

yearly rainfall in Adelaide from 1839 to 1874; Diagram showing the average monthly rainfall, and the maximum and minimum rainfall in each month in Adelaide, Melbourne, and Sydney, by the Hon. Sir G. S. Kingston (*South Australian Institute, Adelaide*). MS. map of Mr. Elias' route between Bamo and Mung-Mau, 1875 (*Ney Elias, Esq.*). A map of the Country northward and westward of Candahar, by Lieut. William Frazer Tytler, 1838-42 (*C. B. Markham, Esq.*).

The PRESIDENT informed the Meeting that according to information received from the Admiralty, the Commodore on the West African Station had despatched the gunboat *Sirius* from Ascension to Loanda on the 15th of January, with instructions to the Commander to hold himself at the disposal of Lieutenant Cameron, with a view to the conveyance of his men to the Cape of Good Hope. It was very satisfactory, he observed, to find an officer of the Navy taking such a responsibility upon himself, in accordance with the general instructions which he had previously received from the Admiralty, the special instructions which were sent out on the application of the Council of the Royal Geographical Society not having reached the station when the gunboat was despatched to Loanda. At the same time the *Sirius* would in all probability arrive too late to be of any real service, as it only left Ascension on the 15th of January, and would hardly be at Loanda before the end of the month, while Cameron expected to leave Africa for England at the latest by the middle of the month; in fact, when he last wrote on the 24th of December, he was only waiting for the completion of the repairs and provisioning of his vessel in order to send his men away at once, and to take his own departure immediately after.

The following Papers were read :—

1. *A Visit to the Valley of the Shueli, in Western Yunnan (February 1875)*. By NEY ELIAS, Gold Medallist, R.G.S.

[ABSTRACT.]

MR. NEY ELIAS had been ordered to Bamo to prepare the means of transporting Colonel Browne's Mission across the Kakhyen country into China, and it became part of his duty to visit the Shueli Valley, in February and March 1875.

Of the numerous routes leading from Bamo to Western Yunnan, two only are trade-routes, properly so called, namely, the Northern or Tapeng route, already reported on by Major Sladen and Dr. Anderson, and the lower or Sawuddy road. It is upon the Sawuddy road that Mr. Elias now reports. The plain between the lower slopes of the hills from which this road descends and the Irawadi is from 9 to 10 miles broad, and the numerous streams spread themselves out in the form of swamps or shallow flood-lagoons, which are slowly dried up by evaporation. Thus it is only in the winter and early spring that a practicable road exists between Bamo and

Mansey, the point where it converges with the track from the Irawadi and enters the hills.

In ascending from Mansey the track leads, for a short distance, across the low land to the eastward, and then commences to mount the spurs of the hills—a rough mountain pathway leading along the side of a transverse range, which appears to be one of a series of three or four that abut, at one end, on the valley of the Irawadi, and at the other on that of the Shueli. The views obtained of the Irawadi Valley and neighbouring mountains, from various points in the ascent, are extensive and beautiful. The river itself, with its islands and sand-banks, can be clearly traced from its egress from the third defile to its entrance into the second. The high land is inhabited throughout, and there are villages and patches of cultivation; but the road is merely a rough hill-side track, while many of the nullahs and rocky places try the endurance of loaded animals severely. Nevertheless it is said to be easier than either the northern or middle routes.

Besides the little gardens of tobacco and vegetables usually seen around Kakhyen villages, there are, in these hills, small enclosed patches of poppy; but the whole yield forms a very insignificant proportion of the amount of opium consumed, the balance being obtained from the Chinese Shan provinces of Yunnan. The greatest altitude is about 4700 feet, and shortly after attaining it a distant but magnificent view is opened out of the Shueli Valley, with the river winding through it, and beyond, the mountains of Yunnan. This point can scarcely be called a pass, for the road winds obliquely over a rounded ridge of gentle gradients on both sides.

