

We arrived at 4.30 at the tents and after hot drinks soon recovered our strength. Also Kesar's eyesight became normal again.

At 7.30 we arrived down at Camp I, evacuated everything to the Base Camp on 22nd, and on 27th arrived at Tapoban.

PACHMARHI, INDIA, C.P.
2-10-33.

DEAR DOCTOR LONGSTAFF,—The mistake about times was due to my carelessness in the account I sent you. I suppose I did not look it through with thoroughness. The actual times were these :

Left Camp II (<i>ca.</i> 19,000 ft.)	7.45 A.M.
At the site we meant to have Camp III (about 21,000 ft.)	{ 11.15 ,, 11.30 ,,
Summit	{ 2.45 P.M. 2.52 ,,
'Camp III' (<i>ca.</i> 21,000 ft.)	{ 4.30 ,, 5.00 ,,
Camp II	6.00 ,,
Camp I (<i>ca.</i> 17,000 ft.)	7.30 ,,

This gives my times :

Up : 4500 ft. in 7 hrs.

650 ft. per hour.

Down : 6500 ft. in 4½ hrs.

1440 ft. per hour.

These times are including rests.

Cf. [T. G. L.] 'A.J.' 24, 120 :

6000 ft. in 10 hrs.

600 ft. per hr.

7000 ft. in 3 hrs.

2333 ft. per hr.

Ditto.

P. R. OLIVER.

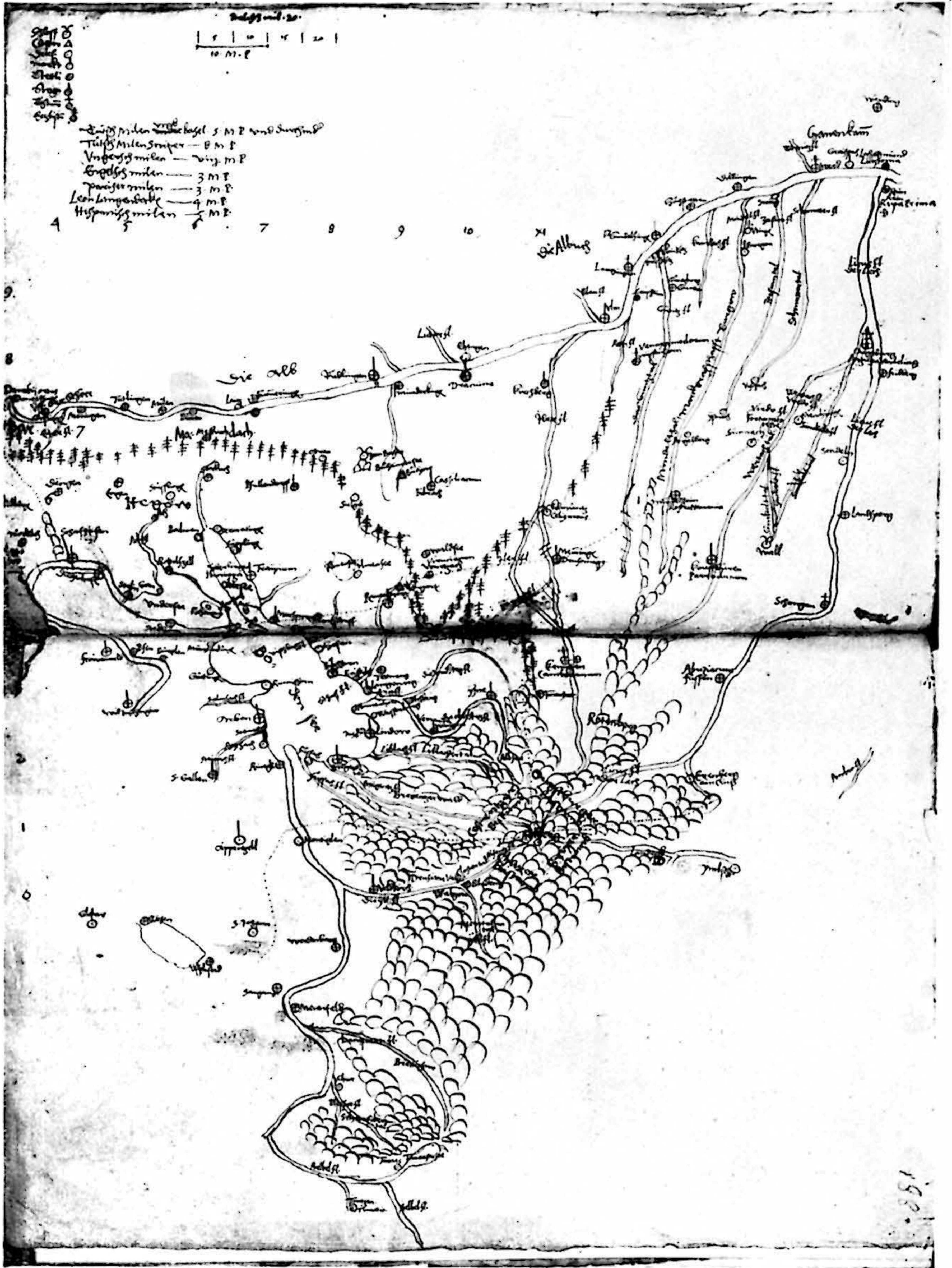
[Lieut. Oliver followed our 1907 route except perhaps at the commencement. There is no doubt at all that he attained the summit, which is the first (N.) small flattish dome: the very slightly lower and corniced S. top, across a small gap, would have been invisible in such weather. The snow conditions were identical with those of June 12, 1907: Alexis Brocherel wore *raquettes* up to 21,000 ft. Oliver's 'rush tactics' have my cordial admiration, and alone made success possible.—T. G. L.]

