

cell-contents were dividing into spores. Transported to Champex, at a height of 1,460 m., it produced biciliated zoospores, and was scarcely distinguishable from *Hæmatococcus lacustris*, an inhabitant of the Lake of Geneva. Among other organisms found on the Col des Écandies was a new species of *Raphidium*, which the author names *R. nivale*, and one belonging to a higher order of structure, a very little known desmid, *Ancylonema Nordenskiöldii*, hitherto found only in Scandinavia.

A. W. B.

GIFTS TO THE CLUB.—The following gifts have been made to the Club during the past three months:—Two water-colour pictures by Josiah Gilbert, 'Cima della Pala and Cima della Vezzana' and 'Valle di Cadore,' presented by Mr. D. W. Freshfield; a large number of Caucasian photographs by Signor Sella, presented by Mr. D. W. Freshfield.

REVIEWS AND NOTICES.

The Distribution of Plants on the South Side of the Alps. By the late John Ball, F.R.S. (Transactions of the Linnean Society of London, vol. v., part 4.)

THE geographical distribution of Alpine plants was a subject which exercised a great fascination on the author of the 'Alpine Guide,' and it is probable that it was never absent from his mind in his numerous expeditions. For the last thirty years of his life he was patiently accumulating the facts of distribution now issued in tabular form by the Linnean Society. How this came about is explained in the following paragraph from the introductory note by Mr. Thiselton Dyer, Director of the Royal Gardens, Kew, which accompanies Mr. Ball's work.

'Mr. Ball died on October 21, 1889, somewhat unexpectedly, after a brief illness. Some time afterwards his widow placed in my hands his botanical papers, in the hope that I might be able to extract from them something of permanent value which would record his long and patient labours upon the Alpine flora. The task was no easy one; and I think I should have shrunk from it without the encouragement of Mr. G. C. Churchill, the best surviving authority in the country on the subject, and of Mr. J. G. Baker, F.R.S., the keeper of the Kew Herbarium. As the result, I found that practically the whole of Mr. Ball's work on the flora of the Alps is concentrated in the elaborate table of the distribution of plants on the south side of the Alps, which is now submitted to the Society.' It is this table, extending over a hundred quarto pages, which constitutes the subject of this notice.

Mr. Ball set himself the task of tabulating the plants growing on the southern side of the chain of the Alps, so as to show their distribution within the range of the Alps and on the other mountains of Europe. The southern side was selected because of the richness and varied character of its flora, and because it had been less fully investigated. This region he divided into fifty

districts, of which the following are four taken at random :—Mont Cenis-Susa-Col de Clairée; Val d'Orca-Val Campea; Val di Cogne-Mont Emilius-Val Champorcher; Cadore-Sources of the Piave. These fifty districts are represented by as many columns in the table, and the presence or absence of each of the 2,010 species of plants occurring in the whole region is indicated for each district. This portion of the table consequently partakes of the nature of fifty local floras thrown into a form convenient for reference, and as such is of high interest to the Alpine wanderer. But the table is not confined to this. There are ten additional columns in which the occurrence in or absence from the other mountainous regions of Europe of these same plants is recorded. This feature of the work is of especial value to the student of geographical botany.

Though many sources of information have been employed by Mr. Ball in his compilation, the greater portion is based on the records of his own extensive explorations. Unfortunately, the records of the altitudes at which the plants grew were too incomplete to admit of publication; but, fortunately, a less detailed statistical analysis of the whole flora in regard to its vertical distribution is given by Mr. Ball in his lecture 'On the Origin of the Flora of the European Alps.'* This lecture might well have been reprinted *in extenso* to accompany the table, but we can hardly blame the Linnean Society for not doing so. Another very welcome addition would have been a map showing the districts, but this idea was, we think, unfortunately abandoned. Mr. Thiselton Dyer explains that 'those who are acquainted with an intricate mountainous country will readily understand that, though practically there may not be the smallest difficulty in recognising a particular district on the spot, questions of great intricacy may, and probably will, present themselves in attempting to delimit it on a map.'

So far as they have been put on record, Mr. Ball's views on the origin of the Alpine flora are to be found in the above-mentioned lecture, printed in the 'Proceedings' of the Royal Geographical Society. Taking the 2,010 species of Alpine plants enumerated, Mr. Ball points out that more than two-fifths of the whole number are to be found in the floras of all parts of temperate Europe, many extending to Siberia, and some to North America. These are plants of vigorous organisation, with a considerable power of adapting themselves to varied environment. They do not ascend high up the mountain slopes, and form no special element in the Alpine flora. Consequently, to obtain the true Alpine flora, these—792 in number—must be subtracted from the 2,010, as also must 61 stragglers from the Mediterranean area. This leaves 1,157, and Mr. Ball proceeds to consider them more closely. The result is to confirm him in his belief that the Alpine flora owed comparatively little to a migration from the Arctic flora. Here is his conclusion :—'Of the species included in the Alpine flora 17 per cent. are common to the Arctic flora, and 25 per cent. are common

* *Proceedings of the Royal Geographical Society, 1879.*

to the Altai range; while the Arctic flora has 40 per cent. common to the Alps and 50 per cent. common to the Altai, using this as a collective name for the ranges of Northern Asia.

