

G. W. Pease.

Southern Afghanistan.

51-

*[Faint, illegible handwritten text or markings]*



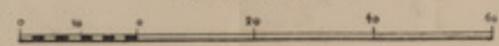


**VYSE'S SKETCH MAP**  
 OF  
**SOUTHERN AFGHANISTAN,**  
 AND  
**NORTHERN BALUCHISTAN.**

*Based on Surveys, by Officers with the Forces.*

TO ACCOMPANY GRIFFIN VYSE'S ARTICLE ON THE TAL CHOTIALI ROUTE.

SCALE IN MILES.



SECOND EDITION.

SOUTHERN AFGHANISTAN  
AND THE  
NORTH-WEST FRONTIER OF INDIA.

WITH MAP.

A REFUTATION OF MISTAKES MADE  
IN PARLIAMENT.

DEDICATED TO THE MARQUIS OF HARTINGTON,  
SECRETARY OF STATE FOR INDIA.

BY

GRIFFIN W. VYSE.

*Reprinted from the Army and Navy Magazine.*

LONDON:  
W. H. ALLEN & CO., 13, WATERLOO PLACE.

1881.

*(All Rights Reserved.)*

DS 352  
.V8  
~~1881~~

304437

22

T  
My L  
Tal a  
letter  
my le  
cussic  
Quett  
and a  
of th  
on th  
after  
A p  
follow  
"T  
it des  
ment  
medd  
forced  
religio

4. B. 12-2-22

TO THE MOST HONOURABLE  
THE MARQUIS OF HARTINGTON, M.P., H.I.M.'S  
SECRETARY OF STATE FOR INDIA.

13, Waterloo Place,

Pall Mall, S.W.

28th April, 1881.

MY LORD MARQUESS,

When the Conservatives were in power, I wrote advocating Tal as a better military centre than Quetta, and in your Lordship's letter to me of 22nd January last year, you said you had forwarded my letter to Mr. Gladstone. Your Lordship alluded to the discussion in the House in the summer of '78, on the occupation of Quetta and the effect of that operation on the mind of the Amir, and added that it was one of the causes of the unfriendly attitude of that ruler. Your Lordship expressed a wish to see my article on the North-West Frontier, which I sent you, and which you afterwards forwarded to Lord Derby, and others who wrote for it.

A present Cabinet Minister who read my paper wrote to me as follows:—

“ The plan explained seems to offer many advantages. I think it deserves to be more fully considered, but neither Indian Government nor people like new things. . . . . We have no right to meddle with another country. . . . . May the Government be forced to a bolder policy. . . . . We are supporters of the Moslem religion and all that it includes and involves. . . . . ”

Mr. Gladstone sent me a postcard to say :—

“ The subject is of much importance. Such a question would come, as I think, with more advantage from some one who had been accustomed to take a part in Parliament with reference to the Executive business of the Indian Government.”

My Lord, the matter of retaining the Tal and Peshin valleys is entirely in your Lordship's hands, and those plans you thought so admirable you can now carry out.

I beg to dedicate this pamphlet on the North-West Frontier to your Lordship.

With profound respect,

Your Lordship's faithful servant,

GRIFFIN W. VYSE.

---

# SOUTHERN AFGHANISTAN.

## THE TAL-CHOTIALI ROUTE.

---

### PART I.

*I obtained the official and confidential information contained in the following article whilst serving as Field Engineer in charge of the D. G. K. Column, Tal-Chotiali Field Force, Southern Afghanistan, and I must acknowledge the courtesy of the Marquis of Hartington, Secretary of State for India, in permitting me to publish the same.*

UNTIL very recently European writers knew of only three passes from India into Afghanistan, viz. the Khyber, Gulairi, and the Bolan. Sir Alexander Burnes in his *Kabul* mentions "the Sakhi Sawar pass by Bori to Kandahar" which "has been used in modern times by the Kings of Kabul," and he states that he had met persons who had travelled from the Indus to Kandahar in eight days. Elphinstone affirms that it was by this route that Bábár passed up to Ghazni with his army after the campaign of 1505. There are other important passes leading from the Dera-Ghazi-Khan district through the Suleiman hills, viz. the Sangarh, Kahá, Sori, and Chachar. The Sangarh pass leads into the Bozdár country, the Sakhi Sarwar pass into the Khetrán and Luni Puthan country; the Kahá and Chachar passes into the Khetrán, Mari, and Búghti country.

According to the official records, there are altogether ninety-two passes leading from the Dera-Ghazi-Khan frontier.\* These are held by the Bilúchis,† on whose country they adjoin, and who, in consideration of certain allowances, are made responsible for all stolen property taken through the passes of which they hold the charge; according to the Political Officer,

\* *Settlement Officer's Revenue Report.*

† Sir Herbert Edwardes.

the total amount of the allowance made for the charge of passes is Rs. 4,737 per annum.\*

There is a certain allowance made by the Governor-General's agent for Bilúchistan to the various chiefs and tribes on the frontier in addition to any sum officially recorded. Last year the returns showed an aggregate of two lakhs spent in this way by that official and the politicals.

There is a chain of forts along the frontier road between Vedowa and Bandowáni. The Mangrota, Harrand, Drigri, Mahommedpur, and Bandowáni forts are held by detachments of cavalry and infantry, from the Dera-Ghazi-Khan and Rajanpur garrisons. The other forts, twenty-two in number, are held by men of the Bilúch frontier militia. In times of peace the roll is about 1,000 strong. Prior to the Afghan war, there were two regiments of infantry and one of cavalry at Dera-Ghazi-Khan, and a regiment of cavalry stationed at Rajanpur.

Dera-Ismail-Khan has a mixed garrison of cavalry, British and Native infantry and artillery, of about 2,000 strong, and a similar number at Jacobabad. The militia strength of these frontier districts is estimated at 3,200 of all ranks, and maintained at a nominal cost to the state, including fort repairs and contingencies, of Rs. 10,00,000 per annum.

The Cháchar pass is the easiest and by far the most important of all the passes on this reach of the frontier.

In the Lagári Barkhan valley, at the head of this pass, two stone tablets were recently discovered in a rock, from the inscription on which it appears that the Emperor Jehángir, at the head of his great army, halted and prayed there in 1010 A.H. on his way from Kandahar from Delhi. Elphinstone gives the date of Jehángir's march to Afghanistan as 1015 A.H. There may be some confusion about the dates, but there is not the smallest doubt that he passed through the Cháchar pass, as we proved in 1879 (see *Pioneer*, March 28th, 1879), and that this route was extensively used by couriers to bring speedy information to and from India by Bábár, and the Mogul Emperors and the Kings of Khorássán (Elphinstone), and in modern times by large caravans, and Scinde, Panjab, and Afghan merchants (Settlement Officer's Revenue Report). Finally, Sir Alexander Burnes says, "It was the great trade route" between India and Central Asia. The important military station of Múltán stands on the Chinab river, and Dera-Ghazi-Khan is thirty miles off, on the

\* *Settlement Officer's Revenue Report.*

right bank of the Indus. There is a good road between these stations for nine months in the year, but when the rivers are in flood, a great portion of the country is submerged. It is possible to train these shifting streams,\* and keep them from inundating miles of the country.† About five years ago I submitted a project to Government to connect the great city of Múltán with Dera-Ghazi-Khan by means of a navigable canal passing through Mozuffergurh, which for commercial as well as political reasons would be most valuable, and thus place Múltán in direct communication with the frontier at all seasons of the year. There is a difference in level between the two rivers, but this difficulty could easily be overcome by two hydraulic locks. There are no other engineering difficulties in the way. The country is level and low, and the soil of soft sandy alluvial deposit. I estimated the cost of the whole project at four lakhs.

The distance from Dera-Ghazi-Khan to Harrand is fifty-six miles, with a capital road the whole way, many excellent stage bungalows, where ample supplies of all kinds are procurable, and a great deal of the country under cultivation, which is owned by the Lagáris, a very powerful clan, who muster 5,000 fighting men, and formerly held sway over the Gúrchanis and the Khosás, whose chiefs, Bijur Khan and Koura Khan, they murdered.‡ The Lagáris lived until very recently by raiding and stealing, and murdering was considered by them a very honourable and meritorious calling. Their chief, Nawab Jamal Khan, is a splendid specimen of a Bilúchi, and one of the most loyal subjects of our Government.§ I have known him personally for many years, and I can vouch for his being bent on reform, and following our officials in all good government, and carrying out useful works. From murdering and plundering, this powerful tribe, under the mild and beneficent rule of the British Government have become great agriculturists, steady, industrious, and docile. The Lagáris are the envy of the Khetráns, Maris, Kakers, and Luni-Puthans, who live beyond our border, and still follow—with the exception of the Khetráns—their marauding propensities; they cultivate not an acre of land, and obey no law or order. These wild men see the Lagáris within our border sleek and well-to-do, and they contrast their own condition with that of our subjects.||

\* *Professional Papers on Indian Engineering*, No. ccxix. and ccxlii.

† *Minutes of Proceedings of the Inst. Civil Engineers*, vol. 1., page 213.

‡ Sir Herbert Edwardes.

§ Sir Robert Sandeman.

|| *Settlement Officer's Revenue Report*.

Harrand is a large and important place: it commands the entrance of the Chachar pass, has a strong fortress, and is a frontier post. It is watered by a perennial stream from the Kaha, and the whole surrounding country is beautifully green, with fine trees and rich pasturage. Harrand is capable of being greatly developed. The country between this and Dera-Ghazi-Khan is practically level, and there are no engineering difficulties whatever, for a line of railway to this point. When rain falls in the adjacent Suleiman range, some of the hill torrents are for the time impassable, and the flood water runs to waste before reaching the Indus. Some years ago\* I submitted a scheme to Government for storing the water from the Suleiman hills, instead of allowing it to overrun the country and damage canals, villages, &c. The people are always either complaining of great drought, or that a flood has ruined them. I explained how easily all this might be rectified by stowing and utilising the water for irrigation. The general configuration of the lower Suleimans, the long gradual slopes at the base, and the confined gorges always to be found at different levels, are admirably adapted to such a scheme.† In Central India and Bundelkund, the natives thoroughly understand this by having a series of bunds, tanks, and reservoirs along the slopes of hills. When the top tank is filled, the surplus water runs on, and fills the second below, and so not a drop of the precious fluid is allowed to run to waste. All the land bordering the Suleiman mountains is of rich alluvial deposit, and might be brought under cultivation if water was procurable, and the system of saving water is very simple and perfectly feasible. I do not say this from guess-work, but from actual personal experience of the frontier, extending over many years, and a careful study of the nature and formation of the hills, the features of the country, and the wants of the people.‡

Nearly 400 years ago Babár was marching back from India and halted at Harrand. After emerging from the Chachar pass, he despatched Jehanghir Mirza with a body of troops to plunder the Afghans who held the whole country to the Indus, and which probably then flowed under the very walls of the present fortress.§ From this point, it is extremely likely that this erratic stream travelled east, and what we now call "the Punjnud"

\* When executive engineer in charge of a frontier division.

† See *Pioneer*, March 31st, 1879.

‡ See *Times*, April 7th, 1877.

§ *Journal Royal Asiatic Society*, July 1878.

was at that time somewhere below the present site of the city of Bahawulpúr (*Journal Royal Archæological Institute*, vol. xxxiv., No. 133, 1877, page 45). Pottinger says Alexander the Great rested at Harrand on his way to the sea (see *Journal Royal Asiatic Society*), and that Harrand was constituted by Nádír Sháh, the boundary between his dominions and those of the Emperor of Delhi (Elliot, vol. i. 49).