THE ALPINE MAPS OF AEGIDIUS TSCHUDI.

BY J. MONROE THORINGTON.

THE publication of the second and concluding part of Leo Bagrow's *A. Ortelii Catalogus Cartographorum*¹ has recalled attention to the collection of manuscript maps by the Swiss cartographer and historian, Aegidius Tschudi, at the library of St. Gallen.

¹ L. Bagrow, *A. Ortelii Catalogus Cartographorum* (Petermanns Mitteilungen, Ergänzungsheften 199, 210) (Gotha, 1928-30). Tschudi's maps of the British Isles are described in *G.J.* lxxxix, 39.



MAP I.—THE AREA ADJACENT TO LAKE CONSTANCE.

It is the purpose of the following paper to report further on this collection, which has received but little attention in modern times, aside from the mere cataloguing of its items. In this communication, only the maps of Alpine areas will be considered.

It may be said that in ancient times the important passes across the Alpine watershed were those of the Western Alps, and that those of the Central Alps were not opened until the Middle Ages. The classical passes were the Mont Genève (Alpis Cottia), the Little St. Bernard (Alpis Graia) and the Great St. Bernard (Summus Penninus). In addition, the Peutinger Table mentions the Splügen (Cunu aureu). The Simplon did not come into use until the thirteenth century, and the St. Gothard somewhat later, owing to the narrowness of their valleys of approach. The Septimer, in the Middle Ages, was the most important of the upper Rhine passes as a route from Germany to Italy, but thereafter fell into disuse. Passes frequently remain unnamed on maps, but their use is evident from the appearance of names of adjacent villages.

The first mapping of Switzerland, as such, took place during and after the consolidation period following the victories over Charles of Burgundy (1476–77), and the Peace of Basel (1499) which concluded the last Austrian war. We find, in comparing the Berlingheri *Ptolemy* (1481) with the Strassburg edition (1513), that the latter is improved by the map 'Chorographia Eremi Helvetiorum,' through inclusion of the chief data from the manuscript map of Switzerland by the Zürich physician, Conrad Türost. This was the progress made up to the early years of the sixteenth century, until superseded by the work of Tschudi.

Aegidius Tschudi (1505–72),² of Glarus, Switzerland, was the first to undertake seriously the history and topography of his country. After his eleventh year he came under the tuition of his relative Heinrich Loriti (Glareanus), who, in 1517, because of an epidemic raging in Switzerland, took Tschudi and other students to Paris, where they remained for three years. Glareanus had recently published his long poem, 'Descriptio de situ Helvetiae et vicinis gentibus' (1514), and was a recognized authority on the construction of globes, which may account for Tschudi's interest in geography. While in Paris it is probable that Tschudi saw an edition of *Ptolemy*, and realized that there was much to learn about Switzerland.

In 1523 we find him travelling through the Alps, from the Great St. Bernard—crossing the St. Théodule (1524), Furca and St. Gothard, and thence over the Lukmanier, San Bernardino, Splügen and Septimer passes. His career, however, became that of a minor statesman—successively bailiff of Sargans (1530), magistrate at Rorschach, bailiff of Baden (1533), envoy to Locarno, chief magistrate

² I. Fuchs, *Egidius Tschudi's von Glarus Leben und Schriften* (St. Gallen, 1805). J. Vogel, *Egidius Tschudi als Staatsmann und Geschichtsschreiber* (Zürich, 1856). B. Studer, *Geschichte der Physischen Geographie der Schweiz* (Berne, 1868).

of Glarus (1558)—and geography remained an avocation. While, with Glareanus and Vadianus (Joachim von Watt, who ascended Pilatus in 1513),³ Tschudi takes his place as one of the fathers of Swiss topography, yet his labours are represented chiefly by manuscript material.

Chance brought it about that his earliest work was printed. When he was about twenty years of age, after his Alpine wanderings, he wrote *Die uralte warhafftig Alpisch Rhetia, sampt dem Tract der anderen Alpgebirgen*. Some years later, in 1538, Glareanus, his old teacher, borrowed the manuscript and took it to Freiburg, where Sebastian Münster⁴ secured it long enough to make a copy. A Latin translation was also made and an edition in each language published in Basel, as Tschudi complained 'against my will, wish, and order, behind my back.'⁵

Tschudi and his friend, Josias Simler, were in correspondence from 1560 onward. Simler sent Tschudi portions of his own projected work on Switzerland, which Tschudi criticized and amplified. Simler, in turn, urged Tschudi to write, and Tschudi prepared *Gallia Comata* (ancient Helvetia and Rhaetia) which Simler was to translate into Latin so that it might be brought out simultaneously with a German version. This, his chief topographical work, was still in manuscript at the time of his death (1572), and Tschudi's relatives refused permission for Simler to make use of it, the work being eventually published by Pfarrer Gallati in 1758.⁶

In 1569 Tschudi wrote to Simler concerning a corrected map of Switzerland, which was to accompany this manuscript, but this map has vanished. Münster, however, issued a map of Switzerland by Tschudi, which he also received from Glareanus, with the 1538 book. No copy of this edition of the map can now be traced, but Haller states that the book was later accompanied by a smaller map, probably from Münster's edition (1540) of *Ptolemy*.