'Now if, in deference to the great authorities I have named, I were to admit that every one of the Arctic species common to the Alps had originally reached the mountains of Central Europe by migration from the north, I ask how far that would avail towards an explanation of the origin of the Alpine flora? If we had accounted for 17 per cent. of the species, what should we have to say of the remaining 83 per cent., including at least four generic types peculiar to the Alps, and a very large number not found in the Arctic regions—of the genera present in the higher zone of the Alps only one-half being Arctic? Is it credible that in the short interval since the close of the glacial period, hundreds of very distinct species and several genera have been developed in the Alps, and—what is no less hard to conceive—that several of these non-Arctic species and genera should still more recently have been distributed at wide intervals throughout a discontinuous mountain chain some 1,500 miles in length, from the Pyrenees to the Eastern Carpathians? Nor would the difficulties cease there. You would have left unexplained the fact that many of these non-Arctic types which are present in the Alps are represented in the mountains of distant regions, not by the same, but by allied, species, which must have descended from a common ancestor; that one species of *Wulfenia*, for example, inhabits one small corner of the Alps, that another is found in Northern Syria, while a third allied species has its home in the Himalaya.'

In conclusion, it may be stated that Mr. Ball has left behind him in these tabulations a fine monument to his unbounded industry, and one that will be of enormous service to future workers in the same field.

Life and Letters of Fenton J. A. Hort. By A. F. Hort. 2 vols.
(Macmillan. 1896.)

With the end of the present year the Alpine Club will complete the fortieth of its existence. Thus the Club is older than probably almost half of its members; for though a considerable proportion of the tops on which our President looks down from his exalted seat on the platform are fairly powdered with white, there are, happily, a large number still well below the snow line. The time has, therefore, obviously arrived when the 'Alpine Journal' may devote a little of its space to the pious task of 'praising famous men and our fathers that begat us;' and it is from this point of view that we would draw our readers' attention to these memoirs of one who is very distinctly in that category. A few of our founders are still with us; long may they remain! but of those who responded to Mr. Kennedy's appeal in the autumn of 1857 the great majority have disappeared from the list of the Club—some by resignation, still more by death. Of all the number, perhaps, none, not even our first President, was more typical of the kind of persons

who in those days sought recreation in the Alps than the man whom a younger generation knew chiefly as a great theological scholar, the late Professor Hort. Mountaineering, in one form or another, has now become a fashionable pastime, and the popular Alpine resorts are largely replenished during the season from Bayswater and Kensington; but in those days if you met a man in the Alps it was ten to one that he was an University man, eight to one (say) that he was a Cambridge man, and about even betting that he was a fellow of his college. There was, too, a fair probability that he was also a more or less competent botanist or geologist. Hort combined all these qualifications, the last in a large measure. Though he ultimately made theology and New Testament criticism his special line several distinguished botanists seem to have expressed their regret at the perversity, as it appeared to them, which led him to abandon the systematic study of a science in which everything pointed to his attaining the highest eminence. He never, indeed, deserted it altogether. 'In 1861,' we are told, 'he stayed a fortnight at the top of the Stelvio Pass. A friend expressed surprise that he and his wife could linger at such a place. "Oh, but," he said, in perfect simplicity, "we have found fourteen new plants."' Three years later he spent three weeks with perfect contentment at Limone, on the Col di Tenda, and when that grew too hot a month on the Mont Cenis. At the latter spot an interesting meeting took place.

'On Monday evening,' says Hort, 'I saw the *conducteur* throw down to the people of the house a plaid and a black knapsack, and cry out that they belonged to a *monsieur et dame* (as I understood) who would be *bientôt ici*. Presently I saw a man in a grisly beard come up the steps with some flowers in his hand and a curious thing over his shoulders, which turned out to be an umbrella tied on to a pole, with what seemed to be a pick in a leather case. Clearly he was Alpine, probably English, and moreover he looked uncommonly like Ball! I got the landlady to go in with water and towel, and ask his name apologetically on behalf of a *monsieur* who thought he recognised him. In answer I heard, "Ball, Ball, Ball," three times very distinctly. Of course I waylaid him as he came out, and made him have his coffee brought to my room, where we chatted and looked over plants for some time.'