It is very evident, therefore, that Harrand, at the mouth of the Chachar pass, has from the earliest of times been regarded as a place of considerable strategic importance by the Moghul sovereigns and the rulers of Kelat and Kandahar. From Harrand to the top of the Chachar pass is thirty-nine miles; the lower half is rough and rocky, and at present impassable for wheeled artillery, though mountain guns, and all other arms of the service, can traverse it easily.\* We made a fairly good military road without much difficulty, and met with no obstacle *en route*, and not a single accident happened to any of the men or camels. Water was plentiful at all the encamping grounds, but no supplies, save grass and wood, are ever obtainable throughout the Chachar, which is uninhabited. The road through the pass has a rise of about 1 in 80, but by judicious alignment I found I could obtain 1 in 125, without much cutting or embankment, and by diverting the road in four places save crossing the stream more than three times. At one or two sites, where water is sometimes scarce, a weir dam of masonry across some of the narrow gorges in the solid rock of the river, would be the means of storing enormous reservoirs of water in times of emergency.†

Leaving the head of the Chachar, which is about 3,400 feet above the sea-level, and has on the whole a good climate, the road opens out, and after crossing a small plateau descends very gradually until a *branch* of the once called Great Sham plain is reached. The whole of this plain could very easily be brought under cultivation, as the soil is rich and good, and excellent water could be obtained at no great distance from the surface (*Author's Official Report to Military Secretary, Government of India*). Major Wylie, C.S.I., Political Officer, Southern Afghanistan, remarks, "If it were not for Mari raids the Sham plain would be a fine country for the husbandman and shepherd; good water is reported within ten feet of the surface, the air is clear

\* No. II. (*Confidential*) Quartermaster-General's Department: Intelligence Branch, page 54.

† *Author's Report to Q. M. G's Department, Government of India.*

and bracing, and in summer the nights are said to be always cool and pleasant. The general elevation is about 2,500 feet above sea-level.\* Between this plain and the next encamping ground is seventeen miles, the Kope hill is crossed 3,200 feet above the sea. The inclination is about 1 in 15 at present, which might be eased off to 1 in 85 by keeping clear of lower ridge. The formation is of friable shale, the ascent 2,100 feet and descent 3,600 feet long; instead of coming down straight, the road could easily be brought down gradually left and right in a series of S-curves to a gradient of 1 in 150.† At the bottom the Bhor plain is reached 2,700 feet above the sea. Good water, fodder and wood in abundance. All this land is capable of being brought under cultivation; it is stoneless, and of rich alluvial deposit (Sir Robert Sandeman). It could easily be watered by artificial means from the stream which runs through it, if dams and weirs were made to hold the water up. The hill torrents have very rapid falls, so the water, unless it is caught, soon runs away.‡ Some remarkable specimens of fossil wood were discovered not far from this encamping ground in perfect layers, the grain of which was regular and well defined. A few were in sections of good size, showing that in some past age some of these hills, now so barren, were wooded, but only the valleys and plains are now green and show signs of vegetation. The sites of very extensive grave-yards, on almost every peak, pass, and gorge about here, prove that at one time the country must have been inhabited; but clan went against clan until they simply annihilated each other. Some of our Bilúch escort pointed out certain large grave-yards on one of the ranges as the sites of battles in which they and their fathers had taken part against the Maris and Luni-Puthans.

Across an easy rise of low hills we emerged into the Phylawah plain, 3,200 feet above the sea, extending over forty-five square miles, and watered by a perennial stream, with grass and fuel in abundance. It seemed a pity this fine valley should be allowed to lie waste. The air in April was clear and bracing, 35° at night and 74° in tent during the hottest time of the day. Between Phylawah plain and the Vitakri valley two ridges are crossed, and the Nam Su plain lies between, it stretches right and left for a very considerable

\* Quartermaster-General's Department, Intelligence Branch (*Confidential*) page 55, No. II.

† *Author's Reconnaissance Report.*

‡ *Ibid.*

distance, and has been roughly estimated at over 100 square miles\* in area; its elevation is about 3,000 feet above the sea. The soil is very rich and stoneless, and covered with excellent pastures, and the climate moderate and good (Quartermaster-General's Department, Intelligence Branch). The ridge from this plain leading into the Vitakri valley is at present very rough, but an easy gradient of 1 in 175 is to be found, by avoiding the "White Hills" and taking the course of the Kaha river at the base of the great limestone formation, bearing 314 (*Official Records*, vol. i. 27, 3).

We reached Vitakri without much trouble. The distance from Dera-Ghazi-Khan *viâ* Harrand is about 140 miles; the force only lost twelve camels, and not an accident happened on the road. Vitakri, or Lagári Barkhán, is about thirty miles long, and has an average width of twelve miles. It slopes considerably from the Han to where we entered it, which is only 1,918 feet above sea-level; is confined and very bare. It was this site which was chosen as a temporary cantonment in 1878, and which proved very unhealthy. I have been accused of misleading Government about Vitakri, and I should like to say here that, referring to my official reports submitted to Government, I did not advocate the *lowest*, but the *highest* site of Vitakri, as a cantonment for British troops, viz. at Nahr-ke-kote, where there is an old fortress and an excellent spring of water, some trees, and a good deal of cultivation. In April we found the weather very pleasant there, and the nights always cool. Nahr-ke-kote has an elevation of 3,175 feet above the sea, but there are infinitely better places even than this for a British garrison; but the lowest part of Vitakri was selected and proved a mistake. Government did not do wisely by keeping the troops in a place that was proved to be most unhealthy, and its action in withdrawing them altogether was more than an unwise step, it showed indecision and weakness.

The military and political officers of the frontier, who know the Tal-Chotiali route, agree that the bottom and tail end of the Vitakri plain is not of the smallest strategical importance and condemn it accordingly.†

An examination of the Han pass, the Jindhnan and Suleiman mountains, Mari and Sham plains, has shown us that the most desirable position would be the occupation of the Khetran valley, 3,590 feet above the sea, and which joins on to the higher

\* *Reconnaissance Report by the Author.*

† *Journal of the Royal Geographical Society*, May 1880, page 318.

part of the Vitakri valley. If the Tal-Chotiali route has to be kept open, and all the authorities agree that it ought to be, Haji-Kot, or Dada-Kot, would be the most central, commanding, and healthy site for a cantonment for British troops;\* besides, from a purely military point of view it would be of great strategical importance, for we could befriend the only industrious and agricultural race beyond our immediate border—the Khetrans, who are a docile tribe, very provident, and consequently the prey of the Maris and other roving bands of robbers who infest these hills. The Khetran valley is much higher and more open than Vitakri, the soil is rich, alluvial, and yields magnificent crops, trees are plentiful, and the water good and abundant. At this point we could command the Han pass, and render the Maris powerless, and so protect the whole of the country to the west and south. The Khetran valley is about 150 square miles in area, and the Rakni plain joins on to it at Chowatta, 4,150 feet above the sea.† The Rakni is a branch of the great Sham plain, and has, with minor valleys, an area of over 200 square miles. This is a magnificent bit of country, for the soil is excellent, and the whole might be brought under cultivation. The grass is very good, for the sheep and cattle which feed on it are known far and wide for the excellence of their meat. This would be a capital site for a large Government model farm. The horses bred by the Khetrans are hardy and of great reputation. This tribe have prayed our Government to protect them, and already many of their villages are deserted, the inhabitants have been killed, and their goods stolen. We have more reason to protect the Khetrans than any other tribe on our new frontier. By cantoning a small British force in this valley it would have the desired effect, and we could use Fort Munro, on the Suleiman hills, 6,758 feet above the sea, as a convalescent depôt for our sick soldiers. By the nearest route, Fort Munro is fifty miles from Dera-Ghazi-Khan, and the Han pass 100 miles. From Zeradan, at the foot of Fort Munro on the east side, the road is very steep and rough in places, but on the west, or the Rakni plain side, the road is less steep, although rough, but is capable of being greatly improved without much cost.‡ The climate of Fort Munro is simply perfect, the one drawback is a want of water, which a little engineering would soon overcome, and parks, gardens, forests and townships would soon come into

\* *Journal of the Royal Geographical Society*, May 1880, pp. 318 and 319.

† *General Sir M. Biddulph's Report*.

‡ *Author's Report to Quartermaster-General's Department*.

existence.\* There is a good fall of rain here during the moonsoon season, but it comes and goes, and leaves the place as dry as possible. After careful examination, taking levels, and other observations of the long slopes and higher valleys of Fort Munro, it was very clear that the whole formation of the upper portion of the hill was admirably adapted for a complete system of reservoirs.† A deep rocky ravine on the north side, with a bottom and sides of rock, could without much trouble, and at a trifling cost, be converted into a most spacious and perfect reservoir for water. This is within a short distance of the summit; but towards the south there is a regular basin formed out of the side hills, and by constructing a massive abutment at one end, with weir dams at the gorges, provided with proper hydraulic sluice-gates, at the rise, for surplus floods, an artificial lake, 4,200 feet long and 2,800 wide, might be constructed. The whole cost would be a lakh and a half. Water is all that is wanted at Fort Munro to convert it into the best as it is the healthiest of sanitariums in India.‡ Nature has been very bountiful, and carried out nine-tenths of the work for us.

From Hân pass to Chotiali is about fifty miles. The eastern entrance is half a mile long and 500 feet wide, and is a gap in the Jindhra mountains, which are very high, and across which there are not even foot-paths. This is, therefore, the key and gate of this route, and the only thoroughfare for kafilas and horsemen in these valleys. Passing through this entrance the pass opens out for about two miles wide, and is about three miles long; its western exit is only eighty feet wide and 500 feet long, and this gap runs through a slightly winding defile, the precipitous sides of which are composed of granite.§ The roadway follows the valley for some distance, and then crosses at intervals two ridges of low hills, over which the sappers made an easy gradient, but with this exception the route was open and good, and fit for the passage of all arms of the service. There is a famous perennial stream in the Hân pass, and water is plentiful at the three encamping grounds. Several spacious and magnificent valleys are crossed on the way to Chotiali—the Bala Dhaka plain, which is fifty-five square miles in area, and has an elevation of 4,100 feet; the Hannakai and Pine Katcha plains

\* See *Bombay Gazette*.

† *Author's Official Report*.

‡ *Ibid.*

§ Called by the people the Doze Drigh, or "The robber's leap." The pass here is 4,700 feet above the sea.—*Author's Reconnaissance Report*.

stretch almost without a break for twenty miles on either side of the line of march, and have an elevation of 5,500 feet above the sea. The Barmzai, Kúlú, and Chotiali plains have been estimated at 1,450 square miles in extent, and those lying between Chotiali and Tal are very considerable, and extend to the Black Mountain in the Luni country, and may be roughly estimated at 1,200 square miles.\* The whole of this country is open and good, watered by hill torrents and minor streams. At Chotiali, and three other places on the way to Tal, the streams are perennial.† Water is to be had at from ten to twenty feet in all these valleys. Chotiali is lower than Barmzai, being only 3,600 feet above the sea, but Tal has an elevation of 3,400. Chotiali belongs to the Tárin Pathans, and contains about 150 houses.‡ Wheat is grown, and supplies procurable.§ The place was once of considerable importance, but the Maris and Luni-Pathans have nearly destroyed the tribe. The road from Chotiali to Tal is fairly open and good, and through a cultivated country, passing a perennial stream. The forts of the Ushtáránis and Shadozais|| are midway. Bábár halted at Tal, and in his time it was a very influential commercial and political centre. Tal is surrounded by many forts belonging to the Tárins.¶ The climate of Tal is much milder than that of Rawul Pindee, and has the reputation of being very healthy.\*\* The nights are always cool and pleasant during the hottest months. The water is excellent and plentiful, and the whole of the surrounding valleys and plains are ready for the plough. The soil is rich, alluvial, and highly prolific. It is stoneless, and requires no clearing. I estimate that the land capable of being brought under cultivation in these higher plateaux between the Suleiman mountains and Tal-Chotiali is about 5,000 square miles. (See *Times* and *Pioneer*.)

General Sir Michael Biddulph marched from Kandahar, through Peshin and the Borai valley, to India in 1879, and Sir Robert Sandeman took the Surkhab route to Tal-Chotiali, where the force from India met him in April 1879. The former gallant and distinguished officer met with no opposition, and he passed through a very fine country, capable of being greatly developed. Speaking of the Togai valley, he says, "there are no difficulties to be encountered in the construction of a road for wheeled traffic, and Colonel Browne, C.S.I., R.E., and Political Officer, con-

\* *Official Report (Confidential).*

† *Author's Reconnaissance Report.*

‡ *Q. M. G.'s Confidential Report.*

§ *Ibid.*

|| *Official Report (Confidential).*

¶ *Royal Geographical Society's Journal.*

\*\* *Ibid.*

sidered that the turns were not too sharp for a railway."\* Sir Robert Sandeman, who saw my plans and observations, agreed that a line of railway was feasible to Tal, and could be made at a less cost than the Bolan railway. We discovered coal near Chotiali, Barmzai, Barnwalla, and to the south of the Black Mountain. Again, in the Chamarlang valley there is a good seam of coal, and two seams were found in the Jindhra mountains, near the junction of the Hân pass. Sir Robert Sandeman strongly recommended the opening out of the Tal-Chotiali route, and it is a well-known fact that he urged the Government to select this line for the railway instead of *viâ* the Bolan pass. (See *Bombay Gazette*.)

