

"I have about perfected arrangements with Mongols here to go as far as the Tengri nor, as I have found it impossible to get any of them to agree to go to Lh'asa, so determined are the Tibetans to keep us out as long as possible. The Mongols returning from Lh'asa tell me that at Nagch'uka, and at several other localities north of Lh'asa, they were searched and cross-questioned by officials and soldiers from Lh'asa as to whether they had any foreign goods with them, that they were told that not only foreigners, but everything from their land, was now excluded from Tibet.

"I am unable at present to say where I will get to, but hope to be able to do useful geographical work. I have surveyed all my route from Chang-Chia-Kou* (Kalgan) here with prismatic compass, taking astronomical observations for latitude and longitude every two or three days, which, though I do not believe they will prove absolutely accurate, will serve to fix temporarily a considerable number of points on the map.—I am, &c., W. W. ROCKHILL."

Notes on M. Dauvergne's Travels in Chinese Turkestan.

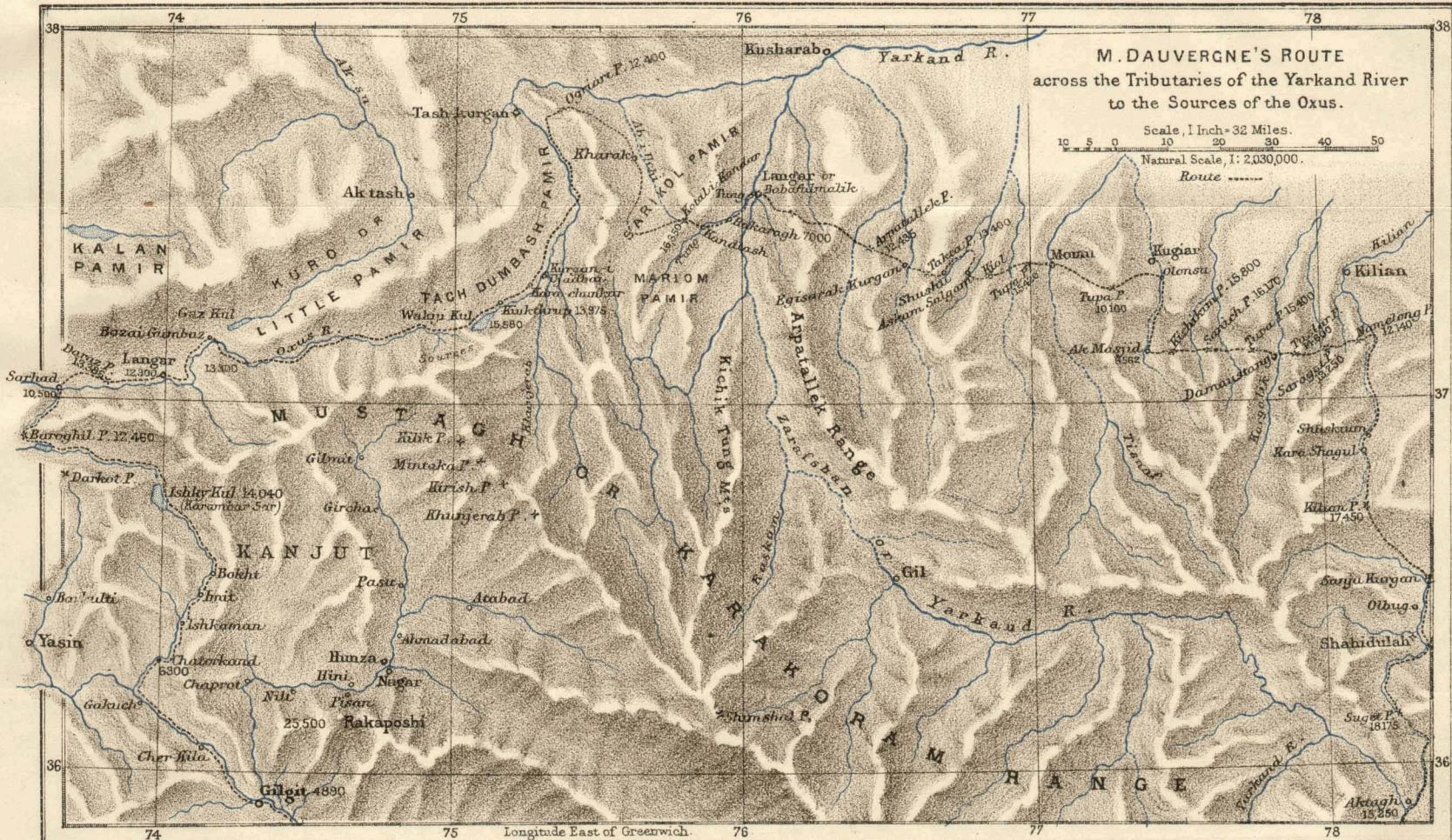
By GENERAL J. T. WALKER, C.B., F.R.S.

