cross it in 7 hrs. It is 4 m. by the high road from *St. Jean* to *La Trinité* (Rte. D). $\frac{1}{4}$ hr. farther up the valley at *Orsia* the mule track turns to the r., and mounts in 1 hr. more through beautiful scenery to the first huts on the *Gabiet Alp*. A steeper ascent up a side glen, bearing first N. and then N.E., leads in $1\frac{1}{2}$ hr. more to the crest of the pass (2,871 m., 9,420 ft.), whence the view is very fine. Just below the pass on the *Alagna* side a fair-sized and comfortable inn was built, at a height of 2,865 m. (9,400 ft.), in 1878, and affords excellent headquarters for exploring the neighbouring ranges.

The first stroll will be up the *Gemshorn* (3,026 m., 9,928 ft.), but half an hour's climb, and commanding a view of the nearer peaks of the great range preferable even to that from the *Grauhaupt*. There are many paths round the inn. One leads along the E. side of the ridge

extending N. of the Col to the edge of the Indren gl. ($1\frac{1}{2}$ hr.) On the way the top of the *Colle delle Pisse* (3,162 m., 10,375 ft.) is touched. This pass leads also from the Lys to the Gressoney valley, but is not as interesting as the Col d'Olen. Close to it on the E. side is the old *Vincent hut*, originally built for the men engaged in working a supposed gold mine, long since abandoned, used as sleeping quarters by some of the early explorers of the Monte Rosa group, and occupied for 14 days in 1851 by the brothers Schlagintweit, while making scientific observations. The pass is unusually easy of access on the W. side, as a mule path, intended for the use of the miners, has been carried up to a large shed within $\frac{1}{2}$ hr. of the Col.

Thence it is $1\frac{1}{2}$ hr. more to the *Gniffetti Club hut* (3,647 m., 11,966 ft.), worth visiting for the fine view it enjoys, and the best starting point for the ascent of almost any of the S. summits of the Monte Rosa cluster (see Rte. A. 3. a). From the neighbourhood of the *Colle delle Pisse* it is easy to cross the Bors gl. to the *Punta Vittoria* (3,461 m., 11,355 ft.), on the ridge between the Bors and Piode gls. (1 hr.), with a glorious view, or to push on to the *Punta Giordani*, 4,055 m., 13,304 ft. ($3\frac{1}{2}$ hrs. from the inn), at the head of the same gl.]

The descent from the Col d'Olen to Alagna is for some time rather steep. About $1\frac{3}{4}$ hr. from the top, at a chalet, the pedestrian crosses to the S. side of the torrent, and by a steep zigzag path reaches Alagna in 3 hrs. from the summit. In the opposite direction 4 hrs. should be allowed up from Alagna, and 2 hrs. down to La Trinité.

¶ Several other unfrequented passes connect Alagna with Gressoney. The most direct of these are approached from Alagna by the *Val d'Otro*, which opens just below the village. After ascending rapidly for 2 hrs. the glen forks near some chalets. The r. branch leads to the *Passo di Zube* :

the way thither is trackless and lies over a considerable extent of rough rock, alternating with beds of snow, while a rather steep descent leads to the Gabiet lake, where the mule track of the Col d'Olen is joined. The l. branch of the Val d'Otro leads to the *Passo dell' Uomo Storto*, which is rather higher, but shorter, the descent on the Gressoney side being extremely steep. More to the S. is the circuitous way by the *Passo di Rissuolo*, S.W. of the Corno Bianco—to which it offers the easiest route, see Rte. D.—and N. of the Col de Valdobbia. It is approached by the track through the Vogna glen, leading to the latter pass. See next Rte.]

4. The traveller who would reach Macugnaga in one day from Alagna, and does not wish to cross the high *Colle delle Loccie* (see last Rte.), has only the choice between a combination of the Col de Moud and the Little Turlo (see next Rte.), or the dull and stony **Turlo Pass** (*Germ.* das Thürle = the wicket gate), which takes about 7 hrs., but is impassable for mules. The path along the Sesia is followed from Alagna, till in nearly 1 hr. it crosses to the l. bank (leaving on the opposite side the track along the base of the Stoffelberg to the Pile Alp). 5 minutes beyond the path leaves the valley (that straight on leading to the Vigne and Flua Alps), and begins to mount the slope to the r., with grand views of the Signal Kuppe and the Parrotspitze rising above the Piode gl. The ascent is rough and stony, especially when, after passing the poor *Faller* huts and keeping to the l. of the broad valley and of a small tarn, it climbs the final slope, and in about 4 hrs. from Alagna gains the Col, marked by a cross. The top, 2,736 m., 8,977 ft. (at the W. end of the rather broad depression), is a very sharp ridge of crystalline schist, shut out from the view of Monte Rosa by the *Fallerhorn* (3,130 m., 10,270 ft.), which is worth ascending ($1\frac{1}{2}$ hr.). From a rocky point in the ridge to the r. the Tödi, Adula, and

Tessin Alps are visible. The descent on the N. side is for some distance rather steep, and pathless. After crossing the snow slopes the way winds to the l., and after reaching a chalet, the highest on this side of the pass, is carried down some steep ledges of rock. *Valeriana celtica* is rather abundant. A long descent from the Col finally lands the traveller at the head of the *Val Quarazza*, and, looking back, he finds himself surrounded by a semicircular range, in which tiers of rock alternate with green slopes, while several fine waterfalls complete the picture. The track descends gently through the lower part of the glen to *Borca* ($2\frac{1}{2}$ hrs. from the pass), at the E. end of the pasture basin at Macugnaga. The hamlet where are the inns is $\frac{1}{2}$ hr. further to the W. There is a track bearing to the l. across the buttress of the mountain, which avoids *Borca* and leads direct to the main road, $\frac{1}{4}$ hr. below the inns at Macugnaga.

ROUTE I.

AOSTA TO THE VAL ANZASCA BY THE LOWER PASSES.

The tour described in this Rte. is in great part a frequented line, traversed every year by numerous tourists. As it is that most generally followed by unambitious travellers who wish to combine a visit to Courmayeur with the easily accessible parts of the S. slope of the Monte Rosa district, it has been thought convenient to include in this Rte. the entire line from Aosta to the Val Anzasca. Assuming that the traveller adheres to the mule tracks described below, not less than four days must be allowed for covering the distance; but by using one or other of the passes connecting the

upper Val Sesia with the Val Sermenza the distance might be brought into the compass of three days' journey. It is scarcely necessary to say that the judicious traveller will, when possible, give at least double that time to a route which traverses some of the most beautiful scenery of our Continent. Good accommodation is now found at most of the places on the way.

1. Now that there is a railway through the lower part of the Val d'Aosta (§ 15. Rte. A) most travellers will make use of it in order to gain **St. Vincent** (c. 17 m. from Aosta), $1\frac{1}{4}$ m. beyond Châtillon. Here the mule path turns off to the l. from the main valley, which now bends S.S.E. For a while the magnificent chestnut trees screen the traveller from the hot sun, which beats upon him with full force as he emerges on the slope of the mountain. As he winds upwards the view along the Val d'Aosta becomes more and more commanding, and at the little chapel of *St. Grat* he may well halt to enjoy the prospect, which lays before him the finest part of that beautiful valley for a length of more than 25 m., backed by the mass of Mont Blanc. Towards the summit of the **Col de Joux** (1,638 m., 5,374 ft.) the way lies over broad sweeps of pasture on the S. slope of the *Mont Zerbion* (2,721 m., 8,928 ft.) (The summit of that mountain commands a noble view, and may be gained in $\frac{3}{4}$ hr. from the Col de Portola—see last Rte.—or in 5 hrs. or so from Châtillon, St. Vincent, or Brusson.) In ascending from St. Vincent $2\frac{1}{2}$ hrs. must be allowed to the Col, and $\frac{3}{4}$ hr. suffice for the gentle descent to *Brusson*, in the Val d'Ayas (Rte. C), where a day or two may well be spent in exploring that valley and the ranges that enclose it.