The route emerges from the hills on the flat plain of the Shueli Valley, at the small Shan village of Canklem, on the right bank of the Nam Wun. Here the Chinese border is crossed, and about a mile further on, standing like an island of trees and gardens in the otherwise bare plain, is the village of Kutlung, consisting of about thirty Shan houses.

The distance from Kutlung to Mungmau is about 22 miles, and several moderate-sized villages are passed on or near the road, surrounded by some kind of light stockade, or low earthen wall. Mungmau is the capital of the Tsaubwaship, and may be regarded as the modern representative of the Mungmaorong of Major Pemberton, and the capital of the ancient Shan kingdom of Pong, founded A.D. 568. Mungmau stands on an open rising plain, at a distance of about a mile from the river's right bank, and is protected by a brick-wall, about 500 yards square and 16 feet high, with four gates. The buildings within the wall are inferior bamboo-huts, without

arrangement of any kind, and the population is about 1800—all, except a few officials and soldiers, being local Shans.

Nam-Kam, near the opposite bank of the river, and some 20 miles lower down, is the chief town of the Burmese Shan Tsaubwship, forming one of the thirty-nine *maings* or townships of Theinnee. It is ruled by a Shan, there being no Burmese officials or soldiers.

The Shueli Valley, as a level plain, has its upper limit only some 6 or 8 miles above the town of Mungmau, and its lowest limit near the point where the river re-enters the hills, in its course to the south-west. It would thus measure some 30 miles in length, with a breadth varying between 4 and 12 miles. Nearly the whole extent appears to be good arable land, but less than one-half is under cultivation, rice and tobacco being the staple products. Large fruit-gardens and fields of pine-apples are met with round the villages.

From a physical point of view the most remarkable feature of this section of the course of the Shueli is its altitude above the sea, and the consequent great fall which the river must have in its course towards the Irawadi. Taking the altitude near the lower end of the valley to be 2600 feet, and estimating that of its confluence with the Irawadi at 300 feet, we have a fall of 2300 feet to be accounted for, within a distance (allowing for windings) of 140 miles.

Throughout its upper valley, in the Shan States, the Shueli flows in a wide but generally well-defined shingly bed, and with a scarcely perceptible slope between the upper and lower end of the valley. At the ferry within a mile of the Nam-Kam the breadth of the river was about 100 yards, the average depth across some $4\frac{1}{2}$ feet, and the surface-current about $1\frac{1}{2}$ knot an hour.

The scenery below the entrance of the river into the hills is remarkably wild, and I am informed that it continues to flow through almost uninhabited hill-tracts until it reaches the plain of the Irawadi. The Kakhyens describe the falls and rapids as occurring at intervals of every few miles, and a sheer waterfall, of great height, is spoken of, which is difficult of access owing to the rugged nature of the country around it.

The Kakhyens, in this border region, are clearly the dominant race, and come and go in the Shan country as they please, attending the markets both as buyers and sellers, and frequently hiring the Shans as bullock-drivers or porters for their produce. On the other hand, the Shans never venture among the hills of their neighbours without an escort of Kakhyens, procured through the head of a protected village. In bravery, courtesy, hospitality, and probably also honesty, the Kakhyens are far in advance of the Shans of the Shueli Valley.

In the Mungman Tsaubwaship there are four localities where markets are held, and four also in Nam-Kam. Mr. Elias had opportunities of witnessing two of these markets, and in both cases there was a fair gathering of people, local Shans, and a considerable number of Kakhyens and Hill Chinese. The objects for sale were chiefly eatables and chewing-stuffs, a little native cloth, and a few English piece-goods—such as red cambric, blue drills, T-cloth, and muslin; some salt, a few fruits, and salt fish. A great deal of the business is conducted by barter; and there is no coin current, all trade—not barter—being carried on by means of Chinese block silver. All the trade between Burma and the Tsaubwaship of Nam-Kam is carried on by the Sawuddy route, the animals used being bullocks or ponies.