Map, p. 816.

THE recently-published Bulletin of the French Geographical Society for the first quarter of 1892 contains a very interesting paper by Mons. Henri Dauvergne, entitled, "Exploration dans l'Asie Centrale," and illustrated by a map of his journey. M. Dauvergne is a French gentleman who has resided for some years in Kashmir, and had previously made excursions across the Himalayas to Kashgar and the Northern Pamirs. In 1889 he again crossed the great ranges into Turkestan, and travelled along the northern slopes of the Kuen-Lun and the Hindu Kush Ranges to the Southern Pamirs and the sources of the Oxus. He left Srinagar on June 22nd, and followed the well-known route from thence eastwards to Leh and northwards over the Karakoram Pass as far as Suget and Sanju Kurgan. Thence he struck north-west over the Kilian Pass, taking a route which, though known, has not, so far as I am aware, been ever travelled by a European, and he maintained a line of exploration of his own from thence westwards for a considerable distance, until he reached the sources of the Oxus. Descending this river until he reached a point opposite the Baroghil Pass, over the Hindu Kush Range, he crossed over into the Mastuj-Chitral Valley and ascended it, and then crossed a very difficult and previously unexplored pass leading into the Karambar Valley. Thence he returned *via* Gilgit to Srinagar, where he arrived on November 8th, after an interesting journey of four and half months' duration, over a distance of 1500 to 1600 miles, much of which had not previously been travelled by any European.

M. Dauvergne's object seems to have been primarily to enjoy himself and shoot *Ovis Poli*; but he evidently had some intention of acquiring geographical

* Or Chang-Kia-Kou (*cf.* Prejevalsky's 'Mongolia,' i. 34).



M. DAUVERGNE'S ROUTE
across the Tributaries of the Yarkand River
to the Sources of the Oxus.

Scale, 1 Inch = 32 Miles.
10 5 0 10 20 30 40 50
Natural Scale, 1:2,030,000.
Route

H. Sharbau, R.G.S., del.

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F.S. Weller, lith.

information also, as is to be inferred from the summary of geographical results which he gives at the end of his paper. It is not stated whether he took any surveying instruments with him, nor is any account given of the method followed in the construction of the map which is given to illustrate his route. He does not seem to have kept up a systematic record of the bearings and distances along his line of route; but he was probably provided with an aneroid barometer, as he gives a large number of heights, which can only have been determined with the aid of some such instrument. The map is very questionable in several particulars, and occasionally disagrees with the narrative, but it is of importance in that it gives some new geographical information, and more particularly in that it restores Captain Trotter's rendering of the upper sources of the Yarkand River, in the map illustrating his paper on the geographical results of Sir D. Forsyth's Mission to Kashgar, which is given in the 'Proceedings' of this Society for 1878. Thus it greatly differs from the recent rendering of that river by the Russian officer, Captain Grombchevsky, in his map of Kanjut, Raskam, and Sarikol, which is published in the 'Izvestia,' Vol. XXV. (1889) of the Russian Imperial Geographical Society.

