steps. Finally, the party returned safely to the ship, and found that the evening relief ship had arrived in McMurdo Sound. Mr. Armitage made a journey to the westward with a large party. After one or two failures he found a good route to the main ice cap over the surface of a glacier of great extent. The climbers gradually rose until they arrived on the inland plateau at a height of 8900 feet, and was thus the first to penetrate into the interior of Victoria Land. The expedition had hoped to accompany theMorning hogs to the westward, but on February 3, 1903, this was seen to be impossible, because of the condition of the ice. They expected the ice in the bay in which they lay to break up, but unfortunately it got so late that there was only one chance for the Morning hogs to get back, and that was to return. She got home with a good deal of difficulty, but the Discovery was forced to remain a second winter.

Captain Scott next made a sledging expedition in a westerly direction, reaching his first west point on November 30, 1903. The party had reached the top of a mountain range some 7000 feet above the sea-level when a blizzard came on and prevented further movement for six days. The party then set out westward, rising another 1500 feet, and for another week advanced over a huge plain that extended as far as the eye could reach. The temperature was forty degrees below zero, and the lips, nostrils, and ears were blistered by the incessant wind from the west. The rarefied air, too, had a great effect in reducing staying power. On this expedition they reached a very interesting spot—that at which the companion of the Terra Nova was sighted. They had reached for the first time the line of no variation lying between the South Pole and the south magnetic pole.

By the middle of December, 1903, all the sledging parties were ordered to be back, in order that an attempt might be made to free the Discovery from the ice by sawing out a channel. The attempt to clear a channel had to be abandoned, but on January 15 the Morning hogs and the Terra Nova were sighted. They brought word that unless the Discovery could be freed it must be abandoned, and to obviate this hazard of blasting operations were undertaken. But by the end of January the ice began to break up on its own accord, and by the middle of February there was a clear channel for the Discovery, which was then free to start on its return voyage.

MOUNT EVEREST: THE STORY OF A LONG CONTROVERSY

The highest mountain in the world is situated in a country from which Europeans have with few exceptions been jealously excluded; and the recent visit to the capital of Nepal of an experienced British surveyor, equipped with full permission from them, is an event of no small interest in the annals of Himalayan geography. It is clear from Captain Wood's report that this event has been brought about by the personal intervention of Lord Curzon.

Surveys have penetrated the Himalayas east and west of Nepal into Sikkim and Kumaon, and have from these points of view been enabled to observe a few of the Nepalese peaks; but from flanking stations the ranges of mountains are seen "end on," and the nearer peaks shut out the more distant from view. The knowledge that we possess of the heights and positions of the peaks of the Nepalese Himalayas has consequently been obtained from observations taken with theodolites at stations situated in the plains of Bengal and Oudh.

From maps of small areas we are able to estimate that there are 12,000 snow-peaks in the Nepalese region, including Kashmir and Bhutan, probably exceeding 40,000, and that of these more than 10,000 are always clothed with snow. Such estimates, rough as they are, suffice to show that the pointed south end of the Indian Survey when it first undertook the determination of the positions and heights of the peaks of the Himalayas was not a simple one. It is difficult now to discover how many of the 10,000 snow-peaks known to the natives of India by name before the British commenced their survey. The number so named was certainly small, and possibly less than fifty. We now know only two highest mountains of all without a name but many of the most conspicuous peaks throughout the whole length of the Himalayas were nameless. The few peaks that serve as landmarks to travellers on their way have been numbered, perhaps, the few that mark the sources of sacred rivers and indicate to weary pilgrims on distant plains the positions of the shrines that are their goals have for ages been recognized by names.

It is questionable whether some of the Hindu names now attaching to peaks were not given in the first instance by British surveyors; in the earlier days of the survey names were accepted from villagers more readily, perhaps, than would now be done. Even the celebrated name of Dhaulagiri, as attaching to a particular peak, is not altogether free from suspicion. The story of the controversy over Mount Everest shows how easy it is to find native names that have no existence in fact, and how hard it is to identify the precise peak even when a native name is current.

When 10,000 snow-peaks have to be fixed, and when but 50 of these have names, some system of classification has to be devised. The case is analogous to that of the stars; a few of the brighter stars have names of their own, the remainder are designated by letters or numbers. The snow-peaks of the Himalayas are classified by areas, and are designated by Roman numerals or by letters with numbers attached; thus Everest I, Everest II, and so forth. The official records as Peak XV, and the second highest is recorded as Peak K, both having been nameless at the time of their discovery.