Not a glance at, but a study of the map will show the military and political reader the great strategical importance of permanently cantoning British troops at Tal, as a support to the Quetta garrison. We have various troops, as I said before, at Jacobabad Rajanpur, Dera-Ghazi-Khan, &c., which, if we occupied the Khetran valley and Tal, might be reduced in number and brought here. Such concentration and placement would cover and protect the Panjab and Scind frontiers much more effectually, owing to the nature of the country, than is done by our large number of posts scattered along our present extended frontier at the base of the Suleimans. An examination of this Tal valley has, moreover, shown that the position is for other reasons admirably situated in support of Quetta. In a northerly direction it flanks all the passes leading from Southern Afghanistan into the Panjab. In the south it flanks the Bolan pass, which can be entered from it in many directions.

It is the opinion of high military authorities that a permanent garrison at Tal, with supports at Chotiali, &c., is absolutely essential for the maintenance of communication between India and Southern Afghanistan.† It is the most direct and easiest route known, and presents no physical obstacles of any importance. The opening out of this route would affect the whole question of the distribution of troops, and the rectification of the British frontier in this direction.‡ The location of troops at Tal would do away with Rajanpur and Dera-Ghazi-Khan as military stations.§

The difficulties encountered in moving troops by rail from the Indus *viâ* Jacobabad to Sibi during the hot season are too

\* Royal Geographical Society's *Journal*. † *Official Report*.

‡ *Author's Report to Military Department, Government of India*.

§ *Ibid*.

well known, and under existing circumstances nothing can be done to improve the Bolan route.

The intense heat, bad water, no supplies, and deadly climate at certain seasons of the year are its chief characteristics. All these difficulties might be avoided if the Tal-Chotiali route was opened out. *An ultimate saving would result in military expenditure by its adoption.* Once it is made safe against roving bands of armed robbers, it must become the most important of the trading routes connecting Southern Afghanistan with India (*Sir R. Sandeman to Viceroy of India*).

The people who live at Tal—the Shadozais—gave us a hearty welcome, and implored our Political Officers to urge the Government to locate a force there, and befriend them as we have done the Lagáris. At present they live in fear of the Maris. They were formerly a very powerful tribe, with an army of 25,000; now their whole strength is only 7,000 and they can barely muster 2,000 fighting men.\*

If the Dera-Ghazi-Khan and Rajanpur garrisons were removed to Tal and the Khetran country, it would be worth while for Government to encourage our faithful and industrious subjects, the Sikhs, to emigrate from the over-populated districts of Loodianah, Amritzar, Buthala, Amballa, &c. to the Tal-Chotiali wastes, by granting each suitable agriculturist say 100 acres of this good land, free. The sturdy Goorkha and independent Rajpoot might be given the same opportunities of obtaining these grants of waste lands. By disarming the Maris and rendering them powerless, the chances are that they would follow in the steps of the Lagáris, and become well-to-do agriculturists and obedient to the law, giving our Government no trouble, but proving a source of strength to our rule. By joining an invading force, the Lagáris, have everything to lose, and nothing to gain, whereas the Maris, Kakars, and Luni-Puthans have everything to gain, and nothing to lose. Once a people settle down as peaceable agriculturists, as the Sikhs have done, they become a tower of strength to the ruling Government, and will never throw in their lot with insurrectionists and invaders.

The British Government has an opportunity of developing a great and powerful province in the vicinity of Tal, by encouraging the Sikhs, Panjabis, Rajpoots, and Goorkhas to emigrate to these plateaux, and granting them plots of land. There are

\* *Official Report.*

about 5,000 square miles of land to the east, 3,000 to the north, and 7,500 to the west and south of Tal,\* which might all be utilised and brought under cultivation. All these plateaux lie on the principal route between Khorássán and British India. A colony composed of the above races would be a magnificent protection between India and an invader, and in times of emergency we might, as we do now, draw some of our best and most loyal soldiers from these races. The Maris would never attack such warlike agriculturists as the Sikhs, and once cleared of marauders who have by their depredations diverted commerce from its former channel into more circuitous but safer paths, this route would doubtless become, as it formerly was, the chief road for trading caravans from India to the heart of Central Asia.

Colonel Malleon, the able historian, in his highly instructive lecture lately published on *Kandahár*, alludes to the magnificent plain below Dádar and east of the Bolan, upon which the invader could rest at ease, until he should decide the point of the Indus upon which to direct his attack. But I venture to think that the invader could rest with even greater security in the Tal-Chotiali country, and that in a far better climate, where the water is plentiful and good, and forage (an important item in Afghanistan) in abundance. He could replenish his supplies, recoup his strength and resources, and pour his army through the ninety-two passes (alluded to in the official report) which pierce the Suleiman range in the Dera-Ghazi-Khan district. From Tal there are roads to the Bolan, Quetta, Peshin, Kelat-i-Ghilzi, Ghuzni, and Kandahár. Sir Robert Sandeman has been over nearly all of them himself, and he reports that they are all open, that they lie through an easy country, and are accessible at all seasons of the year. It is very clear, therefore, that Tal, from a military point of view, is a position of the greatest strategical importance, and as Bábár in 1505 used it, so will other invaders. The handful of men at Tal, Chotiali, and the Khetrans—peaceable agriculturalists—would gladly welcome the mild and just rule of our Government. Under British control the Maris, Kakars, &c. would soon cheerfully acknowledge us, in return for protection to life and security to property. A sound strong Government thus established would be a positive advantage, not only to ourselves, but to the people of Bilúchistan and the wild turbulent tribes of the various unscientific frontiers.

Tal, as I have mentioned before, would be a great improvement on the present frontier stations of Jacobabad, Dera-Ghazi-Khan,

\* *Reconnaissance Report.*

and Rajanpur, all of which it would supersede. The temperature in the hot weather is milder by nearly 20°, and with men like Edwardes, Nicholson, Jacob, Abbott and Lumsden, it would soon become one of the most favourite stations in Upper India.

Government model farms and depôts might be constructed in some of the best valleys, and mules, hill ponies, and cattle bred for transport and commissariat purposes.

The grass of these plateaux is most excellent, and possesses highly nutritious properties unknown in India (*vide* Bengal A, and Hor. Soc. Report). The doomba sheep of these hills is quite equal in size to the finest gram-fed sheep of the plains, and the fiesh is infinitely sweeter and more tender, resembling in fact the English South Down. The same can be said of the ox. Breeding establishments for stud purposes might be set on foot, and would prove a source of great benefit to Government. The Tal-Chotiali district could then supply the Panjab and Scind with wheat during times of famine.

Under a wise and proper administration this rich country would become one of the most prosperous and thriving provinces in the East; but even if it were not a financial success, it is absolutely necessary for the better protection of the frontier that it should be permanently included under British rule.

## PART II.

SINCE my first article, advocating the Tal-Chotiali route, appeared in the April number of the *Army and Navy Magazine*, it has been announced that the Government have chosen that route for the return of our troops from Kandahar.\* Does this mean that the Bolan route, on which so many millions have been expended, has been proved a mistake? And is the Jacobabad and Sibi Railway, the supposed vast importance of which has lately been so prominently brought forward, to be included amongst our blunders in Afghanistan?

Káchi, or Kach Gandáva, through which the Sibi Railway runs, is described in the *confidential* papers of Government, as “a deadly desert.” The climate in summer is “awful; unfit for Europeans; subject to the phenomenon of *bád-i-simúm*, a desert blast, which, travelling in narrow currents, ‘cuts like a knife,’ and destroys life in every form it encounters.” In winter the climate is temperate, and at that season the Khan of Khelat and the wealthy Brahuís, as well as the Rind Bilúchis, resort to it to escape from the rigorous cold of the highlands.†

\* *The Times*.

† *Lockhart's Gazetteer*.

The principal characteristics of the province, then, are its extent of level surface, its excessively sultry climate, and its scarcity of water for all purposes.\* The climate, already unfavourably mentioned, is most noxious from April to August, during which time travelling is attended with great risk, not only from the hot winds, but from the deadly emanations from the heated soil. With regard to *bád-i-simúm*, i.e. "the blast of death," which prevails from the middle of March to sometimes late in September, it is described as follows in No. II. Quarter-master General's Department, Intelligence Branch, *Confidential*.

- "1st. It is sudden in its attack.
- "2nd. It is sometimes preceded by a cold current of air.
- "3rd. It occurs in the hot months (worse in June and July).
- "4th. It takes place by night as well as by day.
- "5th. Its course is straight and defined.
- "6th. Its passage leaves a narrow track.
- "7th. It burns up or destroys the vitality of animal and vegetable existence in its path.
- "8th. It is attended by a well-marked sulphurous odour.
- "9th. It resembles the blast of a furnace, and the current of air is greatly heated.
- "10th. It is not accompanied by dust, thunder, or lightning."

The natives say of this desert country, "*Khúdá né is jhager chordír*"—"God has let go His hold of this place," or as we say, "A God-forsaken country."

The Káchi desert lies within the rainless region,† but occasionally, when great atmospheric disturbances take place during the monsoon season, the storm currents from the east and west meet, and break with terrific fury in the Takari (Bráhuick) Sibi Hálá and Mari hills, when the Nari Lhári and other rivers become quite impassable, and the floods and turbulent streams run through the desert, sweeping everything before the rush, and join the waters of the Indus.‡ Of course such a thing as the desert being partially flooded happens very

\* Intelligence Department (*confidential*).

† "Savage inaccessible rock mountains, great grim deserts, alternating with beautiful strips of verdure; wherever water is there is greenness beauty: odoriferous balm shrubs, date trees, frankincense trees. Consider that wide waste horizon of sand, empty, silent, like a sand-sea, dividing habitable place from habitable. You are all alone there, left alone with the Universe; by day a fierce sun blazing down on it with intolerable radiance; by night the great deep Heaven with its stars."—*Thomas Carlyle*.

‡ *Confidential Report*.

seldom—not once in half a dozen years—but there is always the risk of the railway in places being carried away. Hughes says: “If there is not a flood, water is obtained with difficulty during the cool season from wells of great depth. In the summer months this tract is almost impassable, from the absence of water and the prevalence at that season of deadly hot winds.” “The heat of the Bolan is most injurious to Europeans, and Dádar and Sibi are not only very unhealthy in the summer, but the water is so bad as to produce fevers and Asiatic cholera.”\*

The Bolan route and Sibi Railway can only be used in the winter months; in times of war or emergency we cannot depend on it. It would be the height of rashness to send troops by this line in summer. Our casualties and losses would be enormous, and far greater than in any campaign. Besides, there can be no doubt that, owing to the peculiarity of the whole alignment of the country, the great distance apart of the stations, the impossibility of defending the line of railway in a desert, utterly cut off from all communications, it could very easily be rendered perfectly useless in a few minutes, at half a dozen points, by a band of determined men, which would render the whole line of railway impassable for months.†

It requires but little military, engineering, or political knowledge to see that for strategical purposes the Jacobabad and Sibi line of railway is *de facto* useless. Reflecting minds have not wasted their time in protests against incontestable facts. The Government of India, and the highly paid and so called scientific advisers of the Public Works Department have added one more gigantic blunder to their long roll of egregious mistakes,‡ costing the State millions of money for a folly that will not redound to the credit of the Indian Military Engineers. Will a long-suffering Home Government call for no explanation of this and other profound errors, committed by visionary amateurs? Is the Indian Exchequer to be continually drained to supply money for unproductive State Railways, canals, fruitless wars, and the fancies and hobbies of impulsive administrators, who have risen by accident to power and command? §

Since writing my last article recommending the opening out of the Tal-Chotiali route in lieu of the Sibi and Bolan one, I have had a number of letters from distinguished military and political officers, members of the past and present Government,

\* Confidential Report.

† Author's Report to Government of India.

‡ The Pioneer.