The operations of the Great Trigonometrical Survey of India have been carried northwards up to the great Himalayan Ranges, and have fixed the positions of all the principal peaks on the line of the water-parting between India and Turkestan. All this was done more than twenty-five years ago, but as yet no regular survey of the regions beyond has been attempted. Thus the delineation of those regions in the Indian maps has rested entirely on the route-surveys executed by or under the direction of Captain Trotter and by Mr. Hayward, the details of the course of the rivers and the positions of places off the route-lines being filled in from native information. Consequently, when Captain Grombchevsky's map was published, it was immediately accepted as the first work of a trained geographer in regions which had not yet been fully explored. It was therefore taken as the basis of the map of the Pamirs and adjacent regions, which is given in our 'Proceedings' for last April, to illustrate Captain Younghusband's account of his travels.

Mons. Dauvergne and Captain Trotter show the Yarkand River as rising in the northern slopes of the Mustagh section of the Hindu Kush Range, in long. 78° , then flowing N.W. to long. 76° under the name of the Zarafshan River, then N. and N.N.E. to Kosarab (Kusharab), in lat. 38° , where it enters the plains, and proceeds to Yarkand. Captain Grombchevsky makes it rise in the same region, and carries it a little above the parallel of 37° , then makes it strike to the N.E. across a range in Raskam, and flow to the S.E. for some 20 miles, when it again turns suddenly to the N.E. This last bend occurs near the village of Tash-Khan, which Captain Grombchevsky is stated to have visited, and which he places about 60 miles due south of Kusharab. He then makes the river flow on to Yarkand under the name of the Raskam River. He gives the river which flows by Kusharab a length before arriving there of only 30 miles, whereas, according to M. Dauvergne and Captain Trotter, the river has a course of over 200 miles before it reaches Kusharab.

This discrepancy of course arises from the circumstance that neither of the explorers followed either of the rivers through its entire course; each struck various rivers at various points, and acquired certain ideas as to their identity from native information, which is not always to be relied on. Captain Grombchevsky appears to have gone over the ground most closely, but not to have seen the peculiar wanderings of the river above Tash-Khan which he shows on his map; moreover, it is by no means certain that his rapid route-survey up to Tash-Khan is to be accepted as altogether correct.

Captain Younghusband does not throw any light on the subject in his paper;

he brought no maps with him from India, and his route was inserted into Captain Grombchevsky's topography by Mr. Sharbau, our chief draftsman, from such information as he could give orally. He travelled along the principal source of the Yarkand River, and brought to light a very important range—the Aghil—not previously laid down on any map. He crossed this range and got into the Oprang Valley, which lies between it and the Mustagh Range, and, making various incursions into the higher mountains, he descended this valley until he reached Chong Jangal (lat. $36^{\circ} 40'$ by long. $76^{\circ} 10'$), where the Oprang River joins the main branch of the Yarkand River, which he had previously diverged from. It is just below this point that the discrepancy between M. Dauvergne and Captain Grombchevsky commences; but though down to this point Captain Younghusband gives many details of his movements and the country through which he is passing, he gives none whatever of his journey from Chong Jangal into the Tagh-dum-bash Pamir, beyond saying that “on the first march after leaving the Raskam River he met Captain Grombchevsky, and spent two days with him. He then started for the Tagh-dum-bash Pamir, and, “crossing an easy pass, 14,600 feet high, named the Kurbu, or Ili-su, found himself free of the high cliffs and lofty mountains which shut in the valleys of the Yarkand River and its tributaries.” According to the map the direct distance from Chong Jangal to the Ili-su Pass is over 40 miles, and it appears to have been travelled without any fact of importance as regards the course of the Yarkand River presenting itself to Captain Younghusband's notice; but it is in the neighbourhood of this very region that the discrepancy between M. Dauvergne and Captain Grombchevsky originates.