Tschudi had as his sources the Greek and Roman authorities, as well as the scholars of St. Gallen. He lived at a time when a brilliant group of scientists flourished: Pyrckheimer and Noviomagnus were among these, in addition to such native Swiss as Vadianus, Glareanus,

³ The ascent of Pilatus by Vadianus, Xylotectus, Myconius (the teacher of Conrad Gesner), and Grevel was the first ascent of a Swiss mountain with scientific intent, and dispelled the Pilate legend.

⁴ V. Hantsch, *Sebastian Münster, Leben, Werk, wissenschaftliche Bedeutung* (Leipzig, 1898).

⁵ '... on min wüssen, Willen und Bewelch, mir hinderrucks . . .,' *Gallia Comata*, p. 283.

⁶ *Hauptschlüssel zu zerschidenen Alterthumen oder gründliche-theils Historische-theils Topographische Beschreibung von den Ursprung, Landmarchen, Alpen Namen, und Mutter-Sprachen Galliae Comatae*. This book was intended to be an introduction to his chief work, *Chronicon Helveticum*, part of which was published posthumously (1734-36). Tschudi's reputation as an historical authority is not above reproach, for, according to Coolidge, he not only claimed to have copied inscriptions which never existed, but forged documents relating to the early history of Glarus.

Xylotectus (Zimmermann of Lucerne), Myconius (Geisshäusler of Lucerne), Conrad Gesner and Josias Simler.

There is no evidence that Tschudi saw Türost's map of Switzerland or the manuscript 'De Situ Confoederatorum Descriptio' which it accompanied. Nor is it likely that he saw Jacques Signot's map of the Alpine passes (Paris, 1515), or that of Orontius Finæus, 'Novus totius Galliae descriptio' (Paris, 1525; now known only through the re-edition of 1538).⁷

If one examines Tschudi's Alpine maps and those of the preceding years of the sixteenth century, one discovers that men of this time knew the peaks and valleys of the Alps, especially between Valais and Piedmont, Tessin and the Grisons, better than the geographers of a somewhat later period. Much nomenclature, still known to the local people, disappeared from subsequent maps and books. Tschudi, by his crossing of the St. Théodule in 1524, was the only writer of the sixteenth century to penetrate above the snow-line. He presents no description of glaciers, however, while Münster later described them in some detail.

Tschudi's map of Switzerland is on a larger scale (1 : 350,000) than that of Türost (1 : 820,000),⁸ but like it is oriented to the south. Sebastian Münster continued to make use of Tschudi's map, a reduced copy appearing in his *Solinus* (1538) under the title 'Descriptio Rhetie et Helvetie,' and two years later as 'Helvetia prima Rheni et VIII Nova Tabula,' in the Basel *Ptolemy*.

Mich. Isingrinus, the Basel publisher of Tschudi's book, brought out an edition of the map in 1560, 'Nova Rhaetiae atq totius Helvetiae descriptio per Aegidium Tschudum Glaronensem.'⁹ Re-editions of the book, in Latin and German, were issued at the same time. A final edition of the map, in nine sheets, appeared in 1614.¹⁰

That this map should have been copied in foreign countries is

⁷ For these maps see H. Ferrand, *Essai d'Histoire de la Cartographie Alpine* (Grenoble, 1903). Also J. Vallot, *Evolution de la Cartographie de la Savoie et du Mont Blanc* (Paris, 1922).

⁸ Türost's map is preserved in the Hofbibliothek at Vienna; a German version, once in the Erlach library of Spiez, is in Zürich, and the map was reproduced in *Quellen zur Schweizergeschichte*, vi. For critical notes, see *A.J.* 11, 420; 12, 182; and *S.A.C. Jahrbuch*, xviii, 328; xix, 417.

⁹ R. Wolf, *Geschichte der Vermessungen in der Schweiz* (Zürich, 1879). Amrein, *La plus ancienne carte de la Suisse et son auteur Egide Tschudi* (Geneva, 1882). The only example of this map is in the University Library of Basle; it is on nine sheets (1140 × 1290 cm.) and was reproduced by Hofer and Burger of Zürich in 1883.

¹⁰ J. H. Graf, *Beitrag zur Kenntnis der ältesten Schweizerkarte von Aegidius Tschudi* (Berne, 1885). The only known copy of this edition is in the possession of the Geographische Gesellschaft at Bern. For additional information on Tschudi's maps and contemporary work consult the following papers. E. Oberhummer, 'Die Entstehung der Alpenkarten,' *D. & Æ. A.-V. Zeitschrift*, xxxii, 32; 'Die Ältesten Karten der Westalpen,' *D. & Æ. A.-V. Zeitschrift*, xl, 7; A. Wäber, 'Bündner Berg- und Passnamen von den XIX Jahrhundert,' *S.A.C. Jahrbuch*, lxxvii, 152.

not surprising. In Italy it appeared first at Rome in 1555, published by Salamanca, engraved on copper by Bossius, and dedicated to Jost von Meggen, the Papal envoy from Lucerne. There was a new edition in 1563, and two more in 1566, all to be found in various Lafreri atlases.¹¹ Egnantio Dante copied the map at Florence in 1570,¹² and Ortelius presented 'Helvetia Aegidio Tschudio Authore Johann Buschemacher excudit' in the first edition of the *Theatrum*, Antwerp, 1570.

The Ortelius copy, although engraved on copper by Hogenberg, is distinctly inferior, being oriented to the south and omitting many important details. By 1595, Mercator had the advantage of being able to include the names of Oberland peaks which first appeared on the posthumous (1577) special map of that area by Thomas Schöpf, as well as the excellent map of Lake Geneva by Jacques Goulart, which Blaeu made use of throughout the editions of his *Atlas*.