§ Ibid.

peers, and several M.P.'s on both sides of the House, agreeing on the whole with my proposals. Some well known and distinguished men, unbiassed by party politics, have been good enough to study and criticise certain strategical and engineering points of the basis of my formulæ propounded in the former article, and I shall endeavour to answer those criticisms.

To be brief, my views in a condensed form are as follows:—Constitute Multan a garrison of the first order, and make it the direct military base for all operations in Southern Afghanistan and Belúchistan; link the Chinab with the Indus at Dera-Ghazi-Khan, by a navigable canal, the cost of which would be £40,000, and so place Múltan in direct communication with the present Indus frontier at all seasons of the year. A line of railway from Dera-Ghazi-Khan to Tal Chotiali *viâ* the Chachâr pass, could be constructed very economically\* as there are *de facto* no engineering obstacles whatever along this alignment of country. The distance from Múltan cantonment to the Indus is about 45 miles, and from this point to Tal-Chotiali about 200, or, in all, under 250 miles. What is wanted, and what strategists of the highest repute advocate and insist upon as being absolutely necessary, is the possession of a *point d'appui* in Southern Afghanistan, to be held independently of any Amír of Kabul, Khan of Khelat, or other petty chieftain. THE OCCUPATION OF TAL WOULD CAUSE NO JEALOUSY—IT IS NEUTRAL GROUND. IT IS A GRAND CENTRAL POINT. It lies about midway between the military frontier station of Dera-Ghazi-Khan and Peshin. It is situated on a high plateau, 3,600 feet above the sea, in a country broken by hills, valleys, and extensive plains, with a rich soil watered by perennial streams, and a climate considerably lower in temperature than that of any of our military stations west of the Indus.† Strategically I have shown how Tal-Chotiali commands all the passes flanking the Bolan‡ and the chief trading routes between Khorássán, Southern Afghanistan, and British India. In addition to the arguments in favour of Tal-Chotiali as a military station, there is the indisputable fact that if we did occupy it we could reduce our present extended frontier stations and outposts along the base of the Suleiman mountains and west of the Indus, all of which are hot and unhealthy. This would lead to a very considerable reduction in the present military expenditure, which, in itself, ought to induce our legis-

\* Sir Robert Sandeman.

† *Whitehall Review*.

‡ *The Globe*.

lators and economists to carry out such a plan.\* The Tal Chotali province contains coal and is rich in minerals. By cantoning British troops at this point, and permanently bringing it under our rule, a rich agricultural district would soon be developed, and the various turbulent tribes who live entirely by marauding and highway robbery, would follow the example of their now peaceable brethren,† the Lágháris, Mazáris, Búgtis, Kosas Gurchánis, Lúnds, Drishaks, and Khetrans, who, under the influence of such political officers as Sir Robert Sandeman, Mr. F. W. R. Fryer, Mr. R. I. Bruce, Major Wylie, and others, have become staunch, loyal, and true friends of the British Government, and obedient to the law.‡ What all who have the real interest of the country at heart, the development of our great Indian empire, and the peace and prosperity of our north-west frontier should urge is this—That when we withdraw from Kandahar it is of the most vital importance that some great frontier cantonment should be selected as a *point d'appui*, and that Tal-Chotali should be the spot from a political, a military, a strategic, an engineering, and a commercial point of view. As a very humble individual who has spent several years on the frontier, and knows the people and the country, I beg most respectfully to be the instrument of laying this statement of facts before the Government, who are now deciding the matter as to the rectification of the frontier, and the location of British troops in Southern Afghanistan and Bílúchistán; and earnestly hope that they may carefully weigh and consider this important matter.

The temperature of Fort Munro and the higher parts of the Suleiman mountains is almost perfect, and the climate dry, bracing, and highly invigorating.§ It lies beyond the influence of the great monsoon or equinoctial current, and consequently

\* Official Report to Government of India.

† I made this statement about the Bozdárs in a letter to *The Times* of the 9th of April last, and someone, who wrote anonymously, said in reply a few days later that he was "startled at hearing such a theory, which would certainly not meet with the favour of economists." To those who know, and have recently served on our Indian frontier, the idea of giving employment to the border tribes can hardly cause surprise, as we have already adopted this plan most successfully with some of the tribes—the Legháris, for instance—and the revenue reports show the financial advantages derived by Government from encouraging the once turbulent clans to adopt honest civilised habits. In speaking of the Bozdárs, I did so after six years' frontier experience, and having employed them as Barkundazis to escort Government treasure, and also as overseers to superintend important public works, and I always found them honest and faithful.

‡ Confidential Intelligence Department.

§ *The Pioneer*.

has no regular rains nor storms. The sky in the direction of Scind is frequently overcast, and heavy black clouds roll over the Suleimans only to break and disperse as they travel north.\* There is more rain at Tal and Chotiali than anywhere else along the entire route.† Why is the rainfall on the whole so trifling throughout these bare mountainous regions of Southern Afghanistan and Bilúchistán? I maintain that without abundant vegetation and forests, the laws of nature are frustrated; and although the heavens may be charged with watery clouds, not a drop of rain will fall unless there are ample forests and cultivation to perform the laws which govern attraction. There are no trees to be seen throughout these regions but a few stunted wild olive (*olea Europæa*), tamarisk, and acacia shrubs.‡ Great zeal has been displayed by Mr. C. E. Gladstone, D.C., in encouraging the natives to plant trees along the base of the Suleimans and west of the Indus, and the saying on the frontier is that he is as fond of planting trees as his distinguished kinsman is of cutting them down.

The Panjab Government tried an experiment at Chunger Munger, near Lahore, of planting a forest of trees. The result has been that in twelve years the rainfall has considerably increased in that vicinity, and thereby greatly reduced the temperature.§

There can be no doubt, therefore, that if the good work of planting trees || be largely carried out in the Dera-Ghazi-Khan district, and *en route* to Tal, that water which is at hand will bring vegetation and cultivation, vegetation and trees will bring rain, and the frontier in time will have as great a rainfall, and as moderate a climate as other regions lying in the same parallels of latitude.

I have been asked, why not adopt the more direct route from Dera-Ghazi-Khan to the Han by taking either the Fort Munro or Sakhi Sawar pass? The Fort Munro route, as I have already suggested to Government, is quite practicable for laden camels, and by diverting the road in places and choosing the most advantageous contours and general alignment of the

\* *The Times*.

† *The Civil and Military Gazette of India*.

‡ *The Pioneer*.

§ *The Civil and Military Gazette*.

|| "I am not surprised that the ancients worshipped trees . . . sylvan scenery never palls."—*Lord Beaconsfield*.

"The Hindus worship trees to this day."—*Lord Northbrook*.

Zeradan valley, a far better road than the present one can be constructed with easier gradients, and less sharp concave and convex curves. But under the most favourable circumstances it can only be classed as an auxiliary military road, for the altitude of 6700 feet less 2300 feet equal 4400 feet has to be overcome in a horizontal distance of about 50,000 feet, or equivalent to about 1 in 11, which is a terribly stiff inclination.

The Sakhi Sawar pass presents considerably less obstacles than this, but it would be a very costly line for a railway—requiring some tunnelling, two viaducts, several bridges, much blasting of rock, heavy embankments, and deep cuttings. By judicious alignment an average gradient of 1 in 85 is to be found, but this line although nearer to the Han, from Dera-Ghazi-Khan, than the Chachár pass, could not be constructed under three times the cost. For a line of railway a saving of eight miles in a hundred is after all of no great consequence, particularly when the extra cost would be so enormous. The water, moreover, on this line is not always so plentiful or good as *viâ* the Chachár pass; but for trading purposes and keeping open the various routes it might be advisable hereafter to improve it for kafilas and caravans. I have already said that Vitakri as a cantonment was a mistake.\* A military outpost, however, west of the Han on an elevated site in the Khetran country, where good water is procurable, would be advisable, as commanding the entrance of the Han, and where many passes converge. The narrow roadway through the Han is practicably level, and if there was a diversion made, there are no engineering obstacles in the way for a line of railway from this point to the proposed frontier station of Tal-Chotiali. I do not know whether it is proposed to abandon or to retain Quetta, but I suppose we shall keep it as so much money has been spent on barracks, roads, fortifications, &c.† It appears to me, however, that Tal would in every respect be more suitable ‡ as the principal military depôt in Southern Afghanistan, for it better commands all the chief trading routes between Khorássán and the Sind and Panjab frontiers; its communications with our military base at Múltan, from which, unlike Quetta, it is not separated by a desert, are immeasurably superior, more direct, through a fertile easy country, and in the event of any great emergency, safer, as it is so situated that if held no enemy could possibly

\* Royal Geographical Proceedings.

† *The Standard*.

‡ These views are held by Mr. Richard Temple, B.S.C., Panjab.

advance *viâ* Quetta and Sibi towards the Indus without the risk of being taken in flank. In that direction, I think Jacobabad is our proper frontier station, being effectually protected by the desert which acts as its natural glacis, and over which anyone must pass before entering it.\* Except for the maintenance of Quetta, I was never able to see the advantage of the Bolan Railway project, and under the most favourable circumstances, all frontier officers now agree that it can only be used during the winter months; nor is it ever likely to pay, but always remain a burden on the Indian exchequer. Less than half the money spent on the Bolan railway would have constructed the railway between Dera-Ghazi-Khan and Tal-Chotiali, and there can be little doubt of its being more serviceable both from a military and commercial point of view.†

It is quite impossible to record accurately the boundaries of our territory, and of Afghanistan and Bîlûchistân,‡ for the maps published by the Government of India a short time ago included Tal and Chotiali in Bîlûchistân, and the Jindhra range was the border line; now the maps published by the authority of the India Office show that Tal-Chotiali is outside the boundary assigned to Bîlûchistân, and so Sir Charles Dilke's speech in the House of Commons in answer to Mr. E. Stanhope's motion, might have referred to either the maps of the Government of India, or those now published by the India Office.

I think it will be admitted from a purely military point of view that to collect the fractions of our forces now scattered along the base of the Suleimans, and concentrate them at a highly strategical point, at the same time improving and providing secure communication with the base, is sound in theory and practice.

Quetta is conveniently placed as regards Khelat, from which it is distant eighty-eight miles; it is 5,600 feet above the sea-level. The climate is pleasant, the heat being tempered by cool breezes from the lofty hills which on all sides surround the valley. There are numerous gardens and orchards in the suburbs, and the water-supply is very good. But the situation of Quetta is somewhat isolated§ and off the direct route.|| The roads leading to it and from it are rough, steep, and severe.¶ The Khojak

\* Sir William Merewether.

† Punjab Government.

‡ Sir Michael Biddulph, K.C.B.

§ Lockhart.

|| Lyall.

¶ Phayre.

route is considered a very bad one\* in times of emergency, for in some places it is so narrow that only men abreast can pass, and this terribly delays the passage of an army.† Besides we know that General Phayre took longer to march from Quetta to Kandahar than Sir Frederick Roberts did from Kabul, double the distance, with double the force, and through a hostile country. There can be no doubt that an infinitely better road can be made from Tal to Kandahar than from Quetta.‡ The Khojak and other higher ranges are blocked with snow during the winter, but by the recent surveys there appears to be an old kafila route for caravans (which of late years has been abandoned owing to the depredations of the robber tribes in that vicinity) which passes through the more open plateaux to the north of the Khojak Amran range, where the average level of the country is about 3,500 feet above the sea, the passes under 5,000 feet elevation and perfectly easy for all arms of the service including wheeled artillery; the gradients very gentle and no sharp curves. This road could be remodelled at no great cost, and must in time be the direct route from Tal and Peshin to Kandahar.§ From Gwal, which rests on the slope of the Jhur range in an open vale, and lies at the exit of the old caravan road through the Samarcand defile,|| is another route leading to the one alluded to by Major Showers. That distinguished officer General Sir Michael Biddulph says, "That the maps of this part of Afghanistan supplied by the Surveyor-General of India were defective, showing that there was much to explore and many errors to correct." The framework of the plains of the basin of the Lora is grafted on to a spur of the Safaid-Koh, which is itself an off-shoot of the Hindu Kush. This spur has been styled the Western Suleiman, and traced as a continuous marked feature. Takatu is joined on to Zarghun and Murdar by a low ridge in which occur two depressions, the Sura Khwulla and Hunna passes. Here, in the first pass, is the water-parting of the Shalkot water and that of the Kakar Lora. In the Hunna gap the waters flow on one side to the Shalkot Lora, and on the other towards Sibi. All these water partings are camel tracks, and to the north leading from

\* Hughes.