I am not prepared to express any opinion as to which of the two explorers is correct; but in the interests of geographical science, as regards a region which is of some importance to this country, it is desirable that our ‘Proceedings’ should contain some account of M. Dauvergne's explorations over new lines of route. I have therefore taken from his journals the following brief outline of his route, commencing at the point near Suget at which he left the main road from the Kara-Koram Pass *via* Sanju to Yarkand, and took up a new line of route. I give all the bearings and distances and heights of passes which are given in the report. A map is also given, which is a facsimile of part of his own map, excepting that it is slightly reduced in scale in order to correspond with the map of the Pamirs and adjacent regions in the April number of our ‘Proceedings,’ with which it should be compared.

Leaving Suget, he descended the course of the River Karakash and encamped at Olbug, and the following day at Sanju-Kurgan. Here two roads bifurcate, and he took the route to the N.W., and ascended a stream from the Kuen-Lun Range, and encamped on a little plateau midway to the Kilian Pass. Next day he crossed that pass—17,450 feet high—on the frontier of Chinese Turkestan—and descending the steep slopes to the north, encamped at Karashagul, and on the following day at Shuskium. He next halted at the mouth of the valley of Namelong, where he decided to quit the caravan route to the north and turn westwards, across the spurs of the Kuen-Lun Range, in order to avoid any difficulties with the Chinese officials. Ascending the valley of Namelong, he reached an encampment of Wakhan Kirghiz, by whom he was hospitably received. He crossed the Namelong Pass, 12,140 feet high, and descended into another Kirghiz encampment. He had still five passes to cross before reaching the valley of Kugiar. The next day he crossed the Saraghat Pass, 13,250 feet high, and found the ground covered with fine dust, blown from the Gobi Desert, which enabled the horses to cross it easily. He then encamped at the foot of a glacier with a plentiful supply of good water. The next pass crossed was the Tuslar Davan, 14,600 feet high, which brought him, after a march of about 20 miles, to the shrine of Sultan Kalitch, in a little grassy plain. Thence making a

short march of 6 miles, he descended to Damaustang and encamped among willows and birch trees on the bank of the Kargalik River. Next day he crossed the Tupa Dawan Pass, 15,400 feet high, and descended a small river flowing to the north, through a great opening in a second chain parallel to the Kuen-Lun. This chain, he says, is not shown in any map, though it has peaks rising from 16,000 to 19,000 feet. It is cut through by rivers flowing from the Kuen-Lun Range across this second range, to lose themselves in the Lob-nur, with the Kizil-su and the Zarafshan Rivers.

The fifth pass crossed was the Sanich Dawan, 16,170 feet high. He passed a great peak to the north, on his right, which he estimated at 19,000 feet high, and descended into the Sanich Valley, where he found a plain of good grass and the tents of Wakhan Kirghiz. Thence he crossed the sixth pass, the Kichikim Dawan, height 15,800 feet; but the pass is double, so that he had to descend and reascend 2500 feet, and finally descend 6700 feet, before reaching a little encampment of Kirghizes, at Ak Masjid, near the head of the Kugiar Valley. Here, a short distance off, he found an encampment of Russian soldiers commanded by Colonel Piewtsoff, who welcomed him very cordially. The next day he made a long march down the valley to the little village of Olonsu. His map shows this village to be a few miles south of Kugiar (Koghiar), and gives August 31st as the date of his arrival there. He was now at the edge of a desert of sand which stretches to the north towards the Rivers Tisnaf and Zarafshan; and here he met two English sportsmen, Major Cumberland and Lieutenant Bower. He parted from them next day, and turning W.S.W., crossed the Tupa Dawan, 10,100 feet high—which is also called the "Mountain of Dust"—and descended into the Tisnaf Valley, and after a long march of 22 miles encamped on the bank of the Tisnaf River, near a pretty village called Momu, inhabited by Turkis, where he found good water and plenty of grass, and purchased grain for his horses. Thence he proceeded westwards along the dry bed of a river, and encamped at Kiol, where he met several people of Kargalik who had come to cut down fir trees on the neighbouring hills, where alone firs are found on the Kuen-Lun. Here his route turned down a little river to the N.E. to the village of Askam Salgam, where he found good grass, and fields of oats, and wheat and Italian poplars. He continued following the river to the N.E. (?) for some distance, and then turned up another little river in the direction S.W. until he reached the little village of Shushu, and encamped on the plateau of Donya, among a clan of Wakhan Kirghiz. The next day he crossed the Takta Dawan Pass—height 13,400 feet—over mountains clothed with spruce firs, junipers, and some birch trees. He descended into a very deep gorge, and met with a little river coming from the west, which apparently joins the Zarafshan River at Kosarab (Kusharab). He ascended it to Egisarak Kurgan, a little square fort occupied by some Turki functionaries in the service of the Chinese. Here he found some primitive furnaces for extracting copper from the ore, which is sent to Yarkand and converted into money by the Chinese.