Ball was on his way to Santa Caterina, and Hort incidentally mentions that the second volume of the 'Alpine Guide,' then just published, contained little or no information on those regions except what he himself had been able to collect at Santa Maria three years before. Mr. Tuckett's expedition of that summer was really the first serious attempt ever made at a thorough investigation of the topography of the Ortler group.

'Next morning the two botanists walked down to Susa, by the side of the valley, or basin, of the Cenise opposite to that followed by the road, along the side of the Rocca Melone.' 'I doubt,' the writer adds, 'whether I have ever had such a haul of plants—twenty species entirely new to me, and seven of them belonging to seven new *genera* . . . and then there was the benefit of having Ball with me.'

Hort had not, as we know, always made botany his first interest in the Alps. His first visit to Switzerland and Tyrol was made in 1854, when he was twenty-six years old; though his glacier expeditions of that year did not go beyond such feats as a visit to the Jardin, and 'a long and difficult climb to the Stockhorn of the Zmutt Glacier,' and the crossing of the Löttschen Pass. But he had got well inoculated with the climbing fever, and when he went that way again two years later he was prepared to fly at higher game. In company with the late Bishop of Durham he made the ascent of the Jungfrau under somewhat curious circumstances. For fourteen years the mountain had been untouched; then it began again to attract attention, and the expedition of Hort and Lightfoot was the third within a week. The account given in Hort's letters is very characteristic of those days, before what may be called the jargon or 'shop' of mountaineering had sprung up, when Siegfried maps were not, when everything was a novelty, and even a walk up the Aletsch Glacier had much of the charm of exploration. Some readers may be amused with the few trenchant strokes in which a 'young Austrian,' whom the party met at the Faulberg, is touched off.

From the Oberland, in the lavish fashion of those days before 'centres,' they proceeded to the Mont Blanc district, taking the Altels on their way. It is interesting to read that Hort did a good deal of photographing, and still more interesting would it be to have a sight of the results, if they still exist. For more than a month Hort remained at St. Gervais, forming one of a persevering band who made repeated attempts to complete the ascent of Mont Blanc from that side, a route of which the feasibility as far as the Dôme du Gouté had been proved by Messrs. Hudson and Kennedy in the previous year. How the various attempts fared is known to all readers of Mr. Vaughan Hawkins's paper in the first volume of 'Peaks, Passes, and Glaciers,' a paper which is, perhaps, more thoroughly coloured with the sentiment, if we may so say, of bad weather than any other Alpine writing with which we are acquainted.

This seems to have been the last of Hort's high mountaineering. Not long after this his health gave way, largely from over-work; and from that time forward anything like high climbing was forbidden him. He was, indeed, for the remainder of his life in a position extremely tantalising to one who had, while his powers lasted, delighted as much as any man in the 'Alpine sport,' for he was at the same time enjoined by his medical advisers to spend a large part of every summer at some Alpine resort as high as could be found. In this way he made acquaintance not only with some places now frequented by crowds, but then the haunt of a few intimates—the Riffel, the Aeggischhorn, Mürren—but with some less known quarters. Nor do we ever find him complaining of this enforced inactivity. Fortunately for him climbing was not his only resource. His scientific attainments and interests became of the greatest possible service to him; and his example may serve to show the value to a true lover of the Alps of some study which he may take

with him. Of course the man who takes up climbing for a few years because it is the *mode*, who has a season or two of 'Rothhorn, Matterhorn, Weisshorn,' devotes one or two more to finding a new route up the Fünffinger-Spitze, and then deserts the mountains without a pang for golf or cycling, or whatever may be the latest fashion in amusements, has no need of any second string. But these are not the majority. Most men who made their first acquaintance with the mountains in boyhood or early youth feel like the 'ten-year soldier' musing on what lies 'east of Suez.'

Once you've heard the *Alps* a-calling
 You won't never 'eed naught else ;
 No ! you won't 'eed nothing else
 But them spicy *chalet* smells,
 And the sunshine and the *pine trees*,
 And the tinkling *cattle* bells.

To the mountains, able-bodied or not, they will go, and it will be well for them if, like Hort in the years when he was obliged to ride mules where he had stoutly walked, and wander about the foot of the peaks he had climbed, and others which he would have delighted to climb, they have other interests to fall back on, and other fields to explore, in which vigour of body is not indispensable.

The Flora of the Alps. By Alfred W. Bennett, M.A., B.Sc., F.L.S.
 2 vols. (London : J. C. Nimmo. 1896.)