2. In ascending from Brusson by the mule track to the **Col de la Ranzola**, leading to Gressoney, the traveller looks due S. over the lower portion of the valley of the Evançon, called here *Val Challant* (Rte. C). On

approaching the summit (2,171 m., 7,123 ft.) an unexpected view of Mont Blanc is gained by looking back towards the W.; but Monte Rosa, much closer at hand, is shut out by nearer masses. After descending some way on the E. side of the pass, a portion of that great mountain comes into view, and in the middle distance the village of Gressoney St. Jean, set in a framework of green meadows, pine forest, and rugged rocks, forms an exquisite picture. A still finer and more extensive view is obtained from a summit called *Pointe de Combetta*, or *Punta della Regina* (2,390 m., 7,842 ft.), just S. of the Col, whence it is accessible in $\frac{1}{2}$ hr. Those who make the détour may find their way direct to Gressoney without returning to the mule path. The descent from the Col is in part rather steep, lying for some time through a pine forest, and in 4 hrs. from Brusson the traveller reaches *Gressoney St. Jean* (Rte. D).

[A somewhat circuitous way from Brusson to Gressoney will enable the traveller to make the ascent of the **Mont Néri** or **Bec de Frudière** (3,070 m., 10,073 ft.) It commands a panoramic view of the first order, considered by Mr. W. A. Ward, to whom the Editor (J. B.) owes much information as to the Val de Lys, to be decidedly superior to that from the Grauhaupt, which is 800 ft. higher. It lies on the S. side of the *Col de Frudière* (a pass leading from Brusson to a point in the Val de Lys, about 1 hr. below Gressoney St. Jean) and N. of the *Col de Chasten* (which leads from the Val Challant to Issime, in the Val de Lys). The peak may be gained from either of these passes, but most easily from the latter (7 hrs. from Issime), whence too the *Becca Torché* (3,015 m., 9,892 ft.), on the S., can be climbed in $\frac{1}{2}$ hr.]

3. Travellers bound from Gressoney to the Val Sesia, who are deterred by bad weather or the fear of fatigue from attempting the Col d'Olen

(Rte. H.), choose the easier but less interesting way by the **Col de Valdobbia**. The ascent towards the Col begins a little below the village of Gressoney St. Jean, and is so well marked by a frequented mule path that a guide is quite unnecessary. (There is a more agreeable foot path ascending behind Delapierre's inn along the edge of an ancient moraine, then mounting along the torrent until the mule path is joined at a point where it crosses the torrent, about 1 hr. from the village.) Except to the botanist, who will find a good many rare plants by the way, this pass offers less of interest than most of those in the neighbourhood; yet the views of the Val de Lys from the W. side, and of the Graian Alps from the top of the Col, are very fine. There is a small stone Hospice on the summit of the pass (2,479 m., 8,134 ft.), now also a meteorological observatory. Here simple refreshments may be had. (The ascent of the *Corno Bianco*—Rte. E—takes 6 hrs. hence.) On the E. side of the Col the path traverses Alpine pastures and the remains of a pine forest before reaching a miserable hamlet called *Peccia*. The remainder of the descent lies along the *Vogna* torrent, which in one place forms a fine waterfall. The glen narrows to a ravine before finally opening into the Val Sesia at *Riva Valdobbia*, $1\frac{1}{2}$ m. below Alagna (Rte. E). Going from W. to E., 3 hrs. suffice for the ascent, and $2\frac{1}{2}$ hrs. for the descent to Riva; in the opposite direction $3\frac{1}{2}$ hrs. may be allowed to the Col, and 2 hrs. hence to Gressoney.

[Those who would vary the way from Gressoney to the Val Sesia may choose between several passes, all of which are reached from the hamlet of *Loomatten*, nearly 1 hr. below Gressoney St. Jean. A well-traced mule path leads thence eastwards to the Loo chalets, and to the Loo plateau, at the head of the upland glen of that name. Here many routes diverge.

(a) To the S. is the *Col de Loosoney*, by which and the *Col della Mologna Grande* Piedicavallo, at the head of the Andorno valley (Rte. K), may be gained in 7 hrs. from Gressoney.

(b) To the E. is the *Col de Loo* (2,437 m., 7,996 ft.), marked by a stone-man. Just S. is a rocky height, the *Punta Tre Vescovi* (2,579 m., 8,462 ft.), which may be easily reached in 20 min., and commands an admirable view, worthy of being ranked among the excursions from Gressoney. On the E. side of the Col the track descends through the rather uninteresting *Rassa* glen, traversed by the Sorba torrent (Rte. K), which joins the Sesia above Piode (Rte. E).

(c) To the N. is the *Col de Macagno* (2,495 m., 8,186 ft.), which leads N.W. into the *Val Macagno*, traversed by the Vogna torrent. In about 1 hr. the mule track from the Col de Valdobbia is gained. Only the upper part of this glen is called Val Macagno, the greater part of it being known as the *Val Vogna*.

If the traveller bear nearly due E. from the Col de Macagno, he will gain a low pass called *Col della Gronda*, which properly leads into the *Artogna* glen, though by keeping round to the S.E. to the *Col de Campo* the *Sassolenda* branch of the *Rassa* glen may be gained, and the route of *b.* above joined in it. Rather N. of the Colle della Gronda is the *Colle della Meja*, which leads from the Val Macagno into the *Artogna* glen, by which *Mollia*, in Val Sesia, is gained.]

4. There is but one easy pass from the Val Sesia direct to the Val Anzasca—the *Turlo*, described in the last Rte. A glance at the map will show that otherwise the Val Sesia is cut off from the Val Anzasca by the sinuous *Val Sermenza*, which ultimately splits into two branches—that to the W. being the *Rima*, and that to the E. the *Carcoforo* arm. Hence a traveller must somehow reach the Val Sermenza, and then

take one of the passes through one of its arms. The traveller who keeps to mule paths will do best to take the Col de Moud to Rimasco, and then the Col d'Egua to Ponte Grande.

The **Val Sermenza** may be gained by three main routes from the Val Sesia.

1. *By Carriage Road*.—The high road from Alagna to Balmuccia (14½ m.) has been already described in Rte. E. *Balmuccia* stands at the junction of the *Val Sermenza* (often called Val Piccola in contradistinction to the main Sesia valley or Val Grande), and there is a carriage road thence up to *Rimasco* (6½ m.) The scenery of the lower part of the Val Sermenza is extremely beautiful. It is a narrow and tortuous glen, where trees, rocks, and Alpine torrents present in ceaseless variety the most exquisite pictures. On the way are the hamlets of *Bocciolo* (above which rises the strange rock obelisk, nearly 300 ft. in height, known as the *Torre di Bocciolo* or *delle Giavine*), and *Fervento*. *Rimasco* (905 m., 2,969 ft.) is at the meeting of the two arms of the valley.

2. The long circuit made by the carriage road may be avoided by crossing either the *Col della Casera*, which leads from Riva Valdobbia to Rima St. Giuseppe (in the W. arm of the Val Sermenza) by the Nonai glen in 5 hrs., or the *Bocchetta Bia* from Mollia direct to Fervento by the *Chignolo* glen in 4 hrs.

3. A pleasanter route is to cross one or other of three passes direct from Alagna to the Rima branch of the Val Sermenza. The most northerly of these is the *Col de Rima* or *de Piglìmo* (2,487 m., 8,160 ft.), a little-used track leading from the *Turlo* path to *Rima* itself (5 hrs.) The most southerly is the *Bocchetta Moanda* or *di Alagna* (2,419 m., 7,937 ft.), the ascent (long and steep) from Alagna to which takes 2½–3 hrs. (The fine view from the summit may be much extended by ascending in 2 hrs. by its W. flank the *Tagliaferro* (2,964 m.,

9,725 ft.) N. of the pass, this being the great advantage of taking this route.) The descent is made from the Col in a nearly due E. direction, and passing a fine waterfall the traveller gains the *Nonai* glen, and so attains (5 hrs. from Alagna) the village of *Rima San Giuseppe*. The Col de **Moud** (2,323 m., 7,622 ft.), lying between these two passes, and N. of the Tagliaferro, is the most frequented but the duller way, and is also traversed by a mule track. Following the Val Sesia for a short distance above Alagna, the torrent is crossed to its l. bank by either the first or second bridge. The path then takes to the hill-side, and zigzags up the l. hand of two ravines which are seen in front. Fine views of the summits of Monte Rosa from the Signalkuppe to the Vincent Pyramide are disclosed on the l., and in about 1½ hr. after quitting Alagna the *Moud* chalets are reached. Excellent milk may be obtained here. The remainder of the route to the Col is uninteresting, and may be accomplished in 1 hr. (mules take 3 hrs. from Alagna to the Col). The track leads down a snow slope, beneath the rocks of the Tagliaferro, and on reaching the bottom the Val Sermenza is seen at a considerable depth below. Slopes of grass, interspersed with a rich growth of rhododendrons, are succeeded by a pine forest, through which the pretty path winds steeply down to *Rima*, 1 hr. from the Col. (F. F. T.)