After describing the Shueli valley, Mr. Elias has a note on the more northerly routes between the Irawadi and Yunnan. They are two in number; and though but little used at the present day, it is possible that in the earlier times one of them, at least, may have been a common highway between Yunnan and the Irawadi. It is certainly the shortest traverse from Momien to practicable navigation. The distance, by either route, is performed by ordinary travellers on foot in about six days, or, if on horseback, in five days, or even less. With our present information it is not possible to say whether either of these routes can be that on which Marco Polo describes the great descent of two and a half days' ride, leading to the forest of Mien; but one of them would certainly appear to point to the road travelled over by the 20,000 fugitives from Yunnan-fu to Ava in the year 1687; mentioned in vol. ii. p. 73, of Yule's 'Marco Polo.'

In a second note Mr. Elias gives some account of what is known of the origin or early history of the Kakhyen or Singpo race. The only two previous accounts are those of Major Hannay, who visited the Singpos in 1827, and Captain Neufville, whose explorations among tribes bordering on Upper Assam extended from 1825 to 1828. Both are necessarily brief, and both refer chiefly to the Singpos occupying the slopes of the Patkoi range, and the right side of the Irawadi valley. Comparatively little light is thrown on the more southern clans, sometimes known as the Kokoos, and whose homes are chiefly beyond the left bank of the river.

It is these latter mainly who are known to the Burmese, and who have been named by them Kakhyens. In all probability they are looked upon as an inferior race by their brethren to the north—the Singpos proper—but still they are in no way subject

to the latter; while their language, customs, and traditions, are essentially the same.

The Kakhyens are subdivided into numerous clans or sub-tribes, and are also sometimes roughly spoken of as Kakoo-Kanams, or upper and lower Kakhyens, referring to the positions they respectively occupy as regards the Irawadi. The dividing line is generally indicated as the third defile of the Irawadi. But most of the Kakhyen clans change their positions considerably in the course of a generation or two, the tendency being to press towards the south.

All the lower Kakhyens point to the north as their original habitat, and it is reported that, at the time of the present King of Burma's accession to the throne, no Kakhyens existed within the government of Momiën, whilst at the present day large numbers are to be found there, and at other places south of the second defile of the Irawadi.

As far as Mr. Elias has been able to ascertain, no mention of Kakhyens or Singpos is to be found in Burmese writings until very recent times, and perhaps the earliest mention of them in any written language may be that contained in the Shan histories of Mogaung.

The country at present occupied by the Singpos, and the more northern of the Kakoo tribes, would seem formerly to have been inhabited by the Noras, a tribe of Shan kinship. In about the year 1225, the kings of Mungmau undertook the conquest of the Noras, as part of his scheme for the subjection of Upper Assam; and it is in the records of this campaign that the Kakhyens are first mentioned; and both the date and locality of this first appearance of the Kakhyens coincide with their own traditions.

Mr. Elias obtained a copy of a pedigree, which was put in writing, at Bamo, under instructions from one of the most powerful chiefs among the Kakaos or southern Kakhyens. He refers the birthplace of his race to the east of the Irawadi, and on the southern border of Khamti, and places the first man at a distance of twenty-three generations from the present time. As a subject connected with their history, Mr. Elias gives a list of the *Nats*, or spirits, worshipped by the Kakhyens. If viewed in the point of a connecting link with their Hindu neighbours in Assam, it will be seen, too, some slight impression has been made by contact with the latter, and a few, at least, of their *Nats* may be traced, either directly, or through the Shans or Burmese, to Hindu mythology. Further investigation of their traditions might bring to light still closer connection. Probably their religion is made up of a mixture

of all the various idolatries and superstitions of the nations with whom they have intercourse.

