

geology, mountaineering, &c., of the district is given, and the bibliography of 14 pages, though imperfect, is of use. The illustrations derived from Mr. E. T. Compton's sketches in the 'Zeitsch. des D. u. Oe.,' 1897, and from original photographs, are excellent. In a separate volume from the text are two maps of the district, both taken from the map of the 'Istit. Geog. Milit.,' corrected and added to, one being as illegible as the Government map, but the other (scale  $\frac{1}{300,000}$ ) having the names clearly printed on a pale background of mountains. The price of the two volumes in a case is L. 6.50.

### PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING was held in the Hall of the Club on Tuesday evening, May 1, at 8.30, the Right Hon. James Bryce, *President*, in the chair.

Messrs. W. H. Gover, H. J. Mackinder, E. S. Tattersall, E. L. Vail, and W. J. Whelpdale were balloted for and elected members of the Club.

The PRESIDENT stated that Dr. Moreno, Director of the Museum of La Plata, had presented four photographs of the Southern Andes to the Club.

On the motion of the PRESIDENT a hearty vote of thanks was accorded to Mr. Sydney Spencer for the trouble he had taken in the arrangement of the exhibition of photographs.

Mr. H. E. M. STUTFIELD read a paper on 'Mountain Sport,' which was illustrated by lantern slides.

Mr. WINTRINGHAM STABLE said he had had some experience in the Pyrenees. There the bouquetin, though very rare, was found at a much lower level than the chamois, in the forests of the deep valleys. He had found it very difficult for the first year or two to get accustomed to climb unroped, as one must do on a shooting expedition; and also to remember that a bullet fired when the muzzle of the rifle was either resting on or too close to a rock would be deflected, so that at a near distance, to be successful, one had to aim below the quarry. In France there was no difficulty about obtaining a shooting licence, but on the Spanish side there was delay and trouble in obtaining a licence, and without one there was apt to be interference by the authorities.

Mr. YELD had seen bouquetin perform marvellous jumping and climbing feats. It had been said that

The chamois is the beast to hunt,  
He's fleetier than the wind;  
And when the chamois is in front  
The hunter is behind.

But at Cogne the position is often reversed when the Royal party return from the chase. He had in 1899 seen seven chamois on the

glacier between the Olmenhorn and the second peak of the Dreieckhörner.

Mr. HASKETT-SMITH had never seen bouquetin in the Pyrenees except in the forests, but further south in Spain they occurred much higher up the mountains. With regard to the objections the hunters usually made to going on snow, it was to be remembered that solitary climbing was unsafe on snow, and that boots wetted by snow made walking on rocks unsafe.

Mr. BAILLIE-GROHMAN had been much interested in the paper, and thanked Mr. Stutfield for his kind reference to himself.

Sir GEORGE ROBERTSON, who was present as a guest, was surprised to hear that in northern Spain the ibex was found in the low valleys, for it always lived in the Himalayas at a great altitude. In Kafristan the ibex was not found, but flocks of goats were there hunted with the help of dogs, who drove the selected goat into a corner, so that the hunter might fire at him from about twenty yards away. That was not so easy as might appear, for the goat was very ready to take alarm at the sight of man and escape through the dogs. In Chitral he had hunted ibex at 18,000 ft. on horses that were exceedingly sure-footed, so that they could safely reach places where he had on dismounting to climb on hands and knees.

Sir MARTIN CONWAY had been much interested in the slides taken from engravings. At one time he had begun making a collection of engravings, but those he had got together were unfortunately burned. Some curious hunting incidents were to be noted in the background of pictures in such galleries as that at Munich, and in the pictures in seventeenth-century German books. The old method of chamois-hunting appeared to be that the huntsman had the chamois chased to the summit of one peak, while he climbed another from which he shot his arrow. He had himself never shot a chamois, but had once seen an ice avalanche kill four bouquetin. In South America there were no wild goats, but a deer somewhat resembling the llama; it could not climb, and was therefore easily killed.

Dr. CLAUDE WILSON had always wondered how hunters could know where to look for chamois. He had never seen one in the Breuil district, where Mr. Stutfield had found them.

Mr. A. BUTLER said that in the Tyrol one saw chamois every day.

Mr. STALLARD wondered if any observations had been made on the temperature of the chamois. Hunters often said it was very high, but he had found it to be about 101° F. This, however, was in animals that had been running for their lives and had been either wounded or killed.

Rev. G. BROKE also spoke.

The PRESIDENT had seen very few chamois in the Tyrol, but once in the Engadine he had seen a large herd. In the Tatra there were a great number. He would recommend members to read Mr. Buxton's 'Short Stalks,' which was a most interesting book. Alpine climbing probably began in hunting. In the opening scene

of Schiller's 'William Tell' songs were sung by various people representing the different elements of Alpine life, and among them a hunter who had come down from the rocks above. If the play had been written at the present day a member of the Alpine Club would probably have taken the hunter's place. There was no end to the variety of ways in which the mountains might be viewed, and sport often showed new aspects of their topography. Mr. Stutfield had laid before them one of the aspects of the mountain's infinite variety.