Having reached the Val Sermenza by one of these routes the ways to Ponte Grande and to Macugnaga divide.

a. To *Ponte Grande* there is but one easy route, the *Col d'Egua*. This leads from Rimasco through the beautiful E. branch of the valley to the village of *Carcoforo*, 1,304 m., 4,278 ft. (2 hrs.) Above it the slopes are bare, and the scenery rather tame. Mules take nearly 2½ hrs. from Carcoforo to reach the summit of the **Col d'Egua** (2,236 m., 7,336 ft.), the track being rather steep; but the

trouble is repaid by a magnificent view of Monte Rosa and the minor ranges that diverge from it. The view is still more extensive from a point about 10 min. N. of the Col. An easy descent leads in ½ hr. from the Col to the *Selle huts*, 1,820 m., 5,971 ft. (near which there is now a little inn), close to the summit of the *Baranca Pass* (marked by a small oratory), leading over from Fobello, in the Val Mastallone (Rte. L). This pass lies over an undulating plateau of Alpine pasture. On approaching the N. slope there is a beautiful view over the *Val Olocchia*, a tributary of the Val Anzasca, through which this route lies. There is now a new mule path which leads down in ¾ hr. to the chalets of *Piè di Baranca*, in the Val Olocchia itself. Much of the magnificent timber that formerly clothed the slopes of this glen has of late years fallen before the axe. The path is carried along the l. bank of the torrent to *Bannio*, the chief village in the Val Anzasca, and most beautifully situated. A walk of ¼ hr. by a char road leads hence over the Anza to *Ponte Grande* (2½-3 hrs. from the pass), Rte. F.

b. The traveller on foot bound from the Val Sermenza to *Macugnaga* direct has a choice of several passes.

(1) From Carcoforo itself he may cross the *Col della Bottiglia* or *Bocchetta di Carcoforo*. The ascent from Carcoforo is very steep; and it takes more than 3 hrs. to reach the summit of the pass (2,672 m., 8,767 ft.) This commands a magnificent view of Monte Rosa and the Saasgrat. On the other side there is a faintly marked track along a steep slope until an abandoned mine (? gold) is reached. Below this the path descends into the E. head of the Val Quarazza, down which runs the path from the Turlo (M.) 6 hrs. may be reckoned from Carcoforo to Macugnaga by this route.

(2) The head of the Val Quarazza may also be attained from the Rima or *W. branch of the Val Sermenza*. The

mule track from Rimasco lies along the l. bank of the torrent, passes the Italian-speaking village of *Rima San Giuseppe* (1 hr.), and in $\frac{1}{2}$ hr. more reaches **Rima** (1,417 m., 4,649 ft.) This small village (150 souls) is particularly interesting from the fact that German is still more or less spoken here, for it is an offshoot of one of the neighbouring Vallaisan colonies, probably of that at Alagna. It is the highest village in the Val Sesia and its tributary glens. (Hence to Carcoforo in 4 hrs. by the *Col del Termine*, 2,347 m., 7,700 ft.) From Rima the *Col del Piccolo Altare*, or *Little Turlo* (*Germ.* Das kleine Thürle = the little wicket gate), is reached by a mule path, so that a traveller can easily combine it with the Col de Moud in one day from Alagna to Macugnaga. The height of the pass is 2,630 m. (8,629 ft.) On the other side there is no mule path as yet; the track soon joins that from the Turlo, and in this way Macugnaga is attained in 6 hrs. from Rima.

ROUTE K.

IVREA TO ORTA BY BIELLA.

Tourists, attracted by the grand scenery of the valleys radiating from the Italian slope of the Monte Rosa group, have generally neglected the lower ranges that separate the plain of Piedmont from the ridges immediately connected with that great mountain mass. There is, however, ample room for interesting excursions among the outer valleys and the foothills of this region, which may well be visited at a season when the higher mountains are not easily accessible, or during intervals of bad weather, which is often confined to the more immediate neighbourhood of the snowy Alps. A few days may

be much better spent by a mountaineer amidst the beautiful scenery of the outer valleys of Piedmont than in fretting in an Alpine inn, or plodding over a pass whose attractions are hidden by clouds, rain, or fresh snow. The present Rte. is suggested in hopes of drawing the attention of English travellers to a district very little known to them as yet, but well deserving a visit.

From **Ivrea** (§ 15. Rte. A) to Biella it is not more than 10 or 11 miles in a direct line, but most of the routes taken between them are circuitous. Both towns are connected by branch railway or tramway with the main line from Novara to Turin and Milan, but the trains are so arranged that 3 hrs. or more are consumed in going from one place to the other.

A more direct high road ($3\frac{1}{2}$ hrs.' drive) affords the traveller the opportunity of examining the remarkable ridge of *La Serra*, which lies between the two towns. This is really the l.-hand moraine of the great glacier which formerly filled the valley of Aosta, and extends for a distance of $15\frac{1}{2}$ miles from the foot hills across the Piedmontese plain. The ascent from Ivrea is by steep zigzags. The view from the gap, looking back towards Monte Viso and the peaks round the Mont Cenis, is very beautiful, while the considerable lake of *Viverone* is an ornament to the foreground. The top is a broad level, across which run the long ridges of successive moraines. After a while the road descends steeply through chestnut forests, and crosses the strange region known as *La Bessa*, covered with piles of stones believed to represent the remains of Roman gold diggings. At *Mongrando*, $\frac{3}{4}$ hr. from Biella, the traveller may profit by a tramway which will bring him to Biella in $\frac{1}{2}$ hr.

Far more interesting, however, to pedestrians is the walk from Ivrea or Settimo Vittone by the village of *Andrate* (exquisitely placed on a spur commanding the entrance to the Val

d'Aosta), *Croce Serra* (853 m., 2,799 ft.), *Donato*, and *Graglia*. At Donato, some $2\frac{1}{2}$ or 3 hrs. from Ivrea, carriages can generally be had for the descent to Biella (3 hrs. on foot from Donato). The road passes under the Sanctuary of Graglia (see below), which may be visited by an hour's détour. This excursion cannot be too warmly recommended.

Biella is a very thriving town, full of cloth works, at the opening of the *Val d'Andorno*, whence flows the *Cervo*, to join the Sesia near Vercelli. It is divided into an upper and lower town, connected by a funicular railway. In the lower town there is a very ancient *Baptistery*, the church of *St. Sebastian* (with some pictures attributed to Bernardino Luini and Gaudenzio Ferrari), and a *monument* in honour of the late eminent statesman Quintino Sella, whose family belongs to this region. In the upper town is the hydropathic establishment of Biella-Piazzo (closed in 1895). (For Biella and its neighbourhood consult the 'Guida pel villeggiante nel Biellese,' by Pertusi and Ratti, 2nd edition, Turin, 1887.)