These two volumes differ from the various handbooks hitherto provided for the wanderer in the mountainous regions of Europe. For whilst Gremli is restricted to the flora of Switzerland, and Dalla-Torre to the Alpine plants of Switzerland and the adjacent mountain regions, Mr. Bennett's work includes descriptions of all the species of flowering-plants indigenous to Switzerland, and of the Alpine species of France, Italy, and Austria, including the Pyrenees. The comprehensive nature of the book will, no doubt, be acceptable to many, though he who journeys year after year to Switzerland will probably be content to go on using his well-worn Gremli. The descriptive portion of the work is arranged on the system familiar to English botanists—*i.e.*, that of Bentham and Hooker—a welcome innovation in Alpine floras, which have been too long wedded to the irritating Linnæan system. The reader must not expect a full description of every species cited. Were this the case the book would be too cumbersome for portability. But the details given are, on the whole, adequate, and the amateur botanist will be able with this book in hand to identify as many of the plants he finds as he could with any other. The plates, 120 in number, and printed in colour, are a disappointment. They seem to us lacking in artistic qualities, are defective in drawing, and crude and garish in colouring. We much prefer the rough, unambitious, little lithographs which constitute Schröter's 'Taschenflora des Alpen-Wanderers'; but this is only an opinion. Many will, without doubt, value the pictures in the present work for their laborious carefulness and attention to detail. The body of the work is pre-

ceded by an interesting introduction, in which the biological characters and geographical distribution of Alpine plants are touched upon. Though some allusion is made to Alpine botanic gardens, we see no mention of the very charming garden at Bourg St. Pierre on the St. Bernard, where may be seen a large number of Alpines, not Swiss only, but from all parts of the world. Botanically, this spot is no less attractive for its wild flowers than for its garden, whilst the scenery is as noble as any in the Swiss Alps. But the traveller hurries by on his way to the hospice! It only remains to be added that the book is beyond criticism in the matter of paper and printing, and that it is furnished with an adequate index and glossary of technical terms.

Guida delle Alpi Occidentali. Da G. Bobba e L. Vaccarone, Vol. ii. 'Alpi Graie e Pennine.' Parte Seconda. (Torino. 1896.) Pp. xxxix, 553. Price, 8 francs, bound.

This anxiously expected work forms the completion of the 'Guide to the Italian Slope of the Western Alps.' The first volume, by SS. E. A. Martelli and L. Vaccarone, was reviewed in this Journal* in May 1889, the second volume, part i. (by the same authors) in November† 1889.

As the scope of the work was fully explained in these reviews we need not here do more than say that its excellence is fully maintained in this volume. The amount of information given is immense, and the work will be invaluable to all climbers who visit the districts covered by the book.

The panoramas and plates, of which there are eleven, will be found most helpful. In particular No. ii., the mountains at the end of the Valnontey, from a photograph by S. C. Grosso, gives at one glance information which a few years ago it would have taken hours, not to say days, of hard labour to put together, whilst the nomenclature is not only correct but absolutely up to date. Nos. x. and xi., Monte Rosa from the S.E. (Alagna) and from the E. (Macugnaga), from photographs by S. V. Sella, are quite works of art. The book is divided into three parts, which can be detached for carrying in the pocket—a most useful arrangement. The type is good, and there is an excellent index. Such omissions as we have been able to discover are of so trifling a character as to be practically of no consequence.

We offer our warmest congratulations to S. Vaccarone and his two colleagues, S. Martelli and S. Bobba, on the successful completion of their arduous labour. They deserve the hearty thanks of all mountaineers who visit the Western Alps on their most beautiful side—the side of 'la bella Italia.' It is very pleasant to us to welcome so exhaustive a guide to Italian Alps by Italians, a guide which their fellow-countrymen will regard with great and legitimate pride.

* *A. J.* xiv. pp. 335-8.

† *Ibid.* pp. 525-7.

Swiss Alpine Club Jahrbuch. 1896. (Bern.)