Returning to the earlier writers on Switzerland: Münster brought out his *Cosmographia* in 1544, from the press of Heinrich Petrus at Basel, but the first edition does not contain a special map of Switzerland. In 1548 the Froschauer press of Zürich published Johann Stumpf's *Chronick*, containing no fewer than ten maps of Switzerland or of portions of that country. Tschudi's large map was the source of valuable information, but it must be remembered that Stumpf himself had travelled through the Valais in 1544 and surveyed much of that section.¹³

Münster undertook his own tour of the Valais in 1546, and later revised the *Cosmographia* to meet competition caused by Stumpf's book. The second edition of the *Cosmographia* appeared in 1550, containing the map 'Helvetiae moderna descriptio,'¹⁴ based on Tschudi's work. There was also a small map of the Valais reduced from two larger sheets of this area issued with the 1545 edition of the Basel *Ptolemy*.

Türst, Tschudi, Münster and Stumpf present between them on their maps but three special names of peaks: ¹⁵ *Mons Jubet* (Monte Giove), *Glaernisten* (Glärnisch) and *Vesulus* (Monte Viso). Stumpf mentions the Bietschhorn, but only in his text. Of those who

¹¹ Reproductions of the maps of 1555 and 1563 will be found in *Remarkable Maps of the XV, XVI and XVII Centuries* (Amsterdam, 1897). See also list of Lafreri maps in *G.J.* lxxiii, 368.

¹² A. Züricher, 'Eine Italienische Schweizerkarte des XVI Jahrhunderts,' *S.A.C. Jahrbuch*, xxvi, 333.

¹³ *Chronick* (edit. 1606), Bk. XI, dcliiib: 'Zu sölche hab ich selbs das herrlich land Wallis von oben biss unten auss durchwandelt, abgemessen und meines geringen vermögens aller nãmhafter Fläcken, flüssen und tãler gestalt und gelegenheit erdauert'; dcliiiii: 'Also hab ich dises land selbs gemassen unnd fleyssig besichtiget, Anno 1554 in monat Augusto.' For an outline of Stumpf's journey consult G. R. De Beer, *Early Travellers in the Alps* (London, 1930).

¹⁴ There is no special map of Switzerland in the edition of 1544.

¹⁵ W. A. B. Coolidge, *Josias Simler*, xc; also note in *A.J.* 17, 141.

copied Tschudi, Stumpf makes best use of his material, exceeding his contemporaries in the number and excellence of his general and special maps of Switzerland.

According to Bagrow, the library of St. Gallen contains the following maps by Tschudi, covering Alpine regions :

1. Gilg Tschudi's Karte begreifend das Aergau, Uechtland, Raurach und einen Theil der Franche-Comte, das Sundgäu und das Allgäu.

2. Karte von dem, was zwischen dem Po, Rhein, Etsch und der Saone liegt, so den grossten Theil Helvetiens enthält.

3. Der Strich Landes zwischen dem Genfersee, Besançon, Dijon, der Saone und Autun.

4. Karte so da stosset gegen Osten an Mailand und Rheinstrom, gegen Westen an die Saone und Rhone, gegen Süden an Marseille und Antibes; gegen Norden an Strassburg und Langres; worinnen ganz Helvetien begriffen ist.

5. Gilg Tschudi's Charte, grenzet gegen Osten an den Innfluss, gegen Westen an Hüffingen, Fürstenberg, Ravenspurg, Menzingen und Attinghausen, gegen Süden an das Sernftthal und Tamilg in Bündten, gegen Norden an Leutkirch, Schussenried und Messkirch.

6. Aegidii Tschudii Helvetiae et Italiae pars Occidentalis.

7. Gilg Tschudi's Kärtlein des Zugergebiets.

Four of these (2, 3, 4, 5) are duplicated in a different hand.

Through the courtesy of Dr. A. Fäh, librarian at St. Gallen, I am able to present photographic reproductions of these maps, with the exception of the last—the vicinity of Zug—which could not be found.

The maps are uncoloured and, although drawn to take best advantage of page dimensions, are all intended to be oriented to the N. This is noteworthy, since Münster is often given credit for first constancy in this method of orientation.¹⁶ It is practically certain that these maps were drawn during the period 1525–40, antedating Münster's *Ptolemy* and *Cosmographia* as well as Stumpf's *Chronick*. They are to be regarded as working-sheets, and are none the less remarkable on this account; but Tschudi's work has so long been associated with his finished map of Switzerland, with chains of triangular, crenellated and shaded peaks, that one is apt to forget that such effects are generally due to the art of the engraver.

The maps are now to be described, in the sequence given above :

Map 1. (32 × 43 cm. St. Gallen Cod. 664, p. 187.) A map of the Lake of Constance, including the area in the south-western angle between the Lech and Danube valleys. The head of the Inn valley is indicated as far down as Landeck and Innsbruck, and the Rhine valley is shown above the Lake of Constance as far as the Prätigau and Albula valleys. The position of the Lake of Wallenstadt has been roughly plotted.

A marginal scale, in units of ten *millia passuum*, is given, as well as a subdivided scale and a table of conversion into the standard miles of various countries. There is also a marginal explanation of the various conventional signs used to differentiate castles, monasteries, villages, market-towns, bishoprics and archbishoprics.

Conventional forests and mountains are used in the drawing. The bishoprics of Constance, Augsburg, Brixen and Chur are indicated as meeting in a common boundary-post marked *Arlberg*.