The highest peak in the world is known in the official records as Peak XV, now better known as Mount Everest, is 29,028 feet, and that of K is 23,250 feet. Sixty years ago Dhaulagiri, in Nepal, was considered the highest mountain in the world; Dhaulagiri is 26,795 feet high, and the next in height by six Himalayan peaks; of these K is in Kasling, and the other five, Everest (29,002), Kangchenjunga I (28,140), Kangchenjunga II (27,503), Makalu (27,790), and Peak T (27,000) are in or near Nepal. The Discovery of Mount Everest. In 1848 trigonometrical surveyors commenced to build a line of survey stations along the plains of Uodh and Bengal from west to east, and to determine the positions of these stations in latitude and longitude by means of triangulations observed with large theodolites. Sir George Everest had intended originally to carry the series along the mountains, but abandoned his design in consequence of the refusal of the Nepalese Government to allow the operations to enter their territories. Consequently, after crossing the hills of Kumaon, the stations were brought down into the plains near Bareilly, from which point they were carried for 300 miles through the deadly tracks of the wild Himalayas.

At almost every station the snowy range of Nepal was visible, and the northern horizon appeared broken by numbers of peaks. Just as some stars appear brighter to the eye than others, so do some snow-peaks against the sky-line appear loftier than others. The superior magnitude of certain stars may be due either to their greater diameter or their lesser distance, and the superior elevation of certain peaks may be due either to their greater height or their lesser distance. The most refined observations with the most perfect of instruments, if taken from a single station only, will furnish no clue as to whether a mountain-peak is conspicuous on account of its magnitude or on account of its nearness.

As the surveyors moved across Bengal from west to east they witnessed changes in the apparent positions of the peaks; the analogy of the stars still held good, as owing to the great distances of the latter they appear to preserve their relative positions in the sky; but the case of mountain-peaks may be compared to what a traveller notices when he journeys on and through a forest of pines—the nearer tree-trunks continually appear to pass between his eye and the more distant ones. As the surveyor moves across the plains parallel to the mountains he sees

1 In order to appreciate the distance from which Mount Everest is visible, we have only to consider that its summit could be seen from Land's End to Edinburgh and from Kent to Connaught.


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of the latitude and longitude of the peak were obtained; if occasions.

Once or twice, and might not be identified.

Failed to satisfy all the tests, and had to be rejected.

Height of the peak was deduced; a separate value for the

tight of the peak was from each station the

calculated distance of the peak from each station the

true direction of every visible peak and the angular

elevation of every summit above the horizon were deter-
mained from every observing station.

The identification of the peaks as observed from different

stations was then effected as follows:

\[ \text{The observations were carefully projected on a map. and from each were drawn lines representing the directions of all peaks observed from it.} \]

When direction-lines from three or more stations met in one point, it was tentatively assumed that the same peak had been observed on the three or more occasions.

By trigonometrical formulae the distance of this assumed peak from each of the observing stations was then calculated, and from these distances independent values of the latitude and longitude of the peak were obtained; if the several values were accordant the identification was finally accepted.

Numerous peaks were found to have been observed only once or twice, and could not be identified; many others failed to satisfy all the tests, and had to be rejected.

About 1852 the chief computer of the office at Calcutta informed Sir Andrew Waugh that a peak designated XV had been found to be higher than any other hitherto measured in the world. This peak was discovered by the computers to have been observed from six different stations; on no occasion had the observer suspected that he was viewing through his telescope the highest point of the earth.

The following table shows the several values of height that were obtained for Mount Everest:

<table>
<thead>
<tr>
<th>Observing station</th>
<th>Height of peak from observing station</th>
<th>Date of observation</th>
<th>Observer</th>
<th>Instrument</th>
<th>No. of angles of elevation</th>
<th>Height above mean sea level</th>
<th>Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jald...</td>
<td>290 miles</td>
<td>Nov. 27, 1849</td>
<td></td>
<td></td>
<td>2</td>
<td>53 33'35'</td>
<td>2896'</td>
</tr>
<tr>
<td>Mirzapur</td>
<td>105 miles</td>
<td>Dec. 5, 1849</td>
<td></td>
<td></td>
<td>2</td>
<td>12 11'6'55'</td>
<td>2800'</td>
</tr>
<tr>
<td></td>
<td>102 miles</td>
<td>Dec. 6, 1849</td>
<td></td>
<td></td>
<td>2</td>
<td>12 9'31'</td>
<td>2800'</td>
</tr>
<tr>
<td></td>
<td>108 miles</td>
<td>Dec. 8, 1849</td>
<td></td>
<td></td>
<td>2</td>
<td>12 16'55'</td>
<td>2800'</td>
</tr>
</tbody>
</table>

Sir Andrew Waugh had always adhered to the rule of assigning to every geographical object its true local or native name; but here was a mountain, the highest in the world, without any local or native name that he was able to discover. He determined, therefore, to name the great snow-peak after Sir George Everest, his former chief, the celebrated Indian geodesist. The name of "Mount Everest" has since become a household word, and no objection to it has ever been raised by natives of the country.