Not far from Biella ($\frac{1}{4}$ hr.'s drive) is the well-preserved mediæval castle of *Gaglianico*. $1\frac{3}{4}$ hr.'s drive from Biella is the *Sanctuary of Graglia* (812 m., 2,664 ft.), on an eminence overlooking the plain of Piedmont. Near it is a large hydropathic establishment. There are several other such establishments near Biella, all much frequented in summer. That of *Cossila* is $1\frac{1}{2}$ m. N. of the town; that of *Andorno* (4 miles) is close to the large and thriving village of that name, while a third (2 hrs.) beautiful drive from Biella) is near the Sanctuary of *Oropa*.

i. Travellers approaching Gressoney from Biella may best avail themselves of one or other of the passes leading to the lower reach of the *Val de Lys* (Rte. D). The southernmost of these is the *Col de Carisei*, leading by Graglia to Lillianes. The finest way is by the *Col della Barma*

d'Oropa (2,261 m., 7,418 ft.), between the famous *Sanctuary of Oropa* and Fontainemore (5 hrs.) This Sanctuary (1,180 m., 3,872 ft.) is 9 miles by high road N.W. of Biella, and consists of a noble pile of buildings, forming two quadrangles, surrounded by chapels. It contains an ancient wooden statue of the Madonna, which annually attracts thither 70,000 pilgrims. Travellers find accommodation at a large hydropathic establishment near by, or at the Hospice, taking their meals at an adjoining Restaurant. From the Sanctuary there is a very interesting carriage road (due to the liberality of a local benefactor) passing by a long tunnel under the crest of the *Colle della Colma* (1,622 m., 5,322 ft.), and then descending in extraordinary zigzags to the *Sanctuary of San Giovanni d'Andorno*, 1,020 m., 3,347 ft. ($2\frac{1}{2}$ hrs.' walk), very finely situated in the middle portion of the Andorno valley. This is $7\frac{1}{2}$ m. by high road from Biella, so that visitors may combine Oropa and the Val d'Andorno in a single excursion. (For the more direct passes from Piedicavallo to the Val de Lys see below.)

ii. The way from Biella to the *Val Sesia* lies through the *Val d'Andorno* itself, up which a good carriage road runs in 12 miles to the highest village, *Piedicavallo*, 1,037 m., 3,402 ft.

[Hence the *Colle della Vecchia* (2,186 m., 7,172 ft.) and the *Colle della Mologna Piccola* (2,095 m., 6,874 ft.) lead over in 5 hrs. to Gaby, in the Val de Lys, above Issime. N.E. of the last-named pass is the *Colle della Mologna Grande*, whence a cairn-marked level traverse leads N.W. to the *Col de Loozoney*, by which and the Loo glen (Rte. I) the hamlet of *Loomatten*, about 1 hr. below Gressoney St. Jean, is gained, 7 hrs. being required from Piedicavallo to Gressoney by this route.]

From Piedicavallo the Val Sesia may be most easily gained by the mule path over the *Bocchetta del Croso*

(1,940 m., 6,365 ft.) and the Val Sorba, 5-6 hrs. sufficing to go from Piedicavallo to the high road below Campertogno, in the Val Sesia. The finest way, however, is to ascend the *Monte Bò*, 2,556 m., 8,386 ft. ($5\frac{1}{2}$ hrs. from Piedicavallo), a peak which may, perhaps, be identified with the 'Monboso,' ascended long ago by Leonardo da Vinci, and rising certainly in the range E. of the Val Sesia. (There is a Club hut close to the top.) The descent may be made to the Bocchetta, or direct by the N.W. flank into the *Val Sorba*. In this glen are the marble quarries of *Mas-succo*, now no longer worked. $4\frac{1}{2}$ hrs. from Piedicavallo by the Bocchetta is the village of *Rassa*, whence there is a char road down the Sorba valley, which at its mouth bears N., and joins the main road in the Val Sesia a little way below Camper-togno.

The quickest way from **Biella** to **Orta** is by rail ($71\frac{1}{2}$ m.) through Santhia, Novara, and Gozzano. But it is easy, and far more charming, to spend the day on a drive (40 m.) by way of Borgo Sesia and Valduggia. The drive from Biella to Borgo Sesia takes about $4\frac{1}{2}$ hrs. (it can be shortened one-half by taking train round by Cossato to *Valle Mosso*, but the most beautiful scenery is thus lost.) For the first $1\frac{1}{2}$ hr. the road is terraced along the bays of the foot-hills.

[10 min. beyond *Pettinengo* a foot path leads in $\frac{1}{2}$ hr. to the top of the *Cima della Rovella* (890 m., 2,920 ft.), which includes in its panorama the whole of the Western Alps and the Bernina chain.]

The road descends to a stream lined with cloth factories, and then climbs again to the finely placed small town of *Mosso Santa Maria* ($\frac{1}{3}$ hr. above Valle Mosso station). A terrace road brings the traveller to the village of *Sella*, which, as its name implies, is situated on the saddle forming the limit of the basin of the Sesia.

[Hence the *Monte San Bernardo*

di Trivero (1,408 m., 4,620 ft.), commanding a fine view over *Val Sasserà*, a valley of pastures, without permanent villages, to Monte Rosa, can be reached in 2 hrs. It was the last refuge of Fra Dolcino, the heretic, who in 1307 was burnt on the sands near the junction of the Cervo with the Sesia. As a thankoffering for their victory over him and his followers the inhabitants of the neighbourhood built on the summit, where these heretics made their last stand, a chapel dedicated to St. Bernard, the great adversary of heretics.]

The descent to *Borgo Sesia* (Rte. E), near the junction of the Sesserà and the Sesia, is less interesting than the earlier part of the drive. From Borgo Sesia there is a lovely drive of 3 hrs. by *Valduggia* (the birthplace of Gaudenzio Ferrari) to the S. end of the lake of Orta, and so to Orta, now a station on the railway from Domo d'Ossola to Novara (§ 21. Rte. A).

ROUTE L.

ORTA TO PONTE GRANDE BY THE VAL MASTALLONE.

None of the ways for approaching the Monte Rosa group enumerated in this volume offer greater variety of beautiful and grand scenery than those described in this and the following Rtes. The **Val Mastallone** opens into the Val Sesia at Varallo, so that it is better to sleep there or at Fobello rather than to attempt to reach Ponte Grande from Orta in one very long day.

The best way from Orta to Varallo is to cross the Lake of Orta (§ 21. Rte. A) to *Pella*, on the W. shore, where donkeys may be found by those who wish to ride over the *Colle della Colma* (942 m., 3,091 ft.), which traverses

the low ridge between the lake and the Val Sesia. An active pedestrian may easily accomplish the distance in 4 hrs., but it is a pity to hurry through the exquisite scenery. From Pella a rather steep, paved path mounts along the channel of a little torrent amidst vines and fig trees, with masses of crumbling granite projecting here and there from the hill slope. In less than an hour the little village of *Arola* is reached. A paved track turns N. to Cesara, which is connected by a carriage road with Omegna, but the way to Varallo lies nearly due W., partly amid chestnut trees, till in 2 hrs. the Colma is reached. From a slight eminence to the l. Monte Rosa and some more distant peaks are in view. The track winds down the hill-side and enters a little open glen, in which is the hamlet of *Civiasco*. Here a char road begins, which winds round the declivity on the r. and reaches the Sesia valley very near Varallo. The botanist will observe *Hieracium porrifolium* growing on granite rocks.

The *Val Mastallone* joins the Sesia close to the town, and there is now a good carriage road past the *Baraccone* ($9\frac{1}{4}$ m.), at the junction of the two main branches of the valley, to Fobello (2 m.) and Rimella ($2\frac{1}{2}$ m.) respectively. Nature, which has done so much to adorn this region, seems to have surpassed herself here. The most exquisite combinations of rock, and wood, and water succeed each other throughout the valley. In one place, called *La Gula*, about $2\frac{1}{2}$ m. from Varallo, it is contracted to a mere gorge, and a stone bridge of a single arch spans the torrent. Another bridge higher up gives a passage to the new road, cut out in the rock. About $\frac{1}{2}$ m. beyond *Ferrera* the valley divides, an inn, the *Baraccone*, standing just at this point.

a. The *W. branch*, though longer, offers the easiest way to Ponte Grande. Keeping to the l. the new road is carried on 2 m. beyond the junction to the little village of *Fobello* (880 m.,

2,887 ft.), famous for its cooks, who migrate hence to all parts of Europe. The low ridge of the *Baranca Pass* (1,820 m., 5,971 ft.) closes the head of this glen. The ascent by a mule pass is short and easy, but the scenery diminishes in interest towards the head of the valley. (To the r. is the *Pizzo del Moro*, 2,335 m., 7,661 ft., commanding a fine view, and accessible in $3\frac{3}{4}$ hrs. from Fobello.) The summit of the Baranca Pass is marked by a small oratory (3 hrs. from Fobello), not far from which is a small inn. At the *Selle* huts, on the pasture plateau over which the way lies, the path joins that from the Col d'Egua (Rte. I). The view towards the Val Anzasca, though beautiful, is not first-rate. Ponte Grande is gained in 2 hrs. from the pass.

b. The most direct way from Varallo to Ponte Grande is through the *E. branch* of the Val Mastallone, at the head of which is the *Orchetta* or *Drochetta Pass* (1,820 m., 5,971 ft.) It is not passable for mules, but the view is much finer than that from the Baranca. There is a very steep char road up the glen as far as ($2\frac{1}{2}$ m.) the village of *Rimella* (1,181 m., 3,875 ft.), on a steep slope 700 ft. above the stream. This is a German-speaking village, for it is an offshoot of the Vallaisan colony established at Macugnaga. The stream is still called 'Landwasser,' and other German names survive in popular usage. The ascent thence to the Col is very steep and winding at first. The pass is gained in 3 hrs. from the Baraccone, or in about the same time from Fobello, by a path which mounts steeply to the ridge dividing the two glens, and then runs nearly on a level to the pass. A very steep descent over debris and grass slopes leads to the level of the *Val Olocchia*, the r. bank of the torrent in which is followed till by a bridge the mule path from the Baranca Pass is joined 10 min. above Bannio. Ponte Grande is gained in 2 hrs. from the summit.