Map 2. (51 × 41 cm. St. Gallen Cod. 663, p. 717.) This map is based on a grid of meridians and parallels, the meridians converging, the area covered extending from Pontarlier and the Lake of Constance in the N. to Guillestre

¹⁶ Strangely enough, Münster allowed the 1538 map of Switzerland which he pirated from Tschudi to be engraved in southward orientation. At least this is the plan in the edition of 1560. Tschudi cannot be held responsible for this as his manuscript maps are all oriented toward the north.

and Verona in the S. The Adige valley forms the eastern boundary, while the western margin includes the Rhône tributaries from the Western Alps. E. of the line between Lakes Lucerne and Maggiore the country is not detailed, although certain isolated points, such as *Chur* and *Adulas Mons*, are laid down.

The main chains of the Western and Central Alps, as well as that of the Oberland, are shown in conventional form, with a great number of passes indicated by name and position. In the Western Alps one finds: *Mons Garos* (Col de la Traversette), *Alpes Cottiae*, *Geneua Mons* (Mont Genève), *Cenisius Minor* and *Cenisius Major* (Little and Great Mont Cenis), *Alpes Graiae* (Little St. Bernard), *Alpes Poeninae*, *Mons Jovis* (Great St. Bernard), *Gletsther*, *Siluius Mons* (St. Théodule), *Martis Mons* (Monte Moro), *Antrun* (Antrona) and *Sempione* (Simplon).

In the Central Alps one notes: *Albrun* and *Uber Greiss* (Gries).

N. of the Rhône valley the following Oberland passes are indicated: *Sanetsch*, *Raroin* (Rawil), *Gämmi* (Gemmi), *Letsther* (Lötschberg), and *Grimsel*. N.E. of Lake Brienz is the *Brunig*.

There are few mountain names: *Vesuls Mons* (Monte Viso) is shown with a conventional lake, *Cortus Padi*, at the source of the Po. *Siluius Mons*, associated with *Gletsther* (i.e. Gletscher = Glacier) at the St. Théodule, refers to the pass itself and not to the Matterhorn. Zermatt is not shown, while in the eastern branch of the Visp Valley *Uff Foë* refers to the Monte Moro Pass, and not to Saas Fee. *Adulas Mons*, noted above, may be intended to apply to the Lepontine Alps E. of the St. Gothard, or to the San Bernardino Pass, although Tschudi elsewhere (Map 4) uses *Vogel* to designate this pass. In the Middle Ages it was the 'pass of the birds,' just as the Splügen was known as *Urschler*, the 'pass of the bears.'

While on this, as well as the other maps now under discussion, neither the Valtellina, the Bregaglia nor the Engadine appear, yet on this map we have the Adige valley laid down from its source to Verona. Its upper portion, the Vintschgau, is, however, incorrectly placed in the N.-S. line of the main valley. A lake is shown at the source, as well as the village of *Fonzo* (Pfunds), which belongs to the Inn valley. S.W. of Meran is the *Frigidalfus Lacus* (Kalterer See) and *Mons Neanis* (Mendel Pass).

Map 3. (41 × 30 cm. St. Gallen Cod. 663, p. 714.) A map of the country N.W. of Lake Geneva, across the valley of the Saône to the bishopric city of *Augustodurum* (Autun). Conventional forests and mountains are used, the Jura being marked by a double chain. Dijon is on the northern margin of the map, as well as the archbishopric city of *Vesontium* (Besançon).

Map 4. (38 × 51 cm. St. Gallen Cod. 663, p. 708.) An elaborate map of Switzerland, Savoy and Piedmont, apparently reduced from Map 2, although covering a much wider area. The groundwork is constructed on a degree net, still faintly showing. There is a marginal legend explaining conventional signs used, as well as a long table giving the cross-reference positions (Ptolemy's) of important cities and other features.