Ascending the valley of Egisarak Kurgan, he crossed the steep Arpatallek Pass—12,435 feet—and descended through deep gorges of black cliffs, rising perpendicularly into fantastic peaks, the mournful and savage aspect of which it would require the pencil of Gustave Doré to delineate. Passing through these, he came on an expanse of grass and orchards of apricots, apple trees, and wild olives, with a few habitations, and the shrine of Babafmalik, which is surrounded by numerous tombs. The village, he says, is best known by the name of Langar, a common name in Turkestan for villages situated at the junction of two streams or two roads. Here a small stream enters the river of Zarafshan, which flowed below his encampment, and the river lies between perpendicular rocks, which prevent all

passage along its banks. A day had to be spent in making preparations for crossing the Zarafshan, which was done on a raft supported by inflated skins drawn across the river by swimming horses, according to the custom of the country. The raft appears to have been taken across the river and back again more than once, for the crossing took more than four hours. It was very risky, but was accomplished without accident. The river was clearly far the most formidable of any of the affluents of the Yarkand River which he had to cross, and may be assumed to be the principal source of that river.

Thence he travelled a short distance along the left bank of the Zarafshan to the junction of the Tung River, where he halted two days. He describes the Tung Valley as very fertile, with an abundance of fruit and fish, but surrounded by inaccessible mountains, which convert it into a huge fortress, accessible only from the Zarafshan on the east and the pass of Kotal-i-Kandar on the west. He ascended the valley, and, passing the village of Kandlash, turned to the S.S.W., and encamped on a little plateau of turf 11,500 feet high; thence he went up a ravine, of which the direction is S.E., and scaled the steep slopes of the Kotal-i-Kandar, crossing a rugged sheet of frozen snow. The pass is 16,350 feet high, and commands a grand view—to the S.W. the snowy chain of the Mariom Pamir, extending as far as the eye can see; to the W. the Shaedan Chain, concealing the valley of the Tag-dum-bash Pamir; and to the N. a great black mountain, which probably appertains to the chain beyond Tashkurgan. He descended with ease from the Kotal-i-Kandar, along a stream called the Ab-i-Uchi, down to a place where he encamped. The following day he reached the village of Kharak, which is surrounded by a loop-holed wall to guard against the attacks of Kunjuti robbers, who travel this way in their marauding expeditions to Yarkand and Kashgar. Thence he crossed the Ogriart Pass, which is 12,400 feet high, and very easy, the mountains resembling the Tian Shan Range north of Kashgar. On the other side he found himself at an opening into the valley of Tashkurgan, and saw the fort of that name, with its white bastions, to the N.N.W., on the left bank of the Tag-dum-bash River.