† Sir D. Stewart.

‡ Sir William Merewether.

§ Major Howe Showers' Report.

|| General Sir Michael Biddulph's lecture in *Proceedings of the Royal Geographical Society*, April 1880.

Shalkot through the Peshin valley there is a perfect network of kafila routes along the beds of all the nullahs. These routes, therefore, can only be used in the dry season, but from Khush dil Khan, the survey officers report that the roads generally lie clear of river-beds, as may be seen in the Chagi, Maudan, Chinar, Tabin, and Ferakhi districts. From the slopes of the Surghwand the rainfall flows in four directions, towards Dera Ismail Khan, the Kachi plain, *viâ* Borai and Sibi by way of the Tal country, and back by the Sistan desert *viâ* Peshin.\* Sir Michael Biddulph, who commanded the Tal-Chotiali Field Force, reported as follows:—"In following the Kakar Lora and the Surkhab to their several sources, we ascertained and defined the limits of the Lora or Peshin basin, and became acquainted with three passes and roads leading towards India. Up to the time we left Peshin no one had explored the upper portion of the Barshor river. Up this valley a road to Ghazni leads, and it was used by our troops in the old wars." Colonel H. Moore explored the Toba plateau. A road to Ghazni could be traced over a plain, which stretched for miles, bounded by low hills to the north, and a track led to the Kadanai plains and on to Kandahar. These extensive plateaux fill up the whole mass of the angle from here to the Khoja Amran. They are the summer camping-grounds of the Kakars and Achakzais, and Sir Michael Biddulph thought the elevation of 7,500 feet would afford a suitable sanitarium for our troops.

The route selected by Sir Robert Sandeman was up the eastern branch of the Surkhab, which leads direct on the Surghwand peak. The track lay across the plain gradually rising up the mountain skirt, and entering the low hills by an open passage. General Sir Michael Biddulph, in his very able and elaborate report, says, "There appears to be no physical difficulty in following the valley. The road winds up the valley, crossing and recrossing the stream; hamlets of the Yusuf-Kach (Isaf-Kach) settlement are passed, cultivated plateaux, fruit and willow groves, with houses roofed with timber and grass. We encamped in an amphitheatre on a sloping field which is well covered with grass, and altogether there is abundant vegetation very gratifying to the eye." At Ushtirrah Sirra is the water-parting of the Surkhab which flows to Peshin, the head of a drainage which eventually reaches the Nara or Sibi stream, five miles west of the pass; the valley is met from the east by others

\* *Proceedings Royal Geographical Society*, April 1880.

opening on each other, and hemmed in on the south by the massive ridges of Mazwah and Spinskhar. The combined stream escapes south and is called Lehgut. The pass of Momandgai is five miles from junction, and its elevation is 8,457 feet. The rainfall is here divided into the Borai valley, which runs without a break by a uniform slope for eighty-two miles about, due east. These highlands are highly picturesque, particularly between the two passes. Mazwah and Spinskhar rise abruptly into grand rugged forms, having their lower slopes gracefully disposed and varied with a growth of cypress and other trees and shrubs. Nowhere was there seen such luxuriant growth as in this valley. Momandgai is the division between Khorássán and India, and also between the Panizai and Dumar sections of the Kakar tribe. The valley eastward falls and loses its beauty. At Obushtkai, eight and a half miles from the pass, the ridges are far apart, and at Chimjan, five and a half miles further on, the plains are reached. Three miles east of Chimjan stands a remarkable table-mountain, called Siazgai, which rises well out of the plain, and forms a natural fortress. On its summit there was in the old times a fortified post, which is said to have been held by the Moguls. Remains of tanks, cultivation, and ruined walls still exist. Sir Michael Biddulph was of opinion that this hill might be utilised by us as a military outpost. There is cultivation at Chimjan, and the fruit-trees and fields present a refreshing contrast to the wild hills and plains. Siazgai stands out in noble proportions as the chief object in this strange but grand landscape. The off-shoot from the so-called Western Suleimans lies to the north of the Borai valley and divides it from Zhob. Another parallel limb separates Borai from Smalan,\* Tal, and Chotiali. Thus three great

\* The Smalan valley is a perfect oasis. About five miles clear of gorge Major Lorne-Campbell's little rearguard action took place. The valley extends east and west from the Khwast, through which flows the Sibi water, whose sources pass Cherri Mooman. The Sinjawi is thirty miles long, and the whole of it under cultivation. Ample supplies procurable. Baghar is eleven and a half miles, follows bed of stream which falls into the Smalan river two miles below Sinjawi, and at five turns south through gorge in high hills which ends valley southwards; here Sirkarra is entered, and turns east, follows river to Baghar. The valley is narrow and enclosed by precipitous hills; wild pig, ibex, sisi, chikor, &c. abound. The Bhorí Pathans, about 6,000 in number, attacked the camp on 24th March, and were repulsed with a loss of 600 killed and an unknown number wounded; our loss was one killed and four wounded. The 1st Panjab Infantry under Colonel Keen, C.B., greatly distinguished itself. The enemy fled to the hills pursued by the 8th Bengal Cavalry and the 1st Pathans (Coke's Rifles). *On reaching the summit they became a grand mark for Wace's mountain guns and Coke's Rifles.* The hills were so steep that the enemy's fire

valleys have their origin in the highlands east of Peshin, and are so situated as to offer a choice of routes for the opening out and development of these magnificent prolific plateaux. Well might our general, Sir Michael Biddulph, remark, after his highly successful and interesting march, *We never could have anticipated that this hitherto unexplored country would prove to be laid out so favourably for the routes we were in search of.\**

The lower portion of Borai is well watered, with well-built villages close together; orchards peep above the enclosures, and fields extend from village to village. The fertile portion of the valley stretches from Ningand to Sharan and Chinai. The bounding ridge between Borai and Zhob has a most strange physical character. It is a huge glacis, or whale's back, having cross parallel ridges on its surface, which are disposed like cross waves on an ocean swell. They lie N.E. and S.W. There are wide gaps between the ridges, and open passes into Zhob. The Borai valley has a length of 100 miles by an average of 8 wide. The western Borai stream is called the Lorai, and the eastern valley Sahau; the two meet in the Anumbar gap, the sides of which are grand masses, and are very abrupt. The west hill is called Khru, the east Guddibar. The Zhob valley is broader than that of Borai, and its outlet is towards the Galeri river. Due east from Sharan there lies an elevated plateau, to which the plains of Zhob and Borai extend; Sir Michael Biddulph thinks that the Zhob valley cannot therefore, as represented in the recent edition of *Walker's Map of Turkestan*, find an exit through the Suleimans. The so-called Sahara plain can be seen from the top of the Suleimans at Fort Munro, and the Rakni plain meets it.

The gap of the Anumbar is a most important feature. By it General Biddulph's force was able to take the exact route laid down, without attempting a more northerly, and possibly a more complicated line of country. Emerging from the Anumbar gorge the Luni country is entered, which is spacious, level, and cultivated. The valley inclines towards the south-west, and abuts on the Tal-Chotiali valley. The catchment area basin of this vast system of spacious valleys and magnificent prairies, meadows, and plateaux is a very remarkable feature of the

failed, and the stones and rocks that were hurled at our men generally bounded harmlessly down the ravines. This engagement was not altogether unlike the recent unfortunate Majuba hill affair in South Africa, in which the brave but injudicious general Sir G. P. Colley sacrificed his life.

\* Sir Michael Biddulph's lecture before the Royal Geographical Society, February 19th, 1880.

natural formation of the country, as are here collected those mighty floods, alluded to on pages 19 and 20, which have occasionally swept over the Kachi plains,\* the line chosen for the Sibi and Bolan Railway.

The country from Anumber down to Chotiali is easy and open, and is infinitely preferable to the route taken for exploring purposes *viâ* Trikh, Chimalang, and Bala Dhaka. The country which lies between the Luni country and the Han is uninhabited. It is overrun by robber tribes, and no man's life is safe. Some of General Biddulph's men dawdled behind the column at Bala Dhaka, and when we came up a few hours afterwards we found these poor fellows frightfully cut to pieces. One wretched man had his arms and legs cut off, and he lived for nearly a day afterwards. Although the rascals were hiding in the rocks by the wayside we could not find them. This, however, was the only instance of these robbers attacking our columns.

There are two valleys lying north-east and south-west, the Chimalang and the Bala Dhaka. They are bounded by three ridges; of these the last, the Jindhnan, is a long and formidable feature, and the only practicable path through it is by the Han pass.†

In alluding to the march of the Tal Chotiali Field Force in 1879, General Sir Henry Rawlinson, that noted Oriental scholar, linguist, diplomatist, soldier, and geographer, says the Tal-Chotiali country was in times comparatively ancient, namely, during the early Mahomedan period, a district of great wealth and consideration; it included Peshin, and took in all the western skirts of the hills. It was called *Bálísh* or *Válísh*, from a tribe of Turks who in the ninth or tenth century passed from the vicinity of Ghazni and colonised the country in question. They left their name in the district of Malisan, near Ghazni, where it remains to the present day. They built several important towns, and for two or three hundred years maintained a certain degree of celebrity. Their name has since vanished, and the towns which they founded are in ruins. They held Quetta, which was called, as now, *Shal*. The ruins in the Peshin, Zhob, Borai, and Tal-Chotiali valleys should be excavated. There is a grand field here for the antiquarian in the archæological remains of lost cities and a lost nation.

Sir William Merewether, in speaking of the communication

\* *Proceedings Royal Geographical Society.*

† General Sir Michael Biddulph's Lecture before the Royal Geographical Society.

between the Peshin valley and India, said that the Tal-Chotiali Field Force had explored a region of the greatest importance. It was formerly well known as the easiest and best of routes between Central Asia and India. In earlier times the capital of the empire of Hindustan was Delhi, and naturally the products of Central Asia followed the shortest and best possible route to reach that city, through Dera-Ghazi-Khan to Multan, and so on to Delhi. "The disadvantages of the Bolan," wrote that great authority, "were, that when the water rose it might come down with excessive force and carry everything away. I spent one year at Sibi," Sir William adds, "and I can safely say it was the hottest place I was ever in, and I never wish to see any large body of people placed there. An old proverb about Sibi was, that so long as it was in existence there was no necessity for any hotter place. It would, therefore, be the worst spot to which to consign Europeans." May the Government pay some attention to these facts. In his speech at the Royal Geographical Society, Colonel (now Sir C.) Macgregor, dwelt upon our lamentable ignorance of Afghan geography. He said that the Tal-Chotiali country, Zhob and Borai valleys, were almost to us as sealed books, and that he had made a list of seventeen important military routes from Afghanistan to our frontier, of which we have not sufficient information to enable our Government to form a sound opinion respecting their merits. He added *that in an advance on Kandahar we should probably use the Bolan pass, but only because we do not know any other sufficiently well.*

Referring to the *Bombay Gazette* of September 1879. They review at length the two routes, by way of Tal and the Bolan; and in their issue of the 19th September they publish a telegram as follows:—"Sir Robert Sandeman considers the Tal-Chotiali route the better one for the railway." How was it, then, that the opinion of the highest political officer of the Crown in Afghanistan and BÍlúchistán was not accepted by the Government of India?

Whilst writing this, fresh telegrams from India inform us that the authorities at Simla have changed their minds and countermanded the orders they gave about the troops returning from Kandahar *viâ* Tal-Chotiali. Some will halt at Peshin and Quetta, a few may go to Tal, but the return will be made by the Sibi Railway.

If this order be carried out, I venture to predict that fifty per cent of our gallant soldiers will, at this deadly season of the year in the Kachi desert, reach Jacobabad either dead or *hors de*

*combat*, and unfit for further service. It is to be hoped, therefore, that before it is too late the Government will rescind this order, and seek the advice of some of their ablest officers and tried veterans of the Crown.