ROUTE M.

ORTA TO PONTE GRANDE BY
THE VAL STRONA.

The *Val Strona*, of which it is enough to say that it is worthy to compete with the tributary glens of the *Val Sesia*, pours its torrent into the stream that drains the Lake of Orta, just as this flows out close to *Omegna*, $5\frac{1}{2}$ m. by rail from Orta (§ 21. Rte. A). Like most of the neighbouring valleys this is narrow, sinuous, and richly wooded, possessing thus varied scenery, but no distant views. There is now a new char road up the valley, chiefly along the l. bank, as far as *Forno* ($3\frac{1}{2}$ hrs. walking). Hence a good mule path leads up to the highest village, *Campello Monti* (1,290 m., 4,232 ft.) The usual course hence to the *Val Anzasca* is circuitous, but throughout very interesting. A track mounting S.W. from the village leads in $1\frac{1}{2}$ hr. to the *Bocchetta di Campello* (in dialect 'Jattal' = 'Sattel') (1,926 m., 6,319 ft.), which commands one of the finest distant views of Monte Rosa. A very rough track, scarcely practicable for a laden mule, passes by *San Gottardo*, and in 3 hrs. from Campello (till 1816 Campello was, oddly enough, part of the commune of Rimella) reaches *Rimella*, in the E. branch of the *Val Mastallone* (see last Rte.) *Ponte Grande* may be reached hence by the *Orchetta Pass*, but it is better to make the circuit by *Fobello*, in the W. branch of the last-named valley.

Mr. F. Mills has favoured the Editor (J. B.) with notes of the direct way between Campello and the *Val Anzasca*. It lies over the N.E. ridge of the *Cima di Cappezzone*, N. of Campello, crossing probably at the point marked 2,189 m. on the Italian map (the *Colle della Crosetta*). The descent is through the *Vallon della Segnara*, which opens into the *Val Anzasca* below *Calasca*. The ridge

is steep, and the way a little difficult from the want of a traced path near the summit. A track is found below the highest chalet in the *Segnara glen*, which is followed to *Calasca*. The *Segnara glen* may also be gained from *Rimella* by the ridge between the *Cima di Capezzone* and the *Monte Mora*, in which there is a gap marked 2,222 m. on the Italian map.

(A very interesting way from *Omegna* to *Varallo* is by the village of *Quarna*, and then over the *Monte Massucone* (1,424 m., 4,672 ft.) to *Camasco*, whence a char road leads direct to *Varallo* by the *Crosa glen*. This mountain is rather lower than the *Mottarone* (§ 21. Rte. A.), and *Monte Rosa* is some miles nearer, but it misses in great part beautiful views over the lakes, which have obtained for its rival the title of the Italian *Rigi*. 7-8 hrs. should be allowed for this route from *Omegna* to *Varallo*.)

ROUTE N.

VISP TO MACUGNAGA BY THE
MONTE MORO.

In the preceding portion of this Section we have supposed the traveller to approach the *Monte Rosa* range by the W. branch of the *Visp* valley, or else from the Italian side. There remains another route, by the E. branch of the *Visp* valley, which in grandeur of scenery vies with any of those hitherto described. For travellers who intend to make a complete tour of the entire district, commencing and concluding on the Swiss side, the best arrangement is to begin with the present route; and, after passing some time in the Italian valleys on the S. slope of the chain, to reach *Zermatt* by the *St. Théodule*. Traces of the mediæval paved track

are found on both sides of the Monte Moro, but horses cannot cross the upper portion of the route, which must be made on foot.

[A pedestrian going round from the Saas to the Zermatt valley, or *vice versa*, need not ascend to the Kinnbrücke, but may save an hour by a short cut sometimes called the 'Staldenjoch.' 'In descending from Saas, soon after you come in sight of Stalden, a path turns to the l. about 50 yards below a place where the track, carried at a great height, is guarded by rough railing. Here are some magnificent pine trees. You now leave the mule track and take to the side of the watercourse, and when this comes to an end a track in the same direction, but lower down, leads to the main road in the Zermatt valley, near the second bridge below St. Niklaus' (R. S. W.) There is also a track from the Hutegg inn round the mountain-side, past the *Hannig Alp* and *Grüchen* to St. Niklaus, and an easy though stony direct pass, the *Ferrichtücke* (2,889 m., 9,479 ft.), across the range N. of the Balfrin. The passes S. of that summit are described in Rte. P.]

The railway from Visp to Stalden ($4\frac{1}{2}$ m.) has been described in Rte. A. From the Stalden station (no need to enter the village) the railway is crossed by a mule track, which passes over the *Kinnbrücke*, a single arch 150 ft. above the Matter Visp, and, entering the E. branch of the valley, mounts rapidly along the l. bank of the Saaser Visp. The valley narrows to a defile between steep and high mountains, whose summits are not seen from below, and passes the hamlet of *Eisten*, and a little inn at the *Hutegg*, before crossing to the r. bank by the *Martinsbrücke*. This bridge takes its name from the forest of St. Martin, which has given its name to the Mattwaldhorn and to Mattmark, the two extremities of the parish of Saas since the thirteenth century. The track recrosses the stream, and in 2 hrs. from Stalden

reaches a little green plain, where stands the village of *Balen*. Here the path passes to the r. bank, and the valley widens out so as to show some of the neighbouring peaks. In $3\frac{1}{2}$ hrs.' steady walking from Stalden the traveller reaches

Saas Grund, so called to distinguish it from Saas Fee, $\frac{3}{4}$ hr. up on the slopes to the W. The name Saas is derived either from the Italian word for a stone ('sasso') or from a Romance word ('saucea') meaning an osier thicket. In either case it is a relic of the Italian colonisation of this glen in 1250 by Count Godfrey of Biandrate (see Rte. F), though later Teutonic influence has so disguised the local names that it is often hard to make out their original Italian form. Certain of these names—e.g. Mischabel, Allalin, Amagell, Monte Moro—have been supposed to be due to a Saracen settlement here in the tenth century, but this theory has no definite historical evidence in its favour, and is opposed to what we know of the authentic history of this valley. A former priest of the parish of Saas, Herr Imseng, was renowned as an intrepid mountaineer, and was known to most visitors, as well as by name to the readers of Sir Alfred Wills' 'Wanderings among the High Alps,' but was drowned in 1869 in the Mattmark lake.

The village of *Saas* (1,562 m., 5,125 ft.) does not command any striking views, but is situated in the immediate neighbourhood of scenery of the first order. The establishment of several great hôtels at Saas Fee ($\frac{3}{4}$ hr. off on the W.), and of a modest mountain inn 1 hr. above the Trift Alp (3 hr. off on the E.), have now deprived it of any great importance as an Alpine centre. No traveller should on any account omit a visit to Fee, which, with the ascents and passes on the W. side of the valley, is described in Rtes. O and P. On the E. side it is worth while, if a traveller have leisure, to make the excursion to the inn above Trift Alp, the ascents and passes on

the E. side of the valley being enumerated in § 21. Rtes. B, C, and E.

The path from Saas Grund to the Monte Moro lies all the way along the r. bank of the Visp. The scenery is wild and in part dreary, but at intervals the eye is relieved by grand views of the surrounding peaks and glaciers. The geologist cannot fail to notice the numerous erratic blocks of smaragdite-gabbro, which come from a ridge on the l. bank of the Allalin gl., and may be traced at least as far as Geneva. In some boulders also the rare mineral glaucophane is conspicuous. The first village is *Almagell*, nearly at the tree limit, and at the junction of the Almagell torrent (flowing from the Zwischbergen Pass, § 21. Rte. C, and making a fine waterfall some distance above the village) with the Visp.