During the short time spent in contact with the Kakhyens, Mr. Elias was frequently struck with points of resemblance between them and the "Gold-teeth," the "Zardandan" of Marco Polo, and the "Kinch" of the Chinese writers; although the locality in which they are found, and the absence of the characteristic custom of covering the teeth with gold, prevent the Kakhyen or Singpo tribe from being identified with the "Gold-teeth." The Kakhyens change their position very considerably in course of time. Still they have no tradition of having come from so far east as beyond the Salween, where the "Gold-teeth" appear to have lived. Marco Polo says that the "Gold-teeth" tattooed their arms and legs. The Kakhyens resemble them to some extent in this custom; although tattooing is not universal with them. The custom of "couvade" does not exist among the Kakhyens; neither "Gold-teeth" nor Kakhyens have prejudices regarding food, and both make a drink of rice-wine. Neither have idols or churches, letters, or writings. Both have the custom of cutting notices on a piece of stick and then splitting it, so that one half may be retained by each of the two parties to a transaction. Both had "never a leech," and appealed to the devil conjurers. On the whole, although there are points of resemblance, it is probable that we must look further east for descendants of the "Gold-teeth." The tribe most probably representing the "Gold-teeth" is that of the Leesaws in Western Yunnan, who nearly resemble the Kakhyens in features, costume, and arms.

Mr. Elias concludes his paper with a note on the route survey from which he constructed the map. His original paper will be published entire in 'Journal,' vol. xlv.

Colonel YULE, before discussing the subject of the Paper just read, begged to remind the Meeting of the past services rendered by Mr. Ney Elias to Geography. The journey he took a few years ago through Mongolia from Peking was one of the most extraordinary that had ever been performed by a single traveller. Issuing from the gate in the Chinese Wall to the north-west of Peking, he entered the Mongolian desert and traversed it for 2000 miles, accompanied only by one Chinese servant and a camel driver, till he came out at the Russian frontier in the Altai. From the correspondence he had had with him he was convinced that he was a man capable of earning still greater distinction as a traveller. He was an excellent and accurate observer, and gave capital accounts of what he saw. There was also a strong sense of humour in his letters. The Shueli Valley had been a little remarkable in the history of the geography of Eastern Asia during the last half century, and the Paper reminded him of the great controversy that raged about forty years ago about the sources of the Irawadi, and the supposed connection of that river with the Tsampu, or upper course of the Brahmaputra. The idea of that connection had been started on several occasions at intervals by very

eminent geographers, the great D'Anville being the first. The same notion was taken up by Alexander Dalrymple at the end of last century, and lastly by Klaproth, a celebrated German, who had the most extraordinary faculty both in languages and geography, but who unfortunately furnished a proof that a man might be a very great geographer and linguist and a good deal of a knave. People heard with horror the other day of the man at Bremerhaven who wished to hide a box in a ship so as to blow it up in the middle of the Atlantic, thinking he would be safe before the explosion took place. In a similar way, but with manuscript documents of fictitious geography, instead of explosive materials, Klaproth planted two boxes, one in the English Foreign Office, and the other in the Russian War Department, and they did not explode until he was in his grave, having first pocketed, in payment of his fabricated information, 1000*l.* from the English Foreign Office, and how many pounds from the Russian War Department the next generation perhaps would know. It was one of his theories that the Tsanpu came down and formed the Irawadi. He produced Chinese documents to corroborate it. But everything written in Chinese was not to be taken as true; the Chinese speculated about geography as well as Europeans; and finding the Tsanpu flowing through Thibet and disappearing they knew not whither, and the Irawadi running out in the south to Burmah, coming they did not know whence, they "combined the information," and concluded that probably the Tsanpu was the Irawadi. Klaproth wrote a good deal on the subject, brought a great deal of argument to bear upon it, and distorted for his purpose an enormous amount of latitude and longitude. His view was taken up by almost all Continental geographers, and maps were published in accordance with it, some representing the Tsanpu as running into the river of Bhamo, and others as into the Shueli. At last, in about 1836, Colonel Hannay of the Bengal army, who was the first European traveller up the Irawadi Valley, saw that the river at Bhamo was but a small stream, and certainly was not capable of holding the waters of the Tsanpu, in spite of Klaproth's argument. In a very beautiful map by Berghaus, the Shueli was represented as coming down all the way from Thibet; but it was now known that it did not run any great distance. Still some curious questions remained with regard to the rivers flowing southward from Thibet, especially the eastern branch of the Irawadi. The maps of Thibet by employes of the Jesuits, such as were now called Pundits, represented a certain number of rivers flowing from the great plateau towards the south and then lost to sight. Then there were the maps of Yun-nan by the Jesuits themselves, which showed great rivers emerging from the north and running down to the Indian Ocean; and the difficulty was to adjust them all. No reasonable person now doubted that the Tsanpu was the Brahmaputra which flowed into the Bay of Bengal. Then on the other side there was the Mekong, which also undoubtedly came from Thibet; and the Lu-Kiang or Salween, flowing into the sea at Martaban, and certainly coming from the same country. There was next a river difficult to identify, called in some maps the Khiu-shi, or Kuts' Kiang,* and he had very little doubt, for a reason he was about to mention, that this must be the eastern source of the Irawadi. The next river to the westward of the Ku-Kiang, and the only one lying between that and the great Tsanpu (which comes down into Assam under the name of the Dihong), was called in the Chinese maps the Kan-pu. When he (Colonel Yule) was in Calcutta fifteen years ago, a letter was received from the Vicar-Apostolic of the Roman Catholic Missions at Bonga, in Eastern Thibet, giving an account of the rivers east and west of him. Part of the account was very much perverted by his having one of the maps founded upon Klaproth's ideas, and he thought he was giving the geography he had picked up in the place, whilst he was really stating the false