The Devadhunga Controversy.—When Sir Andrew Waugh announced that the peak was to be named Everest, Mr. Hodgson, who was posted as a political officer in Nepal for many years, intimate to the Royal Geographical and Royal Asiatic Societies that Sir Andrew Waugh had been mistaken, and that the mountain had a local name, viz. Gaurisankar. Sir Roderick Murchison, the president of the Royal Geographical Society, approved Waugh's action, but the Royal Asiatic Society supported Hodgson and repudiated the name of Everest. Seeing that the Survey officers had been debarred from entering Nepal, Mr. Hodgson was amply justified in raising the question he did; but he had made no scientific measurements, and it is known now beyond dispute that he was mistaken in his identification of Everest. He apparently assumed that the great peak, which he saw standing in the direction of Everest, and which was so conspicuous from Katmandu, where he resided, was the highest peak in Nepal; but Nepal covers a large area, and Mount Everest is more than a hundred miles from Katmandu. Either Mr. Hodgson was unaware of the real distance of Mount Everest, or he failed to realise that even the highest mountain on earth will look small at so great a distance. It is probable that Mr. Hodgson never even saw Mount Everest; it is certain that if he did so he was unaware that he was looking at it.

All subsequent information goes to show that there is no peak in Nepal called Devadhunga. Mr. Hodgson's sincerity has never been doubted, and it is believed now that the name Devadhunga is a mythological term for the whole snowy range.

The Gaurisankar Controversy.—In 1854 three brothers, Hermann, Adolphe, and Robert de Schlagintweit, undertook a scientific mission to India and Central Asia at the instance of the King of Prussia, and with the concurrence of Lord Dalhousie and the court of directors. Their labours lasted until 1857, by which date they had succeeded in taking numerous astronomical, hysmometric, magnetic, and meteorological observations; they had also made geological, botanical, and zoological collections for the India House Museum and the Records of the Great Trigonometrical Survey of India.

In 1857 Hermann de Schlagintweit visited a hill in Nepal named Kaulia, near Katmandu, and from it took observations to the snow-peaks. He saw the mountain called Devadhunga by Hodgson, and he identified it as Mount Everest; he, however, repudiated Hodgson's name of Devadhunga, and certified that the local native name for the peak was Gaurisankar.

The continental geographers, accepting Schlagintweit's views, have continued to this day to call the highest mountain in the world Gaurisankar: the Indian Survey, however, were unable to reconcile Schlagintweit's results with their own, and have declined to follow him.

The diagram in Fig. 1 illustrates the tour of Hermann de Schlagintweit, who visited the two stations of Kaulia and Falut, which are 175 miles apart. From Kaulia he saw a high peak to the north-east which the natives called Gaurisankar, and which he identified as Everest. From Falut he saw a high peak to the north-west, which he also identified as Everest.

There is no doubt now that Schlagintweit was misled in his identification of Mount Everest. It is the common misfortune of all pioneers that posterity chiefly concerns itself with their mistakes.
different peaks thirty-six miles apart, and that Everest was barely visible from there, being almost shut out from view, and entirely surpassed in appearance by Makalu (height 27,790 feet), a lower though nearer peak; it was Makalu that Schlagintweit mistook for Everest, and it was Makalu that he drew as Everest, both in his panorama of the snows from Falut, and in his picture, which is preserved at the India Office.

In 1893 Captain Wood visited Kaulia by order of Lord Curzon; he found that Gaurisankar and Everest were

Schlagintweit's tour in Nepal

<table>
<thead>
<tr>
<th>Peaks</th>
<th>Distance from Mount Everest in miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everest</td>
<td>109</td>
</tr>
<tr>
<td>Gaurisankar</td>
<td>85</td>
</tr>
<tr>
<td>Makalu</td>
<td>85</td>
</tr>
<tr>
<td>Falut</td>
<td>50</td>
</tr>
<tr>
<td>Kaulia</td>
<td>36</td>
</tr>
</tbody>
</table>

General Walker showed by calculations that if Everest had been really visible it would have been seen by Schlagintweit's drawing of Gaurisankar.