The Government of India have submitted a scheme for the retention of Peshin and the Tal and Chotiali province. The country they wish to include under British rule is the same I showed in my map of Southern Afghanistan, published last month, as, in my opinion, the most desirable frontier line; it includes the Khoja Amran range,\* the Toba plateau, the Peshin valley, the Zhob and Tal-Chotiali province, and the Khojak pass, with Chaman as the extreme military outpost in that direction. I think Tal-Chotiali would make a better capital for the new province than Quetta, for the simple reason that it is more central and commanding, and nearer our base. It would be as well to have military outposts on all the principal roads between the Khojak and Quetta at Khushdilkhan, Killa Abdullah Khan, Gulistan Karez, Dinar Karez, Kach, Chappar, Sharigh, Harnai, Spintangi, Gundakinduff, Nari-Gorge, and Sibi. Some of these more unhealthy parts should be garrisoned by the people of the country under their chiefs, as they have throughout the campaign been very loyal to our cause, and we have had ample proof of their faithfulness in escorting treasure and convoys to the front; we might, therefore, trust them to guard military posts, and keep open the lines of communications.†

It would be a great boon if, during the ensuing cold weather, Government would take up the permanent way laid down in the Kachi desert, and transfer it to Dera-Ghazi-Khan for the railway to Tal-Chotiali. In the *Times* of the 18th April, the Calcutta correspondent makes the same statement as I made in the previous number of the *Army and Navy Magazine*, of the great importance of keeping the troops thoroughly equipped with transport, so that we can march on and seize Kandahar whenever necessary. I have shown that the Tal-Chotiali country is admirably adapted for government model farms and depôts where mules, hill ponies, and cattle can be bred for all transport and commissariat purposes.

Before we abandon Kandahar, it would be as well to raze the whole of the fortifications in and about that place. The citadel has always been a bone of contention with the legion of military

\* The portion of Afghanistan east of the Khoja Amran range was assigned to British rule, *vide* Treaty of Gundamak.

† Sir Robert Sandeman.

adventurers who, like Ayoob Khan and others, have been continually fighting for it. The people of Kandahar are keenly alive to the benefits of peace, and are quiet agriculturists. When these adventurers from the north sweep down with their armies to seize Kandahar, the unfortunate cultivators suffer great hardships. As long as Kandahar stands as it is, it will remain in a chronic state of tumult. The Kandaharese hate the Kabulese, who have always terribly oppressed them, and rather than submit to the Kabul yoke, they would gladly have been ruled by the Khan of Khelat, in which case Kandahar would have been included in the kingdom of Bílúchistán.\*

The supposed late boundary between Khelat and Afghanistan runs diagonally from a little north of Kujlak, leaving that place in Bílúchistán, and Julobghir, and Mehtarzai in Afghanistan. The Kakar and Shalkot Loras approach each other near Julobghir and Mehtarzai, between which is fairly level country. The left bank of the Shalkot stream has cut into the projections of the Anjerim, and Kakar Lora has on its right bank scarped those of the Jhur. The Peshin road crosses the Shalkot Lora, near Kushlak (Kujlak). It has clay banks twenty-five feet high. The road crosses low hills, level in places, and passes streams east of junction. After crossing Kaka Lora, the plain Syud Yaru is reached, which is wide and joins the Surkhab valley, and is unbroken towards Khushdil Khan. Westward the projection of Anjeram divides it from Peshin proper. The whole plain spreads out in one vast surface, and extends to a distant horizon in the Shorawak direction, where the Khoja Amran fades away into space, and Sarlát is seen floating like an island in the mirage. From the top of Surai † Mugzai pass, in the Barshor valley, the whole basin of the Peshin valley becomes disclosed. This great open space is inhabited by Syuds and Tarins, with a fringe of Kakars and Achakzais, employed as agriculturists and engaged in mercantile pursuits; they are very docile and peaceable, and desire our protection. These Southern Afghans work much more like Englishmen than Hindustanis, with a will and spirit unknown to the lethargic Southern Indians. But like all Orientals they cannot rule, they must be subservient. They make excellent servants but bad masters. They require the guiding influence of men like Nicholson and Edwardes to become a manly, industrious, loyal race. The country is abundantly well watered by perennial streams and *karezes* which

\* *Confidential Political papers.*

† General Sir Michael Biddulph.

descend from the surrounding hills. Clusters of villages follow the watercourses, and vast tracts of country are under cultivation. The Shalkot plains are continuous, and join Takatu spur, over which Murgi pass offers a short cut to Kujlak; the open vale of Kakar Lora adjoins Bolozai plateau. Shalkot and Kaka Loras is divided from Peshin by ranges and confused hillocks. The Anjeram range dies out at Khushdil Khan. The Gazarband crosses range from Quetta to Gulistan Karez, and at this point the Shalkot and Kakar Lora plain is divided from the great Peshin plain. The physical character of Southern Afghanistan is the marked uniformity of the direction of the hills, the regularity of the vast limestone upheavals, and the parallelism of ridges, valleys, plains, and sandy wastes. Peshin promises under our government to develop into the "garden of Afghanistan," and has advantages and capabilities only second to the Tal-Chotiali province. The area of cultivation in the Peshin valley might be almost indefinitely increased, under the fostering care of a strong and just rule. By the construction of a railway to Tal,\* and the opening out of roads into the heart of the rich prolific districts which surround that central point, the people would become great agriculturists, and turn their tulwars into ploughshares, and with their keen commercial instincts they would benefit by the new communications, and trade with India on a large scale. By mixing with Europeans they would soon learn, as some have already done, the value of commerce, and become loyal and true subjects of the British Government. "Such," says Sir Michael Biddulph, "has been the miraculous change produced in many other countries, notably in the Panjab and Sind, which have passed under our influence, and we may safely draw such a picture of the immediate future of Peshin and Tal-Chotiali."

\* Some of the highest authorities of the Crown now think that the line of railway to Tal—instead of crossing the desert—should have gone by way of Maddeygai (below Jacobabad) and Mirpúr, have entered the low Suleimans west of Kusmore, and thence by way of Mamani Pass, Siah-Tank plain to Tal-Chotiali, choosing the most advantageous contours of country where good water is procurable.

## THE NORTH-WEST FRONTIER OF INDIA.

I HAVE been requested to write a paper on the subject of the North-West Frontier of India, with a view to point out some well-known facts, concerning our Afghan and Bilúch neighbours and their countries, which are utterly at variance with many of the statements recently made in both Houses of Parliament. Even the English press often fall into error in writing on matters connected with Afghanistan and Bilúchistan, and I shall endeavour to correct some of the wrong impressions which appear to be so generally accepted. I shall answer the following statements, which have been recently made, in the order in which I have placed them.\*

1. After thirty years of our rule the frontier districts do not pay a tithe of the revenue, and there is no chance of any improvement.

2. The soil is principally sterile—unproductive, barren, and waste.

3. There is no local trade, and the people have no commercial instinct.

4. The Mahommedans are described as thieves, indolent, improvident, they have no code of honour, and dislike our race and rule. The Hindús are paramount.

6. There is no trade in either Afghanistan or Bilúchistan, and the whole country is a land of rocks and stones.

7. Our Indian regiments dislike frontier service, and by retaining any portion of either Bilúchistan or Afghanistan the native troops would desert our cause, become disloyal, and the Indian army very unpopular. The water on the Tal-Chotiali route is said to be bad.

8. If we bridge the river Indus at Dera-Ismail-Khan and Dera-Ghazi-Khan, and guard the *few* passes, where they emerge into India, east of the Suleimans,—revert, in fact, to our old frontier,—that will be our wisest course.

---

\* See *Standard* of 4th April 1881.

Now with reference to the first statement, about the frontier districts not paying a tithe of the revenue, I find by the last revenue settlement report of Dera-Ghazi-Khan—which is by far the largest and most important of all the revenue districts—that the value of land has risen since 1868 from an average of Rs. 5.10.3 per acre to an average of Rs. 22.8.0 per acre, and that the increase of total area under cultivation is 1,789,774 acres, or 161.7 per cent. The increase on the culturable area is 979,205 acres, or 468.3 per cent.; the increase on the irrigated area is 117,153 acres, or 81.1 per cent.; the increase on the unirrigated area is 219,637 acres, or 124.9 per cent.; the increase on the total cultivated area is 103.4 per cent. The unassessed area is now 23.84 per cent. of total area; the culturable area is 41 per cent. of the total area.

The Peshawur district shows 37.4 per cent. increased cultivation, which appears to be the minimum. In the Bunnú and Kohat districts, an average of 39.1 per cent. has been the increased cultivation and great wastes have been reclaimed, which have not been included in this average. The Dera-Ismail-Khan district shows 87.3 and Jacobabad 119.5 per cent. increased cultivation. Taking the actual value of land, it has risen from a general average of Rs. 1.4.0 per acre to a general average of Rs. 17.11.0 per acre, and the Revenue Settlement officers report, that with the irrigation canals, the increase is steadily progressing in all these districts every year, particularly in the Dera-Ismail-Khan, Dera-Ghazi-Khan, and Jacobabad districts. The last returns show an aggregate of Rs. 15,96,730.7.10 as land revenue.\*

---

This part of India is beyond the limit of the monsoon current and lies more or less within the rainless region. The water for irrigation purposes is obtained by tapping the river Indus at a higher elevation than the districts intended to be irrigated, and the watercourses thus made are called inundation canals, as they are only in use during the inundation or flood season. The Indus, like the Nile, when in flood carries the richest and the highest fertilising properties in its waters, and the land requires no further manuring. The result of this rich liquid manure has been the reclamation of enormous tracts of sterile land bordering

\* Private letters from Deputy Commissioners and Civil Officers verify these returns and figures.

the base of the Suleimans and the desert fringe of Jacobabad.\* Having been engaged for many years in the Revenue Irrigation Department on the frontier, I have no hesitation in saying, that under judicious legislation nine-tenths of the whole of the frontier districts are capable of being utilised and brought under cultivation, if Government would give up their invested rights in the so-called "wastes" and sell them at the market value, thus encouraging the Lambardars to carry out by private enterprise their own canals, and reducing the tax on water.† But even under the present system the people are happy and contented, for they know that by petitioning either the Deputy Commissioner or the canal officer they can obtain justice and redress. As a race they are infinitely better off than the down-country ryots, who are thin, poor, and under-fed.‡ These frontier men are stout manly fellows, dwell in better houses, and, instead of living on rice, eat meat and whole-meal bread.§ Every year brings them more money and prosperity. Moreover, the area of cultivation might be almost indefinitely enlarged by the extension of irrigation works. Foreign capital would find few more lucrative employments than the reclamation of the great desert fringe and wastes adjacent to the river Indus, which only require water, as may be seen along the existing canals, to render them the most fertile, rich, and productive of soils.

---

Occasionally heavy showers break on the higher range of the Suleimans, and great damage is done to the villages along the base. If bunds were thrown across the lower gaps, enormous reservoirs of water might be stored at a high level. The natives of Bundelkund thoroughly understand this system, and have a series of tanks at different levels to catch all such surplus water, and not a drop is allowed to run to waste. The soil is principally virgin alluvial along this reach, and merely wants water to produce the best crops.

Iron, copper, and lead are procurable in the hills. Alum, salt, saltpetre, Múltaní-matí, and carbonate of soda (sajji), are obtained in the frontier districts. The *rabbi*, or winter crops, are wheat, barley, poppies, gram, turnips, taramira, and peas. The *kharif*, or summer crops, are indigo, jowár, sugar-cane, cotton, bajra, rice, til, sawak, Indian corn, múng,

\* Sir H. Davies.

† Sir W. Merewether.

‡ Colonel Graham.