* Called in D'Anville's map the Tehitom-chu.

geography he had learned from Klaproth's map; but he mentioned that on this river, the Kan-pu, had occurred the murder of two French priests, Messrs. Krick and Boury, who had been trying to penetrate from Upper Assam into Thibet about 1842 or 1843. Now it was known, from information on the Assam side, that that murder took place upon the Lohit River, the eastern branch of the Brahmaputra. There could therefore, he thought, be no doubt that the Kan-pu of the Chinese was the eastern branch of the Brahmaputra, and that that river ought to have a much longer source given to it than was usually the case in modern maps. The only Thibetan river thus remaining unaccounted for was the Khiu-shi or Tchitom-chu, which he believed would be proved to be the eastern source of the Irawadi. And this belief is confirmed in some degree by the fact that Dr. Anderson mentions that the eastern branch of the Irawadi is called by the Khamti Shans "Kew-hom."

2. *Afghan Geography.* By C. R. MARKHAM, C.B., F.R.S., Secretary R.G.S.

THERE can be no greater misconception than to suppose that the work of discovery and explanation is well-nigh complete. The *terrae reclusæ*, for the searching out of which our Society was founded, are still widely scattered and of vast extent. The good work which is now progressing in the Topographical Department of the War Office, and the materials which have recently been brought together in the India Office, remind us that Afghanistan, or a great part of it, in spite of the occupation more than thirty years ago, and of previous and subsequent travels, is still one of these *terrae reclusæ*. Politically and commercially, Afghanistan, lying between India and the line of Russian advance, contains the most important highways in the continent of Asia; yet vast tracts within its limits have never been explored. Some information, long neglected or forgotten, has recently been collected, and seems of sufficient interest to be worthy of being brought to the notice of a meeting of our Society, as it increases our knowledge of the geography of Afghanistan in some degree, and enables the inquirer to obtain a more accurate idea of portions of one of the great mountain bulwarks of our Indian Empire. The new information is contained partly in route-surveys not hitherto utilised, but chiefly in extracts from the manuscript journal of General Lynch, which have been communicated by his brother, our associate, T. K. Lynch, Esq. They relate to a visit which he paid to the upper part of the valley of the Argandab.

The great opportunity for acquiring a correct knowledge of the geography of Afghanistan was during the occupation of the country by British troops. A reference to the twelfth volume of our 'Transactions' will show that, in 1840, our President, Sir Henry Rawlinson, wrote from Kandahar that "the accumulation of materials of positive geography was going on steadily and satisfactorily;"