This volume (xxx.) appears with an abundance and richness of illustrations quite equal to any of its predecessors. Several of the illustrations are reproductions of water-colour drawings. These at first sight seem too vivid to be natural. The editor suggests that the effect will be improved if they are viewed from some distance. No doubt the effect is thereby softened. One of these, however, is exceptionally good, a view of the Presolana, from a drawing by our fellow member Mr. E. T. Compton. Of new ascents (or ascents by new routes) there is little that has not already appeared in the pages of the 'Alpine Journal,' and some of these date a long way back. MM. Wagnon and Beaumont, on September 20, 1895, ascended the Buet by a new route from Val Orsine to the ridge between the Buet and Mont Oreb. On September 30, 1895, M. Godefroy, from Motets, ascended a nameless peak (3,088 m. = 10,181 ft.) N.E. of Mont Tondu, which he proposes to call *Pointe des Lanchettes*. SS. Canzio, Vigna, and Mondini effected, on August 21, 1895, the ascent of Punta Fiorio (3,357 m. = 11,114 ft.) from the Alp de By, and returned by the Col de Berio (3,000 m. = 9,843 ft.). Signor Mondini, on August 23, effected a new descent from Mont Gélé by the S. face, and on August 27 alone effected a new pass (Colle di Livournea, 2,881 m. = 9,451 ft.) from Prarayé to Nus. They add a notice of the Val St. Barthélemy, N. of Nus, which they regard as a forgotten corner of the Alps. On October 27, 1894, SS. Leone and Sinigaglia ascended the Punta di Cian (3,121 m. = 10,240 ft.), in Val Tournanche, by the S. face. On August 5, 1895, MM. A. and E. Michelin and Pierre Puisseux ascended the Mittelgabelhorn (3,692 m. = 12,132 ft.) from the Trift Alp by the W. ridge. On August 17, 1895, SS. Massoni and de Pretto, with four guides, ascended the Nadelhorn (4,334 m. = 14,215 ft.) from the Dom hut. On July 22, 1893, Herr A. Bernoulli ascended the Klein Lohner from the E.; on July 17, 1894, the Birrenstock from the S., thus making this latter ascent earlier than that recorded in the 'Alpine Journal.*' A nameless peak (3,100 m. = 10,171 ft.) between the Hüfi Glacier and Val Rusein was ascended by Sir W. M. Conway on July 25, 1894, and christened *Piz Gurkha*; the same was ascended by Herr Hans Brunn on July 22, 1895, and christened *Heimstock*. The editor thinks that neither name is admissible. The period for exploring the Club district (Albula) has been extended to 1897. The second sheet of the map appears with this volume. Herr D. Stokar (Randen) continues his excursions with P. Mettier. On July 31, 1895, he ascended *Piz d'Aela* from the S.E., by a route so difficult that the guide said he would never go that way again. On August 9 he ascended *Piz Kesch* by the N.W. ridge. Where this abuts on the N. face the slopes are formidably steep, but the snow was good, and only once did the step which the guide made give way

* Vol. xvii. p. 600.

under Herr Stokar. However he was safely anchored with his axe. Herr Wilhelm Paulcke (Davos) contributes an account of two somewhat adventurous excursions. On August 15, 1893, from the Silvretta Club hut, he crossed the Gross Litzner alone from W. to E. From the saddle between the Gross Litzner and Gross Seehorn he traversed the S. face to the Vorgipfel, and returned to the hut. On August 11, 1895, along with a friend, Herr Branger, he reached the Aela hut at 8 p.m., disturbing much the Rev. W. A. B. Coolidge and his guide, young Christian Almer, who had retired to rest early. On August 12 they started at 5.10 a.m. for the Tinzenhorn by the N. face. They reached the Fuorcla da Cravaratschas at 7.50. They then had to attack the steep face. At 8.50 a difficult rock passage forced him to get on his friend's shoulders to gain a hold. A traverse brought them to the great gully which runs from summit to base of the mountain. On this side of the gully ascent was impossible. The gully was crossed with difficulty, and, after traversing a narrow band, he again mounted on Herr Branger's shoulders; but this time he failed to get up, and with extreme difficulty succeeded in alighting again on the same uncertain resting-place. An attempt a little further on was successful. They reached the upper snowfields; the snow was in good order, and the top was reached without further difficulty. Herr E. Imhof contributes another chapter on the lower summits of the district. In three days, August 16, 17, and 19, 1895, he ascended eight peaks, none, however, exceeding 3,000 m. (9,843 ft.). Only on one occasion did he meet with any difficulty in crossing a projecting ridge on the Älplihorn.

Herr A. v. Rydzewsky (Bern) describes the first ascent (in 1893) of the Ago di Sciora (3,201 m. = 10,508 ft.). This sharp rocky point lies to the N. of the Pizzo di Sciora, in the Albigna glen. He was accompanied by the well-known Courmayeur guide E. Rey, and by Christian Klucker. The Ago is separated from the Pizzo di Sciora by a rock-cleft, from which a steep couloir descends to the glacier. Failing to ascend by this they crossed the face of the mountain N. and N.W. to the col on the N. side. This was reached at 10 a.m., in 7½ hrs. from the shepherd's hut in the Albigna glen. The 140 m. (460 ft.) which separated them from the summit were passed not without difficulty, and the top was reached at 11.15. The top was left at 12 noon, and they returned by the same route to the hut at 6 p.m.

Out of the special district MM. Jeanneret-Perret, Julien Gallet, and Rieckel, with two guides and three porters from Ried (all of them but one named Kalbermatten), explored part of the Bietschhorn district. On July 6, 1895, they made a new ascent of the Breitlauhorn (3,668 m. = 12,058 ft.) from the S.; on July 7, a new passage (Baltschieder Lücke) from the Inner Baltschieder Firn to the Gredetsch Glacier, and thence over the Gredetsch Joch to the Beich Firn, the Aletsch Club hut, and the Belalp. Then, on July 9, from a bivouac at Jägisand, 3 hrs. from Raron, they ascended the Krütighorn (S. of Bietschhorn).