FIG. 1.

FIG. 2.
When Captain Wood visited Kaulia in 1903 he was unable to discover the place from which Schlagintweit had made his drawing; he selected another spot, and made a careful drawing to scale of the snowy and nearer ranges. In Fig. 3 is given a copy of his sketch of Gaurisankar.

On the advice of the Prime Minister of Nepal, Captain Wood recorded on his drawing against the lower peak of the Gaurisankar double the name Gauri, and against its loftier companion the name Gauri.

If we compare Wood's drawing with Schlagintweit's, we see that the nearer range B appears higher in Schlagintweit's picture than in Wood's. This same peculiarity is visible throughout the panoramas of the two observers; the near ranges appear in Schlagintweit's drawing higher always with regard to the distant ranges than they do in Wood's. The inference is that Schlagintweit drew his panorama from a considerably lower point than Wood did; this may account for the fact that Schlagintweit shows no signs of Everest.

Again, in Schlagintweit's drawing the near range K cuts off laterally more of the snowy range than it does in Wood's, and obscures the shoulder of Gaurisankar just at the point where Everest should have been visible.

In Wood's drawing Mount Everest appears as a low peak to the east where General Walker calculated that it would appear.

The omission of Everest from Schlagintweit's panorama led General Walker to believe that it was not visible from there.

Schlagintweit's station at Kaulia. Whether it was visible or not was, I am sure, in General Walker's opinion not a question of moment.

3. Now that Gaurisankar and Everest have been proved to be different peaks, a suggestion has been put forward that they belong after all to the same "group" of peaks, and that according to Alpine usage and precedent there is nothing to prevent the name Gaurisankar being applied to the loftiest peak of the group.

It is clear from this passage that the author is desirous of getting rid of the name of Everest, but it is not clear how his object is to be attained, whether by transferring the name Gaurisankar from the one peak to the other, or by giving the name Gaurisankar to both peaks. To displace the native name from the mountain which the natives know, and to attach it to a remote peak which they do not know, would be a course that would not commend itself to anyone interested in the preservation of local geographical names. To give the same name to both peaks would be to introduce a needless confusion.

Gaurisankar and Mount Everest, we are here told, belong to the same group; but what is a group? Controversialists give to the term different meanings to suit their own requirements. It is true that in some instances the same name has been given to different Himalayan peaks: Kangchenjunga I and Kangchenjunga II are the official designations of the two peaks which cap the lofty mass of Kangchenjunga; the eight peaks of a cluster in Kumaon are named Badrinath I, Badrinath II, &c.; but these peaks are slight prominences crowning the snow-clad pyramid of Badrinath, like turrets on a castle. Everest and Gaurisankar are separated by a wide interval and a deep valley, and are not spires of a single peak.

The extent to which we are justified in giving the same name to different peaks is, however, not altogether a question of intervening distance and depth; geographical significance has also to be considered. The peaks of the Badrinath cluster have a common, but no individual, significance; they are notable only as the several pinnacles of the sacred pile of Badrinath, and can therefore be classified without disadvantage under one general appellation. But the case of Gaurisankar and Everest is different: the former is remarkable in Nepal for the pre-eminence of its grandeur; the latter, screened from the gaze of man, is known only as the highest point of the earth. Would it not, then, be a mistake to include under one name two mountains the claims of which to celebrity are so different?

Before we blindly follow Alpine precedents in the settlement of Himalayan problems, we must consider well whether the conditions are identical. "It is no exaggeration to say," writes a great Himalayan authority, that almost the entire range of the Himalayas would have to be found among the higher mountains, into which the whole Alps might be cast, without producing any result that would be discernible at a distance of ten or fifteen miles.

"The Discovery of a New Tibet Name."—Colonel Waddell's book, Among the Himalayas, gives a good description of the Nepalese mountains with many interesting profiles; the author's investigations have enabled him to authenticate a Tibetan name for a high peak which he believes to be Mount Everest. This name is Jamokangkar, sometimes spelt Chamokangkar.

Now let us suppose for one moment that it will be proved by future evidence—not at present forthcoming—that the mountain called Jamokangkar by Tibetans is identical with our Mount Everest. What then? Will it be incumbent upon us to abandon the name of Everest and to adopt that of Jamokangkar? I think not.