【From Almagell a path leads up direct to Fee, thus enabling those descending from the Monte Moro to avoid Saas Grund.】

Little more than a mile farther the more considerable torrent from the *Furgg* glen (for the pass to Antrona see § 21. Rte. E) descends to join the Visp near the houses of *Zermeiggern*. (As shown by a Latin document of 1291, this hamlet was called 'Morganum in the Saas valley,' to distinguish it from the 'Morghen' barrier, or 'Morganum in the Macugnaga valley,' the name having thus been carried across the Moro by the Teutonic settlers from the Vallais in the latter spot.) Beyond, the scenery increases in wildness, and the vegetation becomes more decidedly Alpine; the path mounts, but not very rapidly, and at length in about 2½ hrs. from Saas the traveller overlooks the **Matmark Lake**. This small lake has been formed by the accumulation of the waters of the Visp behind the Allalin gl., which, like that of Miage, in the case of the Lac de Combal, has dammed the valley across. The very rare *Pleurogyne carinthiaca* is found in grassy spots near the lake, and

Arenaria aretioïdes in the Ofen glen, a little higher up on the E. side of the valley. On the Alp S. of the lake there is a small *Inn* (2,123 m., 6,966 ft.), convenient as a starting point for the Adler Pass (Rte. O) or the Schwarzberg Weissthor (Rte. F) to Zermatt, and even for the Monte Moro itself, which is thus reached at an early hour, the chance of a clear view being thus greatly increased. Not far from the inn are some huge blocks of serpentine, brought down by the Schwarzberg gl. At no great distance from the inn, beyond the opening of the *Ofen* glen (for the pass to Antrona see § 21. Rte. E. 3.), are the chalets of the *Distel Alp*. Amidst wild and dreary scenery the ascent continues by a tolerable mule path (on the way, as on the other side, are seen traces of the mediæval paved track) to the *Thälliboden* hollow or plain. Here mules must be left, and the ascent continues by some steps cut in the rock, and along the W. edge of the *Thälliboden gl.* (the gl. itself is *not* touched). Some snow slopes then lead to the pass (2 hrs. from Mattmark), 2,862 m., 9,390 ft.

【Travellers should note that the tempting opening at the E. head of the gl. is *not* the Moro, but the *Mon-delli Pass*, 2,841 m., 9,321 ft., whence M. Rosa is not seen, used in winter, and at other times, as a short cut to Ceppomorelli, in the Val Anzasca, 5 hrs. from Mattmark.】

Many of the passes in this district may tempt, more than does the **Monte Moro**, the adventurous traveller, who loves the flavour of difficulty, not to say danger, but there is perhaps none which offers a scene of such surpassing grandeur as is here unrolled before his eyes. The view of the precipitous E. face of Monte Rosa is perhaps more wonderful and unique when seen from the Pizzo Bianco, but the elements of the sublime and beautiful are combined in a more complete picture by the panorama from the Monte Moro. It is well worth while to ascend ($\frac{3}{4}$ hr.) the

Joderhorn (3,040 m., 9,974 ft.), E. of the pass. The view of Monte Rosa is not finer, for in truth that cannot be surpassed, but the eye is enabled to contrast it with the distant prospect over the plain of N. Italy, including a glimpse of the Lago Maggiore and the southern ranges of the Alps. Even without going as far as the *Joderhorn* the panorama may be extended by mounting the rocks behind the wooden cross on the pass, so as to gain the view of Monte Rosa on the one side and that of the entire Saas valley on the other.

The colonies of Italians at Saas (1250), and of Vallaisans at Macugnaga (between 1262 and 1291), imply the frequent use of the Monte Moro, but the first distinct mention of a path across it occurs in a document of 1403, by which the men of the two valleys agree to keep in repair the track on their respective sides of the pass, while in 1410 the Vallais men made a raid across it, but were defeated at Vanzone. It was much used in the fifteenth and sixteenth centuries by pilgrims to Varallo, and by persons going to the fair at Macugnaga or Vogogna. The name seems to be a cross between two old names—*Magganaberg* (the Macugnaga mountain or pass) and *Mons Martis*, a Latinised form referring to the *Martinswald*, or *Mattwald*, below Saas, frequently mentioned in old documents. The latter name appears also under the form *Mundmar*, and is connected with the *Mattmark*. In any case the name of the pass has nothing to do with Ludovico il Moro, duke of Milan (M.) It is scarcely necessary to say that the name Monte Moro applies to the *pass*, and not to any of the neighbouring summits. All the old passes across the Alps received this prefix, distinct names for separate peaks not being recognised till a much later date.

[By bearing W. from the pass and traversing the upper snows of the Seewinen and Schwarzberg gls., it is easy to reach the Schwarzberg Weiss-

thor (Rte. F. c) in 3 hrs., and thence go either to Zermatt or back to Mattmark by the Schwarzberg gl.]

The descent from the Col to Macugnaga is long, and for so frequented a pass very steep; but the view which remains before the traveller's eyes prevents the way from becoming tedious. The modern mule track begins again at the first chalets. On approaching the valley some scattered pines represent the remains of the forest that once filled the basin of Macugnaga. In 2 hrs. from the pass the inns at Macugnaga are gained. In the opposite direction 4 hrs. are needed from Macugnaga to the top, and about the same time for the descent to Saas Grund.

ROUTE O.

SAAS TO ZERMATT.

The range of the Saasgrat, extending from the Strahlhorn to the Balfrin, ranks next in height to those of Mont Blanc and Monte Rosa, and serves to separate the valleys of Saas and Zermatt. Despite the great elevation of this range, the passes across it are by no means hard, save the two difficult and dangerous traverses made in 1869 by Messrs. G. E. Foster and H. Walker, which we do not count as 'passes'—the *Domjoch* (4,286 m., 14,062 ft.), between the Täschhorn and the Dom, and the *Nadeljoch* (4,167 m., 13,672 ft.), between the Dom and the Südlenspitze. It seems most convenient to reserve for the next Rte. a description of the passes over the N. end of this great chain, leading to the Ried gl. In this Rte. we include the four main passes between the Täschhorn and the Dom, referring to Rte. F. c. for an account of the Schwarzberg Weiss-thor, the easiest of all. The last-

named pass, like the Adler, is best taken from the Mattmark inn; the others are easily gained from Saas Fee, though the little-used Allalin Pass is also reached without any trouble from Mattmark. A summary of the chief ascents to be made from Saas Fee will be found under the pass which from its popularity claims the first place.

1. *By the Alphubel Pass*, or the **Fee Pass**.—These two passes are attained by such similar routes on either side that they may be described together. Some good authorities prefer the Fee Pass of the two, and it is certainly the most convenient, if it be intended to ascend the Allalinhorn.

The upland valley of **Fee** (the name of which should *not* be accented, as it has no connection with fairies, but is derived from the old German word 'feoh,' meaning cattle, or from 'fea,' a Romance word signifying a ewe, being in reality the pasturage ground of the inhabitants of Saas Grund) lies in a recess in the Saasgrat, and has only of late years, owing to the construction of several large inns, become a popular place of sojourn. The upper part of the basin in which is the hamlet of Fee is filled by the extensive *Fee gl.*, round which rise in a grand amphitheatre most of the highest peaks of the Saasgrat. On the r. of the spectator is the *Südlenspitze* (4,300 m., 14,108 ft.), which leads the eye up to the precipitous twin peaks of the **Dom** and the **Täschhorn**, the culminating summits of the range. More to the S. are the flattened summit of the *Alphubel* (4,207 m., 13,803 ft.) and the pointed *Allalinhorn* (4,034 m., 13,236 ft.) From the latter peak a great ridge extends in a N.E. direction, forming the l. boundary of this wonderful amphitheatre, and terminating in the sharp, rocky summits of the *Egginer* (3,377 m., 11,080 ft.), and of the *Mittaghorn* (3,148 m., 10,329 ft.) It is over this wide gl. and through gaps between the peaks that have just been enumerated that the

traveller bound for Zermatt across the snow fields must make his way.