Herr Hans Brun (Uto), on September 19, 1895, ascended the Rosenhorn (3,691 m. = 12,110 ft.) by the N.E. ridge. Starting from the Dossen hut at 6.25, after a difficult passage of the bergschrund the top was reached at 2.10 p.m. In the descent they were benighted and had to bivouac on a rock ledge, a rather unpleasant experience so late in the year. Herr Karl Knecht (Bern), after the opening of the Gauli Club hut on July 8, 1895, along with two friends, the next day made the first ascent of the E. peak of the Hinter Trifhorn and descended to the Pavillon Dolfuss, the expedition occupying 16 hrs. Dr. A. Zublin (Uto) describes a number of ascents about All' Acqua, the chief of which were the ascents of Pizzo Gallina and Piz Pesciora. He endeavours to settle the exact position of the Marchhorn, and complains that the Siegfried map in this part is very deficient. Dr. Jörger (Piz Sol) describes a number of tours in the Valser Thal (Vorder Rhein), but there is nothing new. In the ascent of Piz Jut from the Lampertsch Alp they were much annoyed by the persistent attention of a flock of sheep, from which they were only delivered by the excellent barking of the guide. Herr Ludwig Purtscheller (S. Gallen), with his faithful companion Dr. Blodig, ascended nearly all the summits of the Bergamasque Alps. The chief tour was the traverse, on July 22, 1895, of three of the highest, Pizzo del Diavolo (2,915 m. = 9,568 ft.), Pizzo Redorta (3,037 m. = 9,964 ft.), and Pizzo di Scais (3,040 m. = 9,974 ft.), in which they met and overcame various difficulties. Herr F. W. Sprecher (Uto) describes his wanderings in the Taminathal. He points out that the name Calfeisen- or Calfeusen- (not Calfeuser-) Thal applies only to the part above Vättis, and recounts several curious legends current in the valley. Dr. August Walker (Weissenstein) spent twelve days in the Dolomites in June, 1895. He made no new ascents, but several first ascents of the season. On the Langkofel (June 27) the snow was so good that Luigi Bernard said he had never known the mountain so easy.

Herr G. v. der Gabelenz (Bern), in a tour in the Roman Apennines, on June 15, 1893, ascended the Corno Grande (2,931 m. = 9,616 ft.) from the Rifugio (2,200 m. = 7,218 ft.) in 2 hrs. 40 min., not by the usual route, but by a steep couloir in the N.W. face.

Dr. F. A. Forel (Morges) and Dr. L. de Pasquier (Neuchâtel) contribute a report (No. 16) on the glacier movements. They observe that though the beginning of the advance varies in the different glaciers they reach their maximum nearly at the same time, and they all begin to retreat at nearly the same time. The two periods of retreat in this century began in 1855 and 1893.

Herr A. Bosshard (Winterthur) has a short article on the Zürich Oberland in illustration of the panorama attached to this volume. This is taken from the Hörnli (1,200 m. = 3,937 ft.), a summit E. of the Bauma station on the Rütli-Winterthur railway.

Dr. R. Zeller (Bern) describes the different minerals found in the Binnenthal. There are two memorial notices, one by Dr. Carl Schmidt (Bern) on Herr Ludwig Rutimeyer, who died November 25, 1895. Though no Alpinist in the modern sense he was one of the

most active explorers of the Swiss Alps, and one of the most zealous founders of the S.A.C. The other is by Herr L. Held (Bern) on the cartographer Rudolf Leuzinger, who died on January 11, 1896. He was a pupil of Ziegler and afterwards a fellow worker. He had a wonderful skill in representing the natural features of hilly ground. He executed wholly or in part no less than 118 sheets of the Siegfried Atlas and about 200 other maps.

Pfarrer Gottfried Strasser (Oberland) gives an account of the progress of guides' insurance between 1881 and 1895. In the beginning the conditions imposed by the Zürich office were so stringent that many guides refused to insure. Formerly married guides were favoured above the unmarried; no compensation was allowed for cases of frostbite, and no compensation given if a cure was effected in thirty days. Now these and other grievances have been remedied, and the guides, especially those of the Bernese Oberland, come forward more readily. The premiums paid by the guides (the S.A.C. pays the rest) are very moderate—2 francs per annum for 1,000 francs, and 20 francs for 4,000 francs. The office in the above period has paid 82,000 francs (1,800*l.*) in compensation of injury or death by accident.