Mr. STUTFIELD said that he had taken his information at second hand with reference to the height at which bouquetin were found, as he had seen few himself. With regard to finding chamois, 'spying' was a most difficult art, and required years of training to acquire.

A hearty vote of thanks to Mr. Stutfield concluded the proceedings.

A GENERAL MEETING was held in the Hall of the Club on Tuesday evening, June 12, the Right Hon. James Bryce, *President*, in the chair.

Messrs. F. W. Bourdillon and J. M. A. Thomson were balloted for and elected members of the Club.

The PRESIDENT announced that the monks of the Hospice of the Great St. Bernard proposed to erect a statue to their founder on the pass, and that the Prior had written asking the Club to subscribe; but, as this was not within the province of the Committee, they had replied that though unable officially to subscribe they would be willing to receive and forward subscriptions from individual members of the Club.

Mr. DOUGLAS W. FRESHFIELD read a paper entitled 'Round Kanchinjunga,' which was illustrated by lantern slides.

Sir MARTIN CONWAY thought that the mountains appeared to be entirely similar to those in the neighbourhood of K<sup>2</sup>. Siniolchum appeared very much to resemble a mountain that he had seen by the side of the Orafu Glacier. On the other hand, he noticed marked differences in the vegetation of the lower levels, and flowers appeared abundant at high altitudes. In the Karakoram flowers were scarce above 15,000 ft., and only a few, such as some varieties of the potentilla and saxifrage, existed at 18,000 ft. He was inclined, therefore, to think that there must be a considerable difference in the humidity of the atmosphere, as might be expected in a district that was on the edge of the mountain region, and which therefore caught the warm southern winds as they first came across the plains. The greater humidity might also produce much effect on man. Mr. Freshfield said that at 19,000 ft. they had walked up cols with ease. In the Karakorams he had had a caravan as large as Mr. Freshfield's—about fifty men of different races and types, Major Bruce and Zurbriggen coolies and Goorkhas—and at 16,000 ft. they were all powerfully affected by the diminished pressure, and above that height there was no question but that their natural

forces were much abated. There must, therefore, when one caravan was so much affected and the other far less so, be some difference in the quality of the atmosphere; perhaps that quality was the greater dampness. The district seemed to offer great attractions from its accessibility, which he trusted would lead other parties to go to it.

Dr. COLLIE had not found much bad effect from being at 18,000 ft. The coolies of their party had several times crossed the Mazeno Pass at that height, with heavy loads, without being seriously affected. The first time that he had crossed he had been himself attacked by mountain sickness, but not subsequently. His companions, Messrs. Mummery and Hastings, had gone to a height of 21,000 ft., and though they had climbed continuously 8,000 ft., starting at twelve midnight and ascending till five the next afternoon, they were unaffected by mountain sickness. They were, however, affected by lassitude at about 20,000 ft. This under the circumstances was not to be wondered at. If the food was good and the travellers in good health and condition no ill effects were felt up to 20,000 ft. The north-west side of Kanchinjinga reminded him of the north-west side of Nanga Parbat. Of all snow peaks Siniolchum was probably the most beautiful snow peak in the world.

Mr. GARWOOD said that at 16,000 ft. on the Zemu Glacier during the great storm he was probably the member of the party who suffered most, while afterwards when crossing the high pass at 21,500 ft. he felt much less inconvenience from the rarefied air. He would like to point out that on the former occasion the temperature was high and the atmosphere was saturated with humidity, while on the Nepal side of the watershed both the temperature and the relative humidity were exceedingly low.

He was sorry that at that late hour he could not respond to the President's kind invitation to describe the geology of the region visited, which he hoped to do fully in another place; he would like, however, to call the attention of the members to the collections exhibited, and to point out that the Kanchinjinga range was composed of a foliated granite intruded into metamorphic schists and intersected in its turn by veins of pegmatite; at either end of the range—namely, at Pandim and the Chortenima Pass—metamorphic limestones occurred, which in the northern exposure contained recognisable crinoid stems. The whole northern extremity of the range where it enters Thibet is apparently composed of sedimentary rocks, and to this fact is due the markedly different aspect of the scenery after crossing the Thè La Pass, the junction being roughly indicated by the valley of the Lungma Chu.

Among the insects shown he would like to call attention to the numerous imitative forms, as exemplified by the leaf-like moths and butterflies, the stick insect, and the bamboo beetles.

Mr. CHEETHAM's experience as to the effect of altitude agreed with Mr. Garwood's. His climbing in the Himalayas took place

some twenty years ago, and chiefly in the western part of the range.

The PRESIDENT thought that all members must be proud that so good a piece of exploration work had been carried out by one of themselves.

He proposed a vote of thanks to Mr. Freshfield for his most interesting paper, which was heartily accorded.