Fee is reached in $\frac{3}{4}$ hr. from Saas Grund by a mule track which crosses the Visp opposite Grund, and mounts through a forest and past the chapel of St. Joseph and the hamlet of *Wildli* to the highest hamlet, *Fee* (1,798 m., 5,899 ft.), now often called **Saas Fee**, in order to fix its position and to distinguish it from the main village in the valley below.

¶ Apart from the excursion described in connection with the Alphubel Pass to the *Lange Fluh*, the ascents of the *Egginer* or of the *Mittaghorn* are probably the most frequently made from Fee. The former summit is accessible in about 5 hrs. by way of the *Gaden* huts, the E. rim of the Fee gl., the small gl. on the W. flank of the peak, and the S. arête, while the latter summit is attained in 3 hrs. by rounding the base of its N. ridge, and then climbing its S.E. arête. Lovers of rock scrambles are recommended to go from the lower peak to the higher (4 hrs.) at first on the E., then on the W. side of the narrow ridge which connects them. Other favourite climbs from Fee are those of the *Nadelhorn*, *Südlenspitze*, *Balfrin*, and *Ulrichshorn* (all described in Rte. P), and of the *Allalinhorn* and *Alphubel*, described below. The ascent of the *Dom* by the great E. face is very dangerous, by reason of falling stones; that of the *Täschhorn* from the E. is very steep and difficult, though not so dangerous, and may be best made from Fee by the ridge running up from the *Mischabeljoch* to the peak. Another popular rock climb is that of the *Portjengrat*, on the E. side of the Saas valley (see § 21. Rte. C). On the same side are the two peaks of the *Fletschhorn*, and the *Weissmies*, which if taken from Fee involve a descent to the main valley before the real climb begins, and so may be most conveniently made from the inn above the Trift Alp (see § 21. Rtes. B and C). There is a direct path from Fee

to the village of Almagell, which shortens the way to some of these points if taken from Fee.]

The *Fee gl.* is divided into two large branches by the rocky promontory of the *Gletscher Alp*, visible from the village of Fee. A zigzag path leads up to the huts of that name in $1\frac{1}{4}$ hr. from Fee, and it is worth while, even for those not crossing any glacier pass, to continue to mount to the upper end of the promontory, or *Lange Fluh* (1 hr. more). Here the ice is entered on. A party bound for the *Alphubel Pass* must then mount the gl. in a slightly S.W. direction, keeping to the l. of a great wall of rocks coming down from the Alphubel peak, 3 hrs. from the Lange Fluh sufficing to reach the pass (3,802 m., 12,474 ft.) (If bound for the *Fee Pass*, the ascent from the Lange Fluh must be made in a nearly due S. direction, the pass (3,812 m., 12,507 ft.), at the W. foot of the Allalinhorn, being also gained in about 3 hrs.)

The *Alphubel Pass* was discovered by Mr. Leslie Stephen in 1860, but first completely traversed in the following year by Messrs. F. F. Tuckett and C. H. Fox. The peak of the *Alphubel* (4,207 m., 13,803 ft.) can be climbed from it in 2 hrs., and commands a fine view, though the Bernese Oberland peaks are already in sight from the pass itself. But the icy slopes are not always easy, and this summit is more easily reached by a snow ridge in 1 hr. from the *Mischabeljoch*, on its N. On the other hand, easy snow slopes lead from the *Fee Pass* in $1\frac{1}{2}$ hr. up the *Allalinhorn* (4,034 m., 13,236 ft.), a very fine point of view; it can be gained by several other routes, and taken on the way from *Fee* to *Zermatt*.

The easiest way down from the *Alphubel Pass* is to bear round to the l., so as ultimately to gain the rock ridge between the *Wand* and *Mellichen* gls., and then the r. bank of the latter ice stream, where the route from the *Fee Pass* (broken rocks above) is joined. In about 2 hrs. from either

pass the inn on the lower *Täsch Alp* (2,117 m., 6,946 ft.) is gained. There is a foot path hence to *Zermatt* (and also a direct descent to the hamlet of *Täsch*), carried for a considerable distance along a watercourse. It joins the main track in the *Zermatt* valley a short distance below the bridge over the *Visp* between *Täsch* and *Zermatt*. About $1\frac{1}{2}$ hr. are required from the *Täsch inn* to *Zermatt*.

2. *By the Mischabeljoch*.—This pass lies between the *Täschhorn* and the *Alphubel* peak, and was first effected in 1862 by Messrs. H. B. George, C. and W. Trotter, and Thomason, with Christian Almer and Peter Bohren. It is harder, though shorter in point of distance, than the passes described under 1. $\frac{1}{2}$ hr. beyond the *Lange Fluh* the *Alphubel Pass* route is left, and then a rock ridge more to the N.W., snow slopes, and a final ice slope ascended to the *Col*, 3,856 m., 12,651 ft. ($3\frac{1}{2}$ hrs. from the *Lange Fluh*.) The view may be much extended by following an easy snow ridge on the S. to the summit of the *Alphubel* peak (1 hr.) The rocky ridge on the N.W. offers the best, though not altogether easy, route from *Fee* up the *Täschhorn*, which is reached in 5-6 hrs. from the pass.

The first party were forced to cut down the icefall of the *Weingarten gl.*, on the W. side of the pass. But in 1867 Messrs. D. W. Freshfield, T. H. Carson, and C. C. Tucker, with D. Bailey and Franz Andermatten, were accidentally led by chamois tracks from the easy upper portion of that gl. to a point in the rocks on the l. of the icefall, from which the descent was found perfectly easy. The *Alphubel* and *Fee Pass* routes are joined in $2\frac{1}{4}$ hrs. from the *Col* at the *Täsch inn*.

3. *By the Allalin Pass*.—This is the oldest of all the passes between the *Saas* and *Zermatt* valleys, and the references in old writers to a pass over the *Saasgrat* all apply to it. It was reached from the W. side in 1845 by an

English party—one member was named Shuttleworth—but first crossed in modern times by Herr Imseug (the priest of Saas) thrice before 1847, and by Professor Ulrich's party in 1847. As it is inferior in scenery to its rivals, and a less direct way from Saas than the passes already described, it may be here dismissed shortly.

If the start be made from Mattmark, the Allalin gl. is reached by the same route as for the Adler Pass (below, 4), and the pass (3,570 m., 11,713 ft.) gained by making a great bend to the N. over that gl. (4½ hrs. from Mattmark.) A party coming from Fee must cross the ridge running N.E. from the Allalinhorn about midway between that summit and the Egginer, and then a broad snow col from the Hohlaub gl. to the Allalin gl., the pass being attained in 5 hrs. or so from Fee.

The view from the Col includes the great peaks enclosing the Zermatt valley from the Lyskamm to the Weisshorn, but may be much extended by climbing (in 2 hrs.) up the rocky ridge on the N.E. to the *Allalinhorn*, a course taken on the occasion of the first ascent of that peak in 1856 by Mr. Ames. But the most striking object near the pass is the craggy peak of the *Rimpfischhorn* (4,203 m., 12,790 ft.), the climb up which from the pass by a jagged rock arête is very difficult and takes 5 hrs.

On the W. side the descent down the *Mellichen* gl. is perfectly straightforward, and at its farther end the Alphubel Pass route is joined. The Täsch Alp inn may be reached in 2½ hrs. from the pass.

4. *By the Adler Pass.*—This is, perhaps, the most interesting of the passes from Saas to Zermatt, and was discovered by Herr Imseug, Professor Ulrich, and G. Studer, who made the first passage in 1849. But it was only in 1853, when Herr Imseug crossed it again, with Sir Alfred Wills, that it obtained its present name from an eagle's feather found on the crest of the ridge. The pass

may be reached from Fee by the route described under 3. But it is more convenient to start from the Mattmark inn. A rough track leads thence across the Schwarzberg gl. stream and up steep slopes to the point marked 2,872 m. on the Swiss map. The ascent then lies up the Allalin gl., the Allalin Pass being at the N.W. corner of the quadrangle enclosing that gl., and the Adler Pass at the S.W. corner. The latter pass is gained in 4½ hrs. from Mattmark (6 hrs. from Fee), and is at a height of 3,798 m. (12,461 ft.) between the Rimpfischhorn and the Strahlhorn. Hence the great range from Monte Rosa to the Gabelhorn is in sight. But no traveller, favoured by clear weather, should neglect to mount the easy snow slopes on the S.E. to the summit of the *Strahlhorn*, 4,191 m., 13,751 ft. (1 hr.), which commands one of the finest panoramic views in the Pennine Alps. Though a few feet lower than its neighbour, the Rimpfischhorn, it is better situated, the prospect to the E. and S. being comparatively clear. For this reason it is hard to point out a rival view in which all the elements that make up the grandeur of Alpine scenery are so perfectly combined. The *Rimpfischhorn* (4,203 m., 13,790 ft.) may be gained by a scramble of 3 hrs. from the Col up rocks.