There is an interesting reprint describing a tour made by Herr Stettler and his party from the Urbachthal over the Gauli Pass to the Lauteraar Glacier in 1795. On August 10, starting at 3 A.M., after a difficult passage of the bergschrund they reached the ridge at 11, and the Grimsel at 8 P.M. This was supplied through the kindness of the Rev. W. A. B. Coolidge. This gentleman describes his excursions on the E. end of the Brigelser Hörner, which resulted in the discovery that Piz Tumbif has *two* summits, and not *one*, as hitherto believed.

Herr O. Stolberg describes a visit to the top of the Säntis on December 31, 1895. On the descent the next day they met two young porters carrying supplies to the house. These two perished in an avalanche on February 3 following, and four weeks later were found under nearly 9 yards of avalanche snow.

At the end of 1895 the Club numbered 4,869 members. The Club huts number 47, of which a full account is given in an annexed pamphlet. In the folding case are panoramas from Piz Ot, the Rosenhorn, and the Hörnli (Zürich), and the second sheet of the map of the special district (Oberengadin).

Zeitschrift of the German and Austrian Alpine Club (1896. Graz).

This volume (xxvii.) is full of interesting matter and richly illustrated. Of the fifty-six engravings in the book no less than twenty-six are from drawings by Mr. E. T. Compton. Several of the articles are monographs of the district in which the expeditions are made. The history of each mountain is told, and the first ascents by the various new routes mentioned. Herr E. Richter describes a journey through Norway, whose mountain scenery he asserts to be the wildest in all Europe. The difficulties are of a peculiar nature even in the plain; *e.g.* because of a broken bridge

the party went five hours along the bank without finding any means of crossing. The glaciers, again, are sometimes so destitute of marked features that a guide missed the way, and converted a walk of two hours into one of seven. He praises the inns and the food, but finds the roads often indifferent.

Herr Jean Habel made excursions in 1894 and 1895 amongst the mountains near Aconçagua. This range is easily reached by railway to Mendoza, and thence by a mountain (partly cog-wheel) railway. The last station is Punta de las Vacas, 2,460 m. (8,071 ft.) above the sea. Thence the Uspallata Passes (3,810 m. and 3,970 m. = 12,500 ft. and 13,025 ft.) are reached by post (4 hrs.) and on horseback (1 hr.). Leaving Mendoza at 6 A.M., Valparaiso is reached at 10 P.M. The journey across the continent from sea to sea took 72 hrs. By this time a driving-road is completed over the E. pass. Herr Hubel's chief explorations were in the valleys of Bodegas, Vacas, and Horcones. In the latter a camp was formed at 3,500 m. (11,488 ft.), from which on one occasion he rode to 4,125 m. (13,540 ft.), and on another reached a height of 5,400 m. (17,717 ft.) on the Cuerno de los Horcones (Gabelhorn). He describes the sensation arising from the rarefied air as that not of weariness, but of some obstacle which at each step had to be pushed out of the way. Professor Frid. Ratzel writes on the Alps as regarded historically, and Dr. Joseph Pommer on the songs current in various Alpine districts. The latter paper contains many amusing anecdotes, but both the articles are long enough to require a separate notice. Herr Karl Wolf describes the peasant customs in the *Burggrafen-Amt* (Meran). This seems to be a *résumé* of his work on this subject published some years ago. Herr Gustav Euringer describes a number of expeditions in the Mont Blanc district in the years 1889, 1890, and 1893, including most of the difficult peaks. On August 30, 1890, in the ascent of the Aiguille du Géant with the guides Payot and Gaspoz, he was much hindered by *Bergkrankheit*. On the same day Herr Ludwig Purtscheller made the ascent alone. This latter gentleman, with Dr. Blodig, made numerous ascents in the Maurienne and Tarentaise districts. The complete passage from the central to the western peak of the Levanna on August 9 is new. On several occasions three peaks were ascended in the same day. After traversing the Tsanteleina (3,606 m. = 11,833 ft.), and the Pointe de la Traversière (3,841 m. = 10,966 ft.) they determined to ascend the Grande Sassièrè (3,756 m. = 11,667 ft.). The last part of the passage of the 'Grat' presented great difficulties, and resembled very nearly that of Dr. Guido Lammer on the Gross Venediger ('Zeitschrift,' 1893). On August 17 they ascended the Dôme de la Sache and Mont Pourri by the route followed by the Rev. W. A. B. Coolidge in 1891. The ascent lasted from 3.15 to 10.35 A.M. Herr Joseph Enzensperger describes the group of the Hofats in Algau. This mountain lies S.E. of Oberstdorf, and has long been notorious to mountaineers, from the steepness of its slopes, particularly the grass slopes. For these, it is said, quite a peculiar style of climbing is required. There is often more danger than difficulty,