§ Sir A. Burnes.

melons, mot, and the ordinary pulses, cardamons, and tobacco. The produce of wheat per acre averages twenty maunds. Jowár is one of the principal articles of food in the frontier districts: it is grown between June and August, the later-sown crops being the best, and it takes less water than other crops. The average turn-out per acre is twenty maunds. In the Sindh circle jowár is grown for fodder. The stalks are eaten like those of sugar-cane. Cotton is grown very extensively all along the frontier. The average out-turn of cleaned cotton is one and a half maunds per acre. The frontier districts produce about 300,000 maunds annually. The best rice is grown in Jacobabad and Dera-Ghazi-Khan districts, that grown in the North not being considered so good. Indigo is largely grown along the frontier, and the produce steadily increases. It is one of the best paying of crops. Indigo gives three crops; the first year's crop is called "Arop," the second "Múndi," and the third "Tremúndi," which latter is kept for seed. Indigo sells on an average at Rs. 76.8.0 per maund. Poppies are grown in the three districts, and in 1880 there appears to have been about 2,500 acres under cultivation. The mode of extracting opium from the poppy-pod is peculiar to the frontier. One maund of poppy-seed yields about ten seers of oil, which sells at four seers the rupee. Under former native governments one-fourth of the gross produce was taken instead of taxes, and this share was called "mahsúl"; one sixteenth, called "lich," became the proprietor's share, and the balance went to the tenant.\*

The spontaneous products of the frontier districts are dates, múng grass, shaklo gum, seeds of which are used for medicinal purposes, and nilofar or water-lily, of which the roots and seeds are eaten. The most important of the indigenous products are the date palm trees. It is said that the date palm marks the route of Alexander's army.† His troops were supplied with Egyptian dates as food, and where the stones of the fruit were thrown trees grew. It is very strange that the date palm will not grow naturally out of the frontier provinces.‡ It grows best in the Dera-Ghazi-Khan, Múltán, and Bhawalpúr districts, and lives for 100 years.§ The finest trees bear a maund and a half of fruit, and they are assessed with land revenue. The total frontier revenue under this heading for dates averages about Rs. 100,000 yearly.|| Crops of the first

\* Mr. F. W. R. Fryer.

† Lord Northbrook.

‡ Elphinstone.

§ Lord Lawrence.

|| Sir R. Sandeman.

order of value in the several assessments of the frontier districts show a total value of gross produce of Rs. 47,59,864.11.8. Crops of the second order ditto, Rs. 217,82,730.5.2, and of the third and fourth order ditto, Rs. 60,46,691.10.4, or a grand total of Rs. 325,89,286.11.2. In the lowlands, on the west banks of the Indus, are found wild pig, hog-deer, black and grey partridges, quail, snipe, wild duck of all kinds, hares, and bustard. Towards Rajanpúr tigers abound. In 1872 four were killed, and one near Sháhwalí by some natives with sticks and swords. In the low hills ravine deer are found. In winter kulán, sand-grouse and obarah frequent the district. Below Rajanpúr herds of wild donkeys are seen. The natives consider them very good eating, and they are said to be unbreakable; but Captain (now Major) Underwood, 4th Punjab Cavalry, had two at Rajanpúr which he broke into harness.\*

Camels, horses, buffaloes, kine, donkeys, sheep, and goats are the domestic animals of the frontier districts. Camels are very numerous. The climate is favourable to them, and they are the only animals which can well be used to carry burdens on the Pachád tracks; only male camels are used for burdens. The mares of the frontier are very famous and of great reputation in all upper India. The natives of these parts never ride horses, but only mares, the colts being killed as soon as they are foaled unless of very good breed. The mares are noted for great powers of endurance, are hardy, and very handsome; some fetch as much as Rs. 800. A mare is considered to consist of four parts or legs, and is sold at so much a leg. The owner of one leg keeps the mare for three months in the year. It is common to own shares in several mares. Every Bilúch keeps one either of his own or in partnership with a friend. The Bilúch fights on foot; that is why mares are used. They can easily be tied up, and never betray their whereabouts by neighing as horses do. There is a Bilúch proverb: "A man with his saddle on a mare has his saddle on a horse, a man with his saddle on a horse has his saddle on his head."† Bilúchis and Southern Afghans do not molest women or children in warfare. The frontier natives never shoe their horses. Buffaloes are plentiful in the river lands, and are grazed in herds of 100 to 300. Sheep and goats are numerous. The natives prefer the latter for food, and the sheep are mostly the Dúmba, or fat-tailed species.‡

\* Mr. F. W. R. Fryer.

† Sir A. Burnes.

‡ Mr. F. W. R. Fryer.

The population of the frontier districts has been estimated at about 1,115,000, and the average is seventy-five per square mile.\* The population has increased by thirty-two per cent., and is made up of Mahomedans, Hindús, and Sikhs, the proportion being as seven Mahomedans to one Hindú, and to every thirty-six Hindús one Sikh.† Bilúchis predominate in the Dera-Ismail-Khan and Dera-Ghazi-Khan districts, the Pathán element in the North, and the Scind race in the South.‡ A great number of Patháns and Bilúchis enter the districts every year, and take service under our Government as sepoy, militiamen, carriers, builders, brick-makers, hewers of wood, clearers of jungle, and are extensively employed in clearing canals, throwing up embankments, excavating watercourses, &c.§ The Waziris and Bilúchis have been classed together, but the former are undoubtedly of Pathán origin, and do not belong to the same family as the latter.|| Both are partly subject to the British Government. Along the border they live as yet in tribes under hereditary chieftains. The Bilúchis are broken up into the following tribes—the Kasránis, Bozdárs, Lúnds, Khosás, Khetráns, Legáris, Gúrchánis, Bughtis, Dreshaks, Mazaris, and the Marís.¶

The Bozdár, Khetrán, Bughti, and Mari tribes are quite independent, and so are the Hadiani section of the Legári tribe. The Bilúchis are a distinct race, this fact is established beyond question, from their language and appearance. Sir Henry Green says they came from Aleppo in the 12th century, *viâ* Baghdád, the banks of the Euphrates, and the northern border of the Persian Gulf to Mekrán, whence they spread north. In Syria there are tribes bearing the same characteristics as the Bilúchis, in manners, habits, and appearances. Elphinstone states that at the first Mahomedan invasion, the mountains of Mekrán were inhabited by Bilúchis, and those of Suleiman by Afghans, as at present. The Afghans were certainly in possession of part of the Suleiman range, as remains of their tanks and tombs are still to be seen on the Marie mountain. Pottinger divides the Bilúchis into three branches; he describes the Dreshaks, Mazaris, and Legáris, who lived in the hills, as having the worst possible character. "They infested the roads," he says, "and committed the most atrocious robberies and murders upon travellers. The Khan of Khelat lives too far away, and has no control over them. They are at continual war

\* Lyall.

† Graham.

‡ Temple.

§ Munro.

|| Raverty.

¶ Fryer.

with one another, and keep no engagements." All these races now live in the Dera-Ghazi-Khan district, and have settled down as an honest, industrious race, and quite given up robbing and murdering their neighbours. The Bozdárs, against whom we are now sending an expedition, are jealous of the Legáris, and as we have not given them the same encouragement as some of the other tribes, but blockaded their passes and driven them into their own barren country, they have been compelled to break through all restraints for the sake of obtaining food. The Bozdár chief assured me, some few years ago, that if we employed his people in some way, they would willingly give up marauding. I must say that all the Bozdárs I have employed, as Government servants, to escort treasure and Government property, have invariably been true and faithful, and as overseers and workmen they have behaved right well.\* The Bozdárs can muster 2,700 fighting men, according to the official confidential reports; but the Bozdár chief told me he could put 6,000 in the field.

I can say the same of the Waziris, against whom we are also sending an expedition to punish them for plundering and raiding on our frontier. The Waziris are the most powerful tribe on our border, and can muster 50,000 fighting men, but I doubt whether more than 15,000 will show fight against us. The Waziris are not Bilúchis.† My own idea is that they are of Turkomán origin, although they possess many of the characteristics of the Bilúchis. Many on the north and west of the Waziri country have intermarried with the Afghans, and imbibed their manners, customs, and habits.‡ But as a race they have not, by any means, the fanatical elements of the Patháns.§ And those who have entered our service, never care to return to their own barren country.|| They are a wild and nomadic tribe, and, as a rule, take but little interest in agriculture, sowing merely enough for their own wants; they subsist principally by keeping flocks of sheep and goats, and herds of cattle, which they graze in many of their fine valleys and plateaux.¶ They are exceptionally truthful.\*\* The only classes in Afghanistan who are unprincipled and deceitful are the Kabulese and Northern Afghans, and if Sir Frederick Roberts had said of these classes that the more they saw of us the more they disliked us, he would have been more correct. What I wish to show, is that these Northern Pathán races are quite different in this respect to their

Handwritten notes in Urdu script on the left margin, including the word 'Waziris' and other illegible text.

\* See *Times* of 9th April. § Stewart.

† Sir A. Burnes.

‡ Macartney.

|| Sir B. Frere.

¶ Lumsden.

\*\* Vigne.

Southern brethren.\* All officers who know the frontier well, are agreed on this point.† Most Orientals are addicted to lying. The Hindús are, perhaps, the most eminent liars in the world. They are taught to lie, neatly, elegantly, and well, and they certainly succeed.‡ The Sikhs are most honest, and as a race very truthful; they are the only branch of Hindús who do not lie.§ There are some Hindús on the frontier, and they are held in great contempt by all classes of the Bilúchis and Afghans. They are called by the common name of Karár in these parts. The word is used to denote a coward, or one base and abject.|| They are a down-trodden race.¶ The Hindú remains in Bilúchistan, and elsewhere, show that they were once the dominant race, and we know that a Hindú dynasty reigned at Khelát before it was conquered by the Brahois. Under the Mahomedan rulers they were only tolerated at all because of their being useful as traders and accountants. Professor Wilson identifies them with the Cirrhadae of the ancients; and, indeed, Kerát is one of the five Prusthas, or regions of the Hindús, these being Cheen Prusth, Yavem Prusth, Dukshem Prusth, and Kerát Prusth, understood by the Indians to apply to the country about Ojein (compare Professor Wilson's *Vishnú Púrán*, page 175, for the Keratás of that book). While subject to the Mahomedans, the Hindús were not allowed to ride anything but donkeys. They were also forbidden to wear turbans. Even now, in spite of the efforts of the Sikhs, during their supremacy, to do away with these signs of social degradation, a Hindú, unless he be in the Government service, seldom wears anything but a skull-cap, or rides anything but a donkey. The Hindús of Afghanistan and Bilúchistan, and along the west of the Indus, are also very lax in their religious observances, will drink out of a skin, and use the same vessels as a Mahomedan. On the frontier there are a few Hindú families of good position, which they gained under the Sikh raj. In law and official deeds of the Mahomedan epoch, a Hindú was always mentioned as "Mati-ul-Islam," or slave of the followers of Islam. There are several remains of old Hindú colonies in the Dera-Ghazi-Khan district. These are at Sangarh, Dilurai, near Jampur, at Harrand, at the mouth of the Chachar Pass, at Marie in the Rajanpúr tehsil, and also at Tousa and Mangrota. With reference to these last places, which are supposed by the natives to be the

\* Bellew.

† MacGregor.

‡ Lord Macauley.

§ Lyall.

|| Cunningham.

¶ Fryer.

hottest part of the world, and very sandy, there is a couplet:—

*Tousa wah Mangrota ra chún sakhti,  
Baz ba Dozakh chira pradákhti.*

The meaning of which is, that after making Tousa and Mangrota there was no need for God to make hell. The guardian of the Tousa shrine says that the couplet means that the sanctity of the shrine does away with the terrors of hell.

There are also remains of Hindú temples along the Tal-Chotiali route in the Peshin valley, at Quetta, Kandahar, Khelat, and in the Bolan pass. According to the Hindú writings Rotâs on the Jhelum, and Harrand at the base of the Suleimans, were founded by a Greek named Hara Náchus, who was killed by "an incarnation of vigilance."\* Sir A. Burnes says that Harrand was founded by Hari, a slave of Alexander the Great. There can be no doubt, according to Cunningham, Wilson, and Elphinstone, that the Hindús were the original inhabitants and the ancestors of the Jats, who, under different names, are still found intermixed with the Bilúchis on the border, and settled along the frontier. They have been celebrated for silk-weaving, pottery, wood-carving, ivory-work, embroidery and carpet-making, and as buniahs or shop-keepers. The Hindús, however, are no longer a dominant power. Great numbers of them have, during the past few months, been leaving Kandahar, where they have long been settled, and with all their families, goods, and chattels, have sought protection under British rule, as they openly assert they cannot any longer brook Mahomedan tyranny. It is a moral impossibility for a Kabul Government to rule "with kindness and justice."† This the Kandahar people know, and it accounts for the emigration which has been going on lately from that province to British India.‡ The Mahomedans on our frontier have certainly shown their preference for our Government, for those who lived by raiding have given up such practices, and have become industrious, provident, well-to-do subjects, docile and obedient to our law, and honourable in their actions.§ Of one thing I am positive, and their chiefs have not hesitated to corroborate my statements, that Mahomedans cannot by themselves rule supreme; they must be governed.