The first bit of the descent from the Adler Pass was formerly feared, but is not now regarded as formidable even by novices. It consists of a steep ice slope resting against the rocks of the Rimpfischhorn, which are too smooth to offer hold for hands or feet. The descent is generally made close to these rocks, but the distance is fortunately not great, so that $\frac{1}{2}$ – $\frac{3}{4}$ hr. suffices to land the travellers at the head of the *Adler* gl., a tributary of the mightier Findelen gl. Here the Zermatt and Riffel routes divide.

If bound for the *upper Riffel inn*, it is best to bear S. from the upper bit of the *Adler* gl., and to keep over the upper snows round the E. end of

the Stockhorn, till the Schwarzberg Weisssthor route is gained. For *Zermatt* and the *Riffel Alp* the crevasses at the W. end of the Adler gl. are threaded, or turned by the moraine on the r. bank. Then the descent down the Findelen gl. to the Fluh alp inn (2 hrs. from the pass) is easy. A party bound for Zermatt has simply to follow the beaten track thence, while from the Grünsee inn (see Rte. A. 1), on the other side of that glacier, there is a nearly level mule path to the Riffel Alp, if that be the object of the day's journey.

It is possible to combine bits of some of these passes on the way over from Saas to Zermatt, and of course the peaks between them can be traversed, without touching the summit of any of the passes themselves.

ROUTE P.

SAAS TO ST. NIKLAUS.

It has been already pointed out (Rte. A. 3. *k.*) that, only separated from the Dom by the depression of the Nadeljoch, there rises the *Südenzspitze* (4,300 m., 14,108 ft.), whence the ridge of the Saasgrat, hitherto running N. and S., takes a bend to the N.W. The next, and highest, summit on this N.W. spur is the *Nadelhorn* (4,334 m., 14,220 ft.), at which point this spur splits into two great ridges. That known as the *Nadelgrat* runs in a N.W. direction, and is crowned by several lofty points, while a lower ridge bends first N.E. to the *Ulrichshorn* (3,929 m., 12,891 ft.), and then N. to the *Balfrin* (3,802 m., 12,474 ft.), which forms the N. end of the Saasgrat, and is the summit which is so conspicuous from Visp and the valley of the Rhône. Between these two branches extends the vast *Ried gl.*, the vast dimensions of which startle the traveller, as it is quite invisible

from below. It offers in itself but slight difficulties, but access to it from the Saas side is not altogether easy, and the routes are intricate. On that side there are two smaller gls.: that to the S. is the *Hohbalen gl.*, and gives access to the *Windjoch* (c. 3,800 m., 12,468 ft.), between the Nadelhorn and the Ulrichshorn, while that to the N. is the *Bider gl.*, at the head of which is the *Ried Pass* (11,800 ft.), between the Ulrichshorn and the Balfrin. But, as the Bider gl. is very steep, it is usual to gain the Ried Pass by climbing from the l. bank of the Hohbalen gl. up the rock wall which supports the r. bank of the Bider gl., and then following the crest of that wall. Hence the Windjoch is the shortest and best of these two passes.

(a) *The Windjoch.*—Though this pass was not discovered till 1886 by Sir Martin Conway, and Messrs. Scriven and West, it is now the usual route from Fee to the Ried gl., whence several of the great peaks around may be climbed. The way thither from Fee lies along the l. bank of the torrent flowing from the Hohbalen gl., the rock ridge between that gl. and a smaller one, the *Fall gl.*, on the S., and the upper snows of the Hohbalen gl. (4½ hrs.)

(b) *The Ried Pass.*—Formerly this was the direct glacier route from Saas to St. Niklaus, from at any rate 1848, when it was discovered by Herr Inseng and Prof. Ulrich, till the discovery of the Windjoch. As indicated above, the way from Saas Grund or Fee lies past the *Hannig huts* and along the l. bank of the Hohbalen gl. to the base of the rock wall stretching from the Ulrichshorn to the Gemshorn, and supporting the r. bank of the Bider gl. This wall is then scaled by a snow couloir or the rocks E. of it, and then its crest followed till it is possible to traverse the upper snows of that gl. to the pass (5½ hrs. from Grund, 5 hrs. from Fee).

The traveller having reached by one

or other of these passes the edge of the *Ried* gl., finds himself overlooking a broad, level plateau of névé separating the Nadelgrat from the **Balfrin**.

¶ If the latter peak, a wonderful panoramic point, is the object of the traveller, he has only to cross this plateau in a N. direction, and attain the summit either by its face or by either ridge (1 hr. from the Ried Pass, rather more from the Windjoch). The summit was first reached in 1863 by Mr. and Mrs. R. Spence Watson, and Herr Imseng, and commands a view which is admirable in itself, and is all the more striking in that the still higher peaks of the Dom, Weisshorn, &c., are near at hand. It is easy to descend by the Balfrin gl., on the N., to the Saas valley a little above the Hutegg inn, the start being made from the gap between the two points of the Balfrin.

The *Ulrichshorn* (named in 1848 in honour of one of its conquerors, Prof. Ulrich) is accessible by easy snow slopes in 1 hr. from the Ried Pass, or $\frac{1}{2}$ hr. from the Windjoch. From the latter pass the *Nadelhorn* may be climbed by an easy ridge (2 hrs.) The *Südenspitze* is best attained by continuing to follow the difficult E. arête, after the Windjoch route quits it (8 hrs. from Fee to the summit), or by gaining this ridge by a steep snow couloir from the upper snows of the Hohbalen gl. ¶

The descent from either pass towards St. Niklaus is the same, and offers no real difficulties. After leaving the great plateau of névé at the head of the gl. it is best to turn the upper icefall by the moraine on its r. bank, and then to cross between the two icefalls to the l. bank of the gl. A track between the hill-side and the moraine is followed to the *Schallbett* chalet, below the tail of the gl., and thenceforward there is a good path past the village of *Gasenried* to St. Niklaus ($4\frac{1}{2}$ hrs.), or a more direct descent along a water-course and the l. bank of the torrent from the Ried gl.

SECTION 21.

SIMPLON DISTRICT.

BETWEEN the valley of Saas, described in the last Section, and the Simplon Pass there is a very considerable mountain range, parallel in its general direction with the Saasgrat, and important enough in any other neighbourhood than that of Monte Rosa to have early attracted the attention of mountaineers. After long neglect this fine chain has now been thoroughly explored, at any rate on its Swiss side. From the Joderhorn, E. of the Monte Moro, to the *Portjengrat* (3,660 m., 12,008 ft.) the range in question forms the watershed between Switzerland and Italy, the Italian slope being all but entirely occupied by the fine and extensive valley of Antrona, still scarcely known to English travellers. N. of the Portjengrat rises the **Weissmies** (4,031 m., 13,226 ft.), the loftiest summit of the chain. Still farther to the N. are the twin summits of the Fletschhorn—the S. peak being the *Laquinhorn* (4,005 m., 13,140 ft.), and the N. peak the *Rossbodenhorn* (4,001 m., 13,128 ft.) On the E. side of this portion of the range one very long (*Zwischbergen*) and two short (*Laquin* and *Rossboden*) glens stretch down to the Simplon road, all being by a freak of historical geography in Switzerland, though on the S. side of the main chain of the Alps. A little to the N. of the *Rossbodenhorn* the chain forks, and two parallel ridges of no great height, enclosing between them the *Gamsersthal*, descend towards the Rhône valley between Visp and Brieg. The N. half of this long range is high, and so steep that the Saas valley and the Simplon road are in some places not more than 7 miles apart. Further S. the summits are lower, but two great ridges project to the E. which enclose the Antrona valley,