but a steady head is absolutely necessary. The illustration of the descent into the 'Rothen Loch' shows this plainly. There are four principal summits, which, however, only differ in height by a couple of yards. The writer describes the different routes by which each of these is ascended, and gives the names of the first tourists who reached them. The east peak is reached by no less than five different routes. Herr Gustav Becker describes the mountains in the ridge which divides the Gurgl Thal from the Pfelders Thal, many of which he ascended. The most exciting is the passage from the southern to the northern peak of the Hochwilde (8,480 m. = 11,417 ft.), against which for some time the guides Jos. Klotz and Jos. Scheiber protested. The chief difficulty in this was a rock-climb like the 'Mauvais Pas' on the southern Aiguille d'Arves, which Herr Paulcke successfully overcame alone and then helped the others up. This traverse is new. Herr Oscar Schuster describes the Langkofel group. The Langkofel itself, though not difficult when the snow is in a very good condition, is dangerous from falling stones, particularly in the Upper Rinne. A rock route which avoids this was found on August 18, 1892. The Grödner Thal guides usually follow the old way up and the new one down. On the Grohmann Spitze a party, of whom Mr. Norman Neruda was one, had much difficulty in descending the Johanneskamin when coated with ice, which the boldest of them regarded with a shudder.

The editor, Herr Heinrich Hess, gives an account of the Steiner (or Sulzbacher) Alps. These lie on the borders of Styria and Carinthia. The two highest summits are the Grintovec (8,395 ft.) and the Ojstrica (7,710 ft.). The group is accessible from Cilli by railway to S. Peter and Schönstein, or from Laibach to Stein. The mountains, though not high, are often rugged and of bizarre forms, and the paths are sometimes extremely difficult, even though marked, and require a steady head (witness the illustration of the descent into the Ravni). It is a great advantage to the tourist that the region is not flooded by the tourist stream, and is therefore comparatively cheap.

Den Norske Turistforenings Aarvog for 1896.

The well-deserved reputation which was gained many years ago by the Norsk Tourist Club by the publication of their Year Book is well sustained in their last issue. The papers are worthy of the book, and the whole forms a pleasing contrast to most of the books and papers about Norway which spring up in the early summer in England with as great regularity as do the weeds in a garden. Though the illustrations are good there have been better some other years.

There are some excellent sporting mountaineering papers, notably one by Herr K. Bing on his ascent of the Brixdals-bræ, a very bold and hazardous adventure, fortunately brought to a successful issue, though for the space of nine hours Bing and his companion were battling with the séracs.

English readers will naturally turn at once to the admirable

paper by Mr. C. W. Patchell, who has condensed into ten pages a capital description of many notable adventures. This gentleman has, as the result of many successful campaigns, gained an intimate knowledge of the wild Norsk *fjelde*, with which few men can vie. There is another English paper which treats of the Gjeunalund district, also one in Norsk on the same subject.

The reader is introduced to much comparatively new ground, such as the weird recesses of Lyngen fjord, the mountain-tops of Nordmör, and the wild *terrain* W. of Snehatten. Herr Carl Hall has, as usual, enriched the book with the addition of several short papers. Very many persons will be delighted to see that at last the Tourist Club have made the path from the valley of Olden towards the Olden skar, a most necessary connecting link for pedestrians.

Amongst the list of so-called first ascents made in 1895 is that of Kjölaastind, or Gluggentind. It is pretty certain that a 'first ascent' of this lovely peak has been made on three different occasions, viz. in 1876 by the present writer, who would not, however, take his oath upon it, as the mountain was enveloped in clouds when he was on it; next by two Norsk students in 1880, and lastly in 1895. Cannot some man make a fourth first ascent? This mountain is one of the most beautiful in Norway, and is the scene of many a wild legend.

W. C. S.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, February 2, at 8.30. Mr. H. Pasteur was in the chair in the unavoidable absence of the President and Vice-Presidents.

The following candidates were balloted for and elected members of the Club: Messrs. K. F. Kingdon, H. V. Reade, E. G. Tatham.

The CHAIRMAN stated that Dr. Albert Heim, of Zürich, had accepted the honorary membership which had been offered to him by the officers and committee of the Club.

The accounts for 1896 were then presented.

The CHAIRMAN considered that the Club might congratulate itself on the accounts being so satisfactory, especially with regard to the cost of the 'Alpine Journal.'

Mr. J. H. WICKS, the Treasurer for 1896, said that he had stated twelve months ago that the total deficiency of 558*l.* 2*s.* 10*d.* would probably be paid off in the course of three years, and it was a great satisfaction to find that in the past year it had been reduced to 285*l.* 15*s.* 10*d.* For the present year, 1897, it would be necessary to calculate on a smaller income from entrance fees to the extent of some 50*l.* to 60*l.*, as the number of new members was likely to be below the average, probably on account of the very unsatisfactory weather in the Alps last season, which prevented the usual number of candidates from qualifying. He explained that, owing to the fact that almost the whole of the Club's income