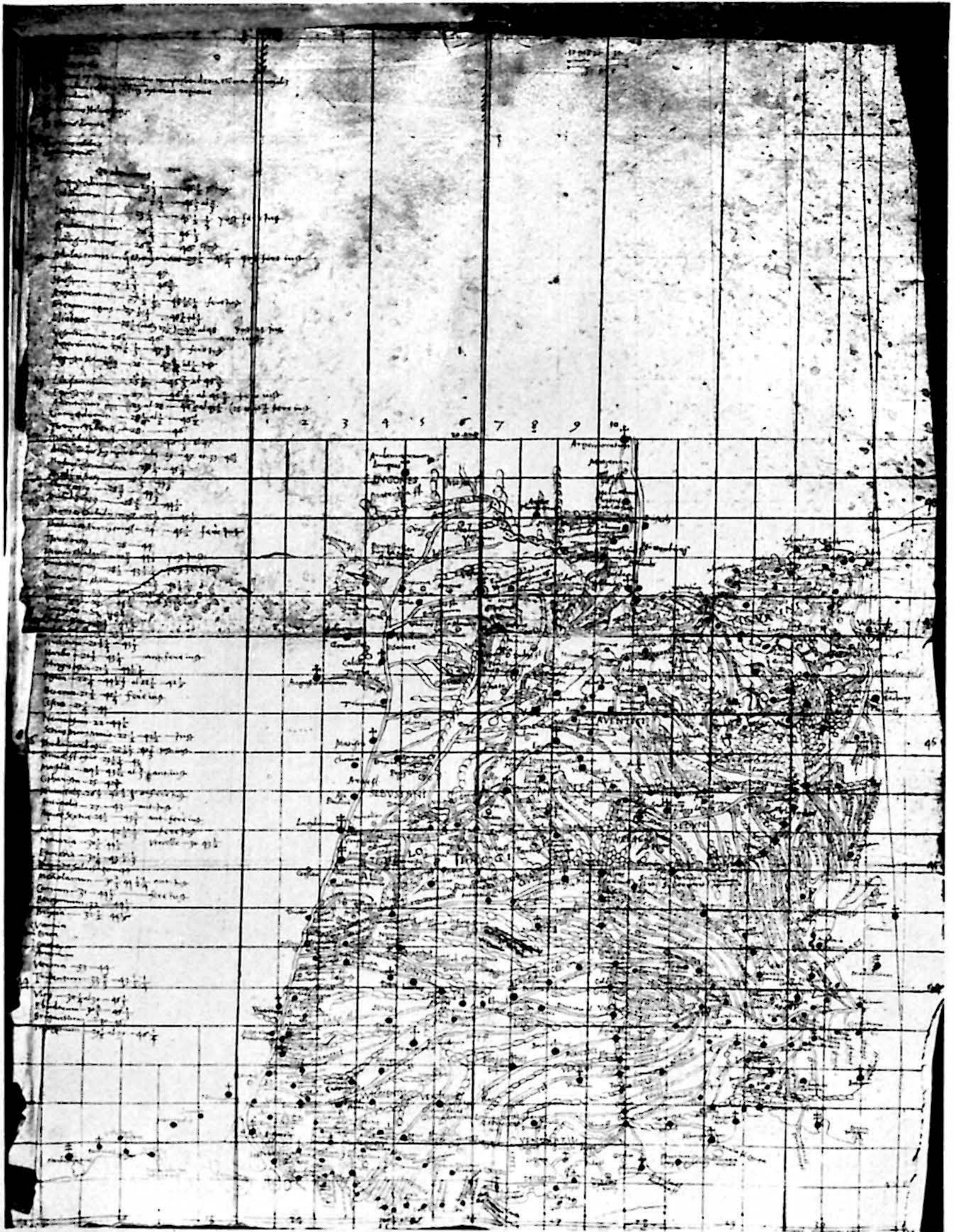
The area covered lies between Langres and Strasbourg on the N., the Rhône valley on the W., the Mediterranean coast on the S., and the line between the Lakes of Constance and Lugano on the E. The lettering is small and difficult to read, the map being crowded with names, applied to almost every valley on either slope of the Western Alps.

Passes of the Maritime and Cottian Alps, which do not appear on Map 2, are: *Tenda*, *Argenta* (Argentière), *Fenestra* (Finestre), and *Agnellus* (Agnel).

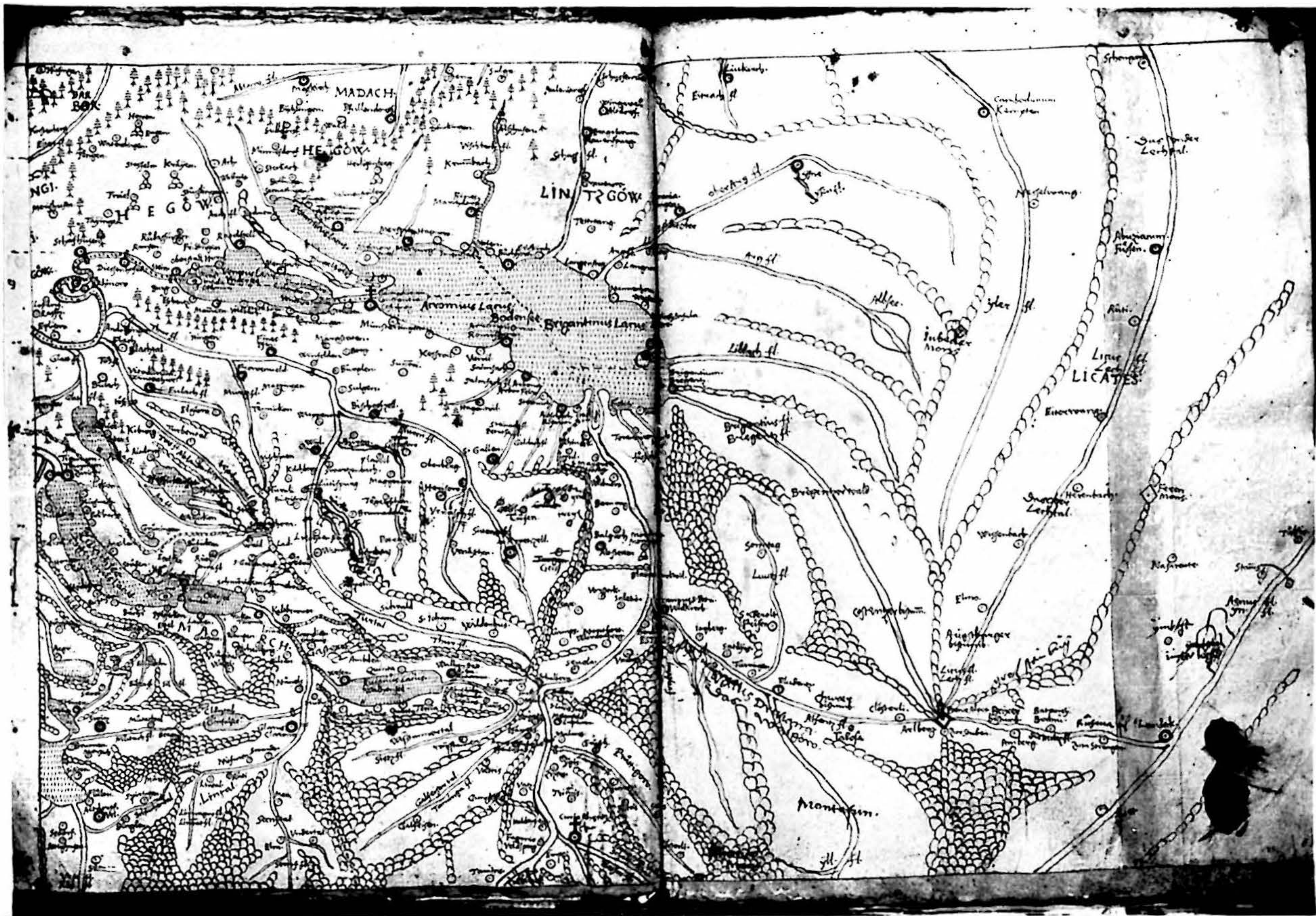
Passes of the Central Alps appearing on this map are: *Gothard Alpes* (St. Gothard), *Vogel* (San Bernardino), *Grimsel* and *Furck* (Furca).