When the Gaurisankar controversy opened, the name of Everest was an interloper upon the map of Asia; but its trespass has long since been condoned. Time and usage have secured for it a right not less sacred than the right of origin; for what, after all, is the right of origin but that conferred by time and usage? To displace now this name from its lofty position in geography would seem to make of us an outrage.

It will, I think, be lamentable if former advocates of the name Gaurisankar, seeing that their cause is doomed, continue the struggle under this new flag of Jamokangkar. Alas, to our regret, has Mr. Freshfield, the present defender of the claims of Gaurisankar, declared in favour of the Tibetan name.

The old dispute has been settled; the names Gaurisankar and Everest have been proved to belong to different peaks; and it is to be hoped that Continental geographers, who have hitherto attached the name of Gaurisankar to the famous peak that we call Everest, will, in the interests of scientific harmony, now accept the name that has always been accepted by India. But before we can look for Continental acquiescence we must endeavour to show agreement at home. Few Continental geographers see the official reports of the Indian Government; the majority draw their conclusions from articles in our geographical Press.

Jain, March, 1903. Mr. Freshfield, the late secretary of the Royal Geographical Society, wrote in the Geographical Journal as follows:—"The reason, for which the surveyors argued so strenuously forty-five years ago, that the 29,002 feet peak cannot be the Gaurisankar of Nepal was, of course, that their chief's proceeding in giving the mountain an English name was excused, or justified, at the time by the assertion that it had no local or native name." The surveyors whose motives Mr. Freshfield has impugned were formed into a committee forty-five years ago.

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1 See the article on Himalaya by General Sir R. Strachey, R.E., in Encyclopedia Brit., 9th edition.
2 Published 1896.

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ago to consider the question whether the peak which Mr. Hodgson called Devadhunga was identical with the peak which Sir A. Waugh called Mount Everest; from the geographical evidence available they concluded that the two peaks were not identical, and their conclusion has been found correct.1 In those early days there had arisen no such subtle questions as whether Mount Everest formed part of a certain range, or whether it belonged to a certain group of peaks, or whether it was just visible to those who knew where to search for it. To the clear minds of our predecessors, to Hodgson and Waugh and Schlagintweit and Walker, there was but one question at issue, namely, the identity of Hodgson's and Schlagintweit's peak with the Mount Everest of the Survey.

This question has now been answered, and after fifty years of discussion the Hindu and Nepalese names have been proved to be inapplicable; let us, then, close a controversy that has fulfilled its purpose, and let us suffer the English name to rest on our maps in peace.

S. G. Burrard.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—The Vice-Chancellor has appointed Prof. Ray Lankester, hon. fellow of Exeter College, to be Romanes lecturer for 1905.

Sir John Burdon Sanderson, Bart., hon. fellow of Magdalen College, late regius professor of medicine, has been constituted a perpetual delegate of the university museum.

Mr. Walter J. Barton, scholar of New College, has been elected to the geographical scholarship for 1904–5.

The executive committee of the Oxford division of the British Medical Association has had the electric light permanently installed in the Pitt-Rivers Museum as a mark of their appreciation of the generosity of the university in allowing the association to make use of their various buildings and of the help the university gave them in other ways during the meeting of the association in Oxford in July last. The cordial thanks of the university have been conveyed to the Oxford division of the association for their most acceptable gift, and the curators of the university chest have been empowered to erect a suitable record of the occasion in the Pitt-Rivers Museum.

CAMBRIDGE.—Mr. J. C. Willis, of Gonville and Caius College, director of the botanic garden at Peradeniya, Ceylon, has been approved for the degree of doctor of science.

Prof. G. H. Darwin, F.R.S., and Mr. A. E. Shipley, F.R.S., have been elected members of the council of the Senate.

Mr. A. Young, tenth wrangler in 1805, lecturer in mathematics at Selwyn College, has been elected a fellow of Clare College.

Mr. A. P. Gregory, demonstrator of botany, and Mr. E. Cunningham, senior wrangler 1802, have been elected fellows of St. John's College.

Prof. Marshall Ward, F.R.S., has been elected president, and Prof. Thomson, F.R.S., Prof. Lavington, F.R.S., and Dr. Hobson, F.R.S., vice-presidents of the Cambridge Philosophical Society.

We learn from Science that the will of Mr. James Callanan, of Des Moines, makes bequests amounting to £7,000 for educational institutions. Of this sum £20,000 goes to Talladega College, Alabama.

The chair of chemistry applied to the dyeing industry at the Paris Conservatoire des Arts...