The next day he proceeded S.S.E., over a plain of sand and stones, to the camp of the Kirghiz Pir Inman Bai, the great range of the Tagharma Mustagh being seen to the N.N.W. Then he proceeded to the junction of the Rivers Khunjerab and Karachunkar, at a place called Dabdar, where Sarikol Kirghiz were encamped. He ascended the Karachunkur to the W.S.W., crossed a great moraine, and descended into a plateau, in the midst of which he found the ruins of the Kunjuti Fort, known as Kurgan-i-Ujadbai, and, hastening on after a long march, reached the Kirghiz camp of Chadir Tash. Continuing his march westwards, he passed the mouth of the Mintaka Valley; he met a man of Raakam, who told him that the river of Raakam flows into the Zarafshan, and is one of its affluents. Proceeding W.S.W., he arrived in front of the Kilik Pass, which leads to Gulmit and Hunza, and continued his march until he reached a place called Kiuikthrup, 13,935 feet high. It was now September 24th; the northern slopes of the great Mustagh Range were all covered with snow, and the Kirghiz had quitted the higher ranges with their flocks to find a milder climate in the Tag-dum-bash Pamir.

After some days spent in shooting *Ovis Poli*, he decided to return to Kashmir *viâ* Gilgit, and, proceeding westwards, crossed the Wakiji Kul Pass, 15,580 feet high, with a lake on the summit, and descended to the great bed of a river flowing westwards, and issuing out of three enormous glaciers. This river he found to be the Oxus. He encamped in front of the glaciers at an altitude of 14,200 feet; then descended 15 or 16 miles to a camp at 13,300 feet. Continuing 5 miles along the river to the N.W., he reached the shrine and ancient caravansery of Bozai Gumbaz.

He was now in the heart of the Little Pamir, and made an excursion to the Gaz-kul* Lake, which is the source of the Aksu River.

He discusses the question whether the Aksu or the Panjah branches of the Oxus are the principal source of the great river, and says it appears to him that the greater flow of water into the Panjah from the glaciers of the Hindu Kush Range undoubtedly show it to be the greater river, and the principal source of the Oxus.

Descending the Oxus three days' march he reached Sarhad Wakhan—10,500 feet; crossed the Baroghil Pass—12,460 feet; turned eastwards along the upper course of the Mastuj River until he reached the Isbkykul Lake, which drains into the Karambar Valley; thence he proceeded over a most difficult pass, never before crossed by a European, into the Karambar Valley, whence he went on to Gilgit, and returned to Kashmir without further difficulty.

M. Dauvergne concludes his narrative with the following summary of his contributions to geography.

I. That there is a second chain parallel to the great chain of the Kuen-Lun, on the north, towards Kashgaria.

II. That the river of the valley of Tung is an affluent of the Zarafshan, and not a tributary of the Tag-dum-bash River, as is shown in Russian maps.

III. That the sources of the Oxus are in lat. $37^{\circ} 10'$ by long. 75° east of Greenwich, and not in the Gaz-kul Lake, and that the waters of the principal branch of the Oxus issue from the great glaciers of the Hindu Kush Range.

IV. That the Karambar Pass, though very difficult, and stated by an English writer to be impracticable, is practicable, as he crossed it with a caravan of ten horses; and that the Lake Isbkykul,† at its summit, flows certainly into the Karambar Valley, and not into the Mastuj Valley, as has been reported by one of the native Indian explorers.

The above is a brief outline of M. Dauvergne's route and its geographical results. It certainly leads one to conclude that the Zarafshan River is the most important of the southern affluents of the Yarkand River, for he crossed all the other affluents with so little difficulty that he nowhere mentions the crossing, whereas the Zarafshan was large and deep, and was crossed with difficulty on a raft improvised for the occasion. He must have crossed Captain Grombchevsky's Raskam River; but he cannot well have confused it with the Zarafshan, for the account of his route makes the Zarafshan much further from Kugiar and nearer to Tashkurgan than the Raskam is shown to be. He specially dwells on the circumstance that the River Tung, which joins the Zarafshan on its left bank, is not an affluent of the Tag-dum-bash River, as he says it is shown to be in Russian maps. It is to be noticed, with reference to this statement, that Captain Grombchevsky shows a Tung River joining the Raskam River on its left bank, 40 miles E. of M. Dauvergne's junction of the Tung River with the Zarafshan. Possibly both maps are here endeavouring to indicate the same geographical fact, but if so there must be great error somewhere.