The use of the Col de Lautaret road between Grenoble and Briançon is evidenced by the names *Vezilles* (Vizille), *Le Bourg Lentz* (Mont de Lans) and *Graue* (La Grave).¹⁷ The course of the Arve is indicated from Lake Geneva to a point above *Salance* (Sallanches).

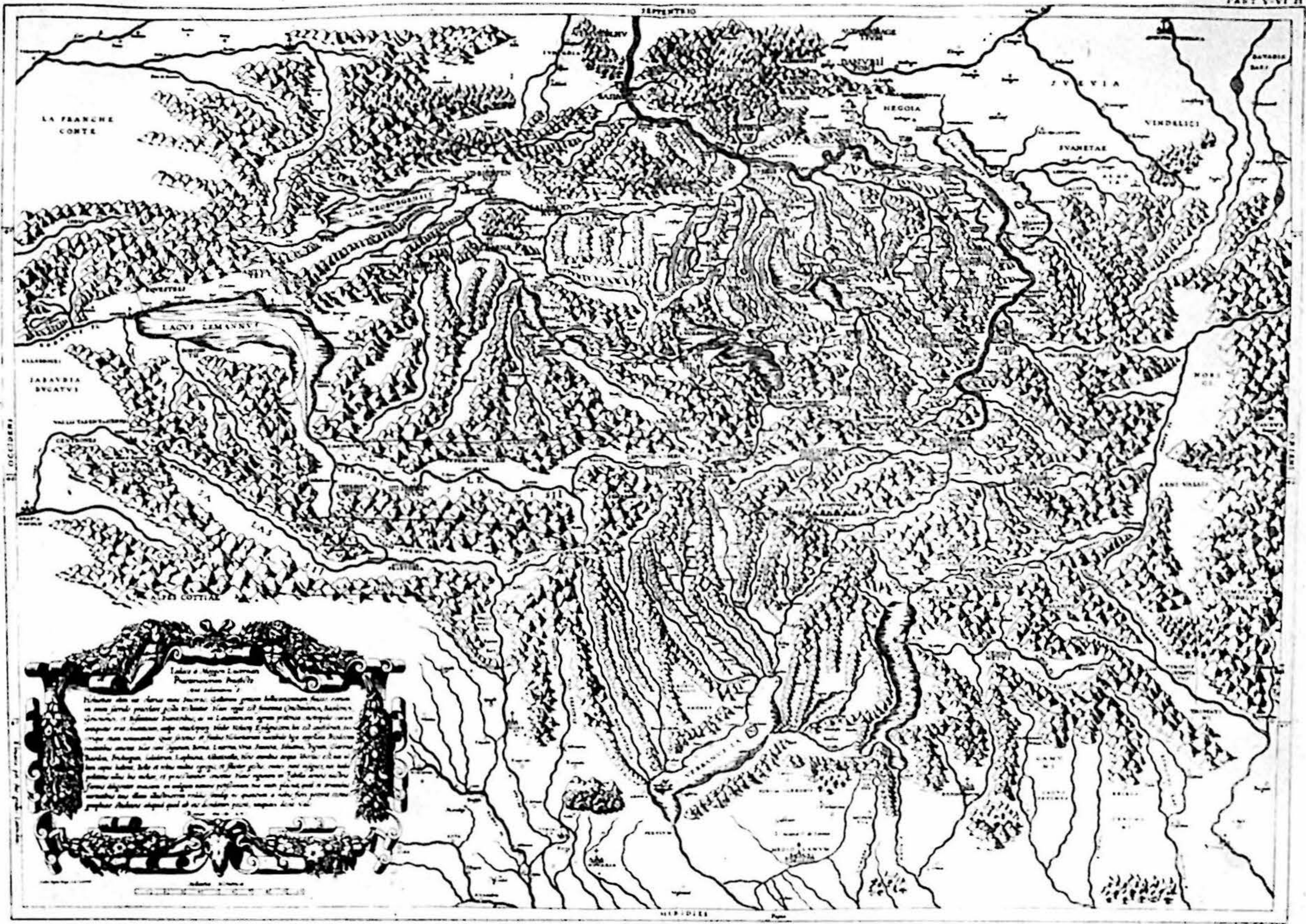
¹⁷ According to Ferrand (*loc. cit.*, see note 7), the map by Finæus was the first on which these names appeared.



MAP 4.—WESTERN SWITZERLAND, SAVOY AND PIEDMONT.



MAP 5.—THE GRISONS.



MAP 7.—SALAMANCA'S EDITION OF TSCHUDI'S (1538) MAP OF SWITZERLAND, ISSUED AT ROME IN 1555.