* The appellation Gaz-kul simply means Goose-lake, and there are many lakes so called in Turkestan. Mr. Littledale was informed that this lake is called Chak Mak Kul, and it has therefore been given this designation on the map of the Pamirs in the 'Proceedings' for April.

† The lake has long been known to be the source of the Karambar River; but a native explorer, coming up from Mastuj, reached what he believed to be the same lake, which has therefore been conjectured to be the source of two rivers. It now appears that there are two contiguous lakes, separated by a low water-parting, so that each river has a separate source.

M. Danvergne deserves every credit for the manner in which he has carried out an arduous and difficult journey, travelling over much ground never before traversed by a European. His arrangements seem to have been excellent throughout, and his relations with the people of the country were always most friendly and pleasant. As a traveller and sportsman he appears to have been very skilful and successful. As a geographer he is now in rivalry with Captain Grombchevsky, and it remains to be seen which of the two explorers has delineated the course of the southern affluents of the Yarkand River with greater accuracy.

What is now wanted is a fairly accurate survey of the northern slopes of the Himalayan Ranges on a small scale—say $\frac{1}{4}$ of an inch to the mile; and there seems to be no reason why it should not be undertaken by the Indian Survey Department. Twenty-five years have elapsed since the surveys of Kashmir and Ladak were completed by that department, and then it was considered that enough work had been done in that region, and that the surveyors should be moved into other regions where they were more wanted. But now the time has arrived when a small party equipped for triangulation and plane-tabling, may easily be spared from India to render valuable service to geography in the Kuen-Lun Ranges and on the northern slopes of the Himalayas. It is greatly to be desired that the Government of India will take early steps to have a sufficiently good survey made of an important and interesting region on the borders of Chinese Turkestan, which is at present inadequately known.

*The Italian Geographical Congress of 1892.**

THE first National Geographical Congress of Italy was held at Genoa, from September 18th to 25th. The Congress held at Venice in 1881 was one of the series of International Congresses, held at Antwerp, Venice, Paris, and Berne, and to be held in London in 1895. It was a great success. The weather was magnificent; the attendance, chiefly Italians, was numerous; Genoa, always superbly beautiful, looked at its best. As is well known, in the preceding week the fourth centenary celebration of the birth of Columbus in this, his native city, took place amidst much pomp and splendour in the presence of their Majesties the King and Queen of Italy. The Geographical Congress commenced after the close of the festivities. There was an Exhibition of Arts of a general kind, and also a Geographical Exhibition, special to the work of the Congress, in a separate building.

H.R.H. the Prince of Naples was the Patron; H.R.H. the Duke of Genoa was the Honorary President, and took a personal share in the proceedings; the ex-President of the Italian Geographical Society, the Duke of Sermoneta, and three other Senators of the Kingdom of Italy, were Honorary Vice-Presidents. The actual President was the Marquess Doria, the President of the Italian Geographical Society. Professor Giuseppe della Vedova, the Secretary of the above-named Society, who is so well known to, and highly esteemed by, many English friends, discharged the office of Secretary of the Congress.

There were three Sections, as follows: (1) Scientific, embracing mathematics,

* In the absence of the four delegates appointed by the Council of the Royal Geographical Society to attend the Genoa meeting, the Society was well represented by its Gold Medallist and Honorary Corresponding Member, Professor Guido Cusa, and the Rev. S. A. Steinthal, F.R.C.S., Chairman of the Manchester Geographical Society. Miss Cust attended on behalf of her father, Dr. R. N. Cust, whose illness at the last moment prevented him from proceeding to Genoa as delegate.