[To face p. 153.

Map 5. (50 × 32 cm. St. Gallen Cod. 664, p. 208.) A map of the area between Lake Lucerne and Innsbruck; Chur and the region immediately N. of the Lake of Constance. A considerable portion of the Grisons is, therefore, included and is first laid down with any degree of accuracy by Tschudi.

The positions of various bridges over the Rhine are shown. N. of Innsbruck is *Feren Mons* (Fern Pass). The junction of the Brixen, Augsburg, Chur and Constance bishoprics is shown at the boundary post of *Arlberg*, to which the title *Poenae Alpes* has been added, a name (Penninus) sometimes improperly applied to the Brenner Pass.

E. of Sargans, in the Rhine valley, is the *St. Lucis Steig* (Luziensteig), the old fortified defile leading towards Feldkirch.

Between the Prätigau and the Montafon valley an ancient name for the Umbrail Pass, *Rhaetico Mons*, is applied to the crest of the Rhätikon range. To the W. of Chur, *Gunkels* indicates the Kunkels Pass, while between Altdorf and Linthal the Klausen Pass is shown as *Märch*.

Map 6. (51 × 41 cm. St. Gallen Cod. 668, p. 719.) A map of the country between Besançon and the Mediterranean coast, including the area between the Rhône valley and the foot of the Western Alps, this range being shown only in its extent between the Mont Genève and the Little St. Bernard Passes. The Col de Lautaret route between Grenoble and Briançon is indicated as in Map 4, as is also the Arve valley between Lake Geneva and Sallanches.

The map occupies the right half of a large sheet laid out on a degree net. Of unusual interest is an inset on larger scale in the central portion of the sheet, showing the passes from the Rhône valley whose routes converge toward Lake Maggiore. These are: *Gletsther* (St. Théodule), *Antrun* (Antrona), *Sumpeler* (Simplon), *Albrun*, *Über Gries*, and *Gothard* (St. Gothard). It was with this section especially that Tschudi became familiar during the course of his earliest Alpine travels.

In conclusion one may say that general recognition has long been given to Tschudi's work on Switzerland itself, his printed map marking a considerable advance over the map of Conrad Türost, delineating as it does from his own travels the passes in the Western and Central Alps E. of the Great St. Bernard, and adding the Grisons as his special field of later activity. The printed map includes the Valtellina, the Bregaglia and the Engadine, and it is necessary to postulate a manuscript map on which they also appeared. This is of course the manuscript map which Münster used, thereby accounting for its absence in the St. Gallen collection. If it is reasonable to suppose that the remaining manuscript maps at St. Gallen were the working drawings on which the final sheet was based, we can limit the time of their drafting to the period 1525-38.

Tschudi's manuscript maps adduce hitherto unrecognized evidence of his knowledge of the Alps outside of Switzerland. This is relatively unimportant as far as the Eastern Alps are concerned, for with the main chain E. of the Reschen-Scheideck Pass he was unacquainted, special cartography of this section being a product of the seventeenth century, bound up with the history of the Oetzthal glaciers.¹⁸ Tschudi, however, did understand the general geography of the Inn valley above Innsbruck, and its relation to the Adige at the Reschen-Scheideck, as well as the topography of the Brenner road.

¹⁸ J. M. Thorington, 'The Oetzthal Glaciers in History and Cartography before 1800,' *G.J.* lxxv, 238.

Especially, however, the manuscript maps indicate unusual comprehension of the Western Alps as a whole ; indeed, the success of Tschudi's mapping of the Maritime, Cottian and Graian Alps is difficult to explain unless one assumes it to be based on personal experience. It is not impossible that after Tschudi's return from Paris his Alpine travels in this direction were more extensive than has been supposed. The only alternative, to account for names in Dauphiné, is that he secured the information from the map of France by Finæus.

Bagrow's list of Tschudi's maps includes many of extra-Alpine regions : Europe, Asia and Africa are covered by the manuscripts, and the question arises as to why he took pains to make such a complete collection. A partial answer may be expressed by the present writer's belief that Tschudi had a definite purpose in mind, namely, to produce an Atlas of the Eastern Hemisphere which would supersede the inaccuracies of various editions of *Ptolemy*—a plan which went into abeyance on the appearance of the works of Münster and of Stumpf, and which collapsed with the publication of the *Theatrum* by Ortelius in 1570, and Tschudi's death two years later.

PORTERS I HAVE KNOWN.

BY W. T. KIRKPATRICK.

IN our early days, if Hope and I were going to a hut for one night only, we used sometimes, partly for economy, partly from a spirit of independence, to carry everything ourselves. On these occasions, long before we reached the hut, we invariably registered a vow always in future to have a porter, and after a time made it a rule to do so. Thus in the course of our Alpine rambles we employed many men of various types and different nationalities, and if I had kept notes of their idiosyncrasies I might have been able to write quite an entertaining paper about them. As it is there are only a very few who stand out in my memory.

As we knew that the Swiss Alpine soldier was expected to carry 40 kilos,¹ including his rifle and parts of a machine-gun, up a mountain path,² we thought we could reasonably expect a porter to carry 40 or 50 lbs. where no climbing was involved, though the porters did not always agree with us in this.

We found the baskets that the Swiss peasants carry on their backs, broad at the top and tapering at the bottom, excellent to

¹ A friend of mine, who is the concierge at a well-known Swiss hotel, and is a man of quite ordinary build, tells me that he would carry 40 kilos himself.

² No man could possibly *fight* under this load.—*Editor*.