We have had abundant proof that the Bilúchis and Southern Afghans who have been employed in our military service, and

\* Masson.

† *The Pioneer*.

‡ *The Times*.

§ Lord Lawrence.

in the various occupations under Government, have behaved magnificently.\* We have put them to the severest test by employing them in their own country to fight their fathers and brothers, and we know how true and loyal they have always shown themselves.† With the T. C. Force we had one regiment and 200 of the Bhawalpúr Contingent, who were all natives of Southern Afghanistan, and their conduct throughout the campaign was splendid. We also employed many others as temporary sepoy to escort convoys, Government treasure, and property, for very long distances, through their own country, where they had the entire charge, and in no instance did they betray the trust reposed in them.‡

On many occasions Sir Robert Sandeman and the political officers depended entirely on these wild men as an escort, and I have never heard of an instance of Bilúchis or Southern Afghans being treacherous when so employed. They are very brave, manly, thoroughly independent, honourable in their dealings, and, as I said before, true and loyal to their word. They have a code of honour which Bengalis are never likely to understand, and they are capable, under our rule, of being made a great people.§ To say that they are treacherous is unjust and utterly at variance with facts. I have, at different times, employed many thousands of them on large public works, and have had every opportunity of testing their worth. Their work is always well and thoroughly done; they do not require the supervision necessary with Bengalee coolies, but work honestly and with great spirit.

Bilúchis and Southern Afghans within our frontier or across it, are quite without any strong religious emotion, and in this respect differ entirely from the fanatical races of Kabul and Northern Afghanistan.|| The Ghazis do not come from these classes.¶ The Ghazis of Kandahar, Quetta, and Khelat are principally from Northern Afghanistan. Most of the priests and moollahs are from India, Kabul, Herat, Persia, or Arabia.\*\* I have met some moollahs who came from Kandahar and Khelat, but they have been very tame specimens, and not in the smallest degree fanatically disposed. The late lamented Rev. Dr. Gordon, the well-known and highly respected frontier missionary, who fell gallantly in the sortie from Kandahar in

\* Sir D. Stewart.

† General Tytler, V.C., C.B.

‡ Confidential Political Papers.

§ Lord Lawrence.

|| Bellew.

¶ Eyre.

\*\* Lord.

August last, mixed with these people and preached Christianity to them far away from military stations, and he was never insulted or thwarted, although some of the Mahomedan chiefs told me they would rather Gordon *Sahib* did not tell them their religion was all untrue. I mention this to show that the frontier races cannot be called fanatical, and although practically without any religion, they are, for an uncultured people, moral, benevolent, charitable, industrious, and exceedingly well disposed. They certainly prefer doing a good deed to a bad one, and if they commit highway robbery, they were born to regard it as a means of living, and are quite willing to give up such a practice, provided you give them honest work. I repeat that with these Southerners it is quite wrong to suppose that the more they see of us the more they dislike us. As a very humble individual, and one of no party, being an unbiassed outsider, I affirm, for the sake of truth and justice, that this saying is only true of the Northerners. Perhaps a man in my position, who mixed freely with the people, is better able to gauge the truth and worth of their character than those high in military or political command.

Sir Henry Davies, late Lieut.-Governor of the Panjab, recently prepared some very elaborate statistics of the amount of trade. He estimated the gross exports from Afghanistan to India as amounting to £333,535 sterling, and the imports to £318,383. The late Colonel Graham, the Commissioner of the Derajat, estimated the trade which entered his district through the Gomal pass at about £500,000 sterling, and Mr. Andrew, who is well known for his accuracy in all Indian commercial figures, considers that these figures might now be more than doubled, without fear of exaggeration. He states that Afghanistan is a virgin country, capable of immense development. The ingenuity with which the Afghans constructed *Karez* for purposes of irrigation, shows them to be possessed of more than the mere rudiments of mining knowledge. Mineral wealth lies untold beneath their feet, and the soil is rich and prolific. I saw in the Tal-Chotiali country evidences of a system of irrigation, which a pre-historic race mastered, and which certainly showed unmistakable signs of hydraulic engineering art of a high order. There can be no doubt that the vast arable lands now lying waste, idle, and profitless, might be converted into a granary of immense magnitude, and sufficient to supply the Panjab and Scind provinces with grain in times of scarcity or famine. The vine is indigenous to certain valleys in Southern Afghanistan,

and it is well known that the apple originally came from that country. The high plateaux in the vicinity of Quetta are admirably adapted for the cultivation of the tea plant. The establishment of looms in the principal cities would obviate the necessity for the export of wool and cotton, and with care and attention the silk trade might be greatly extended. In the Quetta province there are 35,000 square miles of good rich land under cultivation, 42,000 miles in the Kandahar valleys, and 15,500 square miles ready for the plough in the Tal-Chotiali province. To say that Afghanistan is a country of rocks and stones is only partially true. Until now it has lain under the curse of Islam, and its attendant tyranny and lack of enterprise. The people are energetic, the soil is fertile, mineral wealth is boundless, and it needs but guiding spirits to point out how all this wealth can be utilised, the infusion of a certain amount of English labour to direct, and English capital to furnish the motive power, and the whole aspect of the country will be changed.\* Sir Richard Temple speaking of these tribes says: They are not adverse to civilization, and are fond of trading, as also of cultivation. They will take military service, and when commanded by men who understand their character, make admirable soldiers. The late Colonel Graham, Commissioner of the Derajat, writing about these Southern Afghans, states, that they prefer trading to soldiering, and are very honest in all their commercial transactions. This opinion is supported by General Munro, the Frontier Commissioner. Generals Chamberlain and Keyes, both distinguished frontier officers, report that the Powindahs, or soldier-traders of Afghanistan, possess many excellent qualities, are brave, generous, and fair in their trading dealings. Lord Lawrence was of opinion that Powindahs would do anything for gold, and possess the keenest qualifications in all matters connected with trade and commerce. Sir Herbert Edwards writes: These Powindahs will ere long vie with the Parsees, and Bombay merchant princes, in the traffic and trade of Afghanistan.

The country, as I said before, is rich in minerals. Iron, lead copper, and antimony are found in the Kandahar and Peshin valleys; coal, sulphur, zinc, nitre, gold, silver, iron, and copper in the Waziri, Tal-Chotiali, and Quetta districts. Gold and silver is met with in all the rivers of Bilúchistan, Afghanistan, and the Panjab, and a great number of people earn a precarious

\* Mr. W. P. Andrew.

existence by washing for it, by a primitive, unscientific, and wasteful process. There is a grand field for European enterprise in Southern Afghanistan.

Silk is produced in Kandahar, and on the banks of the Argandab; and posteens, or sheep-skin coats, Chogas, or camel-hair cloaks, felts of various kinds, and rosaries, are the principal industrial products.

Powindahs, or the soldier-traders, are made up from different tribes and classes, in Bilúchistan, Afghanistan, Khorassan, and along the Suleiman frontier. They bring long trains of camels, laden with merchandise from Bokhara and Samarkand, richly embroidered Persian carpets, and other articles of ware from Herat, besides silks, horses, goats, sheep, drugs, wool, gold coins, furs, currants, apples, grapes, all kinds of dried fruits, and sweetmeats, turquoises, goats and camel hair, gold and silver thread, worked garments, saffron, and other dyes, catgut, antimony, quince seed, manna, various seeds, provisions, queer guns, swords, and daggers, handsomely worked shawls, and some kinds of pottery ware from Central Asia. The Powindahs, and their merchandise, smell terribly of asafœtida; even bushes and rocks against which they rub in the narrow gorges and passes, retain for a long time afterwards this smell. While within our frontier they obey the law, and give no trouble to the authorities. They enter India principally by the Gomal, Tal-Chotiali, and Bolan passes. The total imports according to Mr. W. P. Andrew, a most reliable authority, are about a million sterling. The goods the Powindahs export from India are English cotton piece goods, silks of all colours, European cloths, velvets, toys, tea, copper, tin, sugar, indigo, pepper, salt, steel, fire-arms, gun-powder, cotton, medicines, richly coloured German pictures, English tinned sweetmeats, French and American puzzles, tricks, boxes, and odd goods of all kinds.

There is not the smallest doubt that, if these mountain passes were made safe against roving bands of armed banditti, the traffic would increase enormously. As I have pointed out in other articles, the easiest and most direct of all the great trading routes between Southern Afghanistan and India is the Tal-Chotiali one, and by removing the garrisons west of the Indus in the Dera-Ghazi-Khan district to Tal, this project would be at once carried out, without any further military expenditure. We have only to hold out our hand to carry the point. At this moment we can accomplish what was almost impossible before, that is, take possession of this Tal country without the risk of losing a man.

Never was there a country which, from its natural formation and alignment, and the character of its people, could be more peaceably and economically ruled than Southern Afghanistan. One of the objections raised to our occupying Tal-Chotiali, is that our native troops would never be reconciled to serve in such a country. I am perfectly aware of the fact that the troops were delighted to return to India, and some, particularly the 1st Panjab Infantry, said they were getting tired of a two years' stay in Afghanistan. I made special inquiries of the men, and they were not at all reserved towards me. The 1st Panjab Infantry, for instance, said they thought that one year of garrison duty at Quetta or Kandahar was long enough; but if there was any chance of a *tumáshá*, as they called fighting, they would gladly stay half a dozen years. What they disliked was the extra duty, and the strict discipline. Other regiments were quite sorry to return to India. They liked serving in Bilúchistan and Afghanistan, because they received free rations, additional pay, had no expenses, and there was always the prospect of a brush with the enemy. I know some of the frontier stations west of the Indus are quite as unpopular as our outposts at Tal-Chotiali, Quetta, &c. They prefer the former to the latter, only as being nearer to India, and where the water is thought to be better. The Madras and Bombay troops positively hated the place, and were for ever grumbling and sowing discontent amongst our Sikh, and Panjab frontier regiments; but it has been proved that Madras and Bombay troops are not worthy of the name of soldiers, and it was a farce sending them out of their presidencies. They have not the *morale* nor physical powers to be anything more martial than policemen, or palki-bearers. I found, for instance, that a dozen Patháns, of the Bhawalpúr Contingent did more actual work in an hour, than a wing of a Madras regiment in a day. After a march of twelve miles they would be thoroughly prostrated. They could not march without drinking water about five times as often as Panjabis. At night, if on guard, and the weather was cold, or it rained, they would all go to sleep, and this in an enemy's country. If, instead of their being flogged, one or two had been tried by drum-head court-martial and shot, it would have had a most beneficial effect. Some of the Bhorí-Patháns who were taken prisoners in an engagement near Tal-Chotiali, and brought into camp by some of the 1st Panjab Infantry, saw the Madrasses a few days later, and they remarked with a sneer, "Surely these women-like men were not sent up to fight *us*." During the day these so-called soldiers

would grumble and whine at the discomfort of campaigning. I mention this, as it was these men that made all the fuss, and the English authorities think that serving beyond the frontier was generally distasteful to all our troops, and include Goorkhas, Sikhs, and the gallant regiments of the Panjab Frontier Force, in the same category with Bombay and Madras sepoy. As an unbiassed outsider, I saw enough to convince me that these men would demoralise the best troops, and instead of being any material use, they were a source of weakness to the British army in Afghanistan; and all officers not of the Madras or Bombay armies, are agreed on this point.

Instead, therefore, of Tal-Chotiali being an unpopular station, I feel sure it would, under the guiding influence of men like Edwardes, Reynell Taylor, Nicholson, Jacob, or Lumsden—who years ago pitched their tents under solitary trees at Bannu, Khanghur, Asni, Hoti-Murdan, and Hazara, from which rose the flourishing cantonments of Edwardesabad, Jacobabad, Rajanpúr, Murdan, and Abbottabad—develop into one of the most beautiful, picturesque, healthy, and favourite stations in India, for it has so many advantages over the present frontier cantonments, all of which in the Dera-Ghazi-Khan and Jacobabad direction it would supersede.

It will be as well if the troops who are to return this way from Kandahar, obtain their drinking-water on line of march from high-level springs, or, if this is not always possible, excavate small temporary wells clear of river bed, water being procurable at from ten to fifteen feet below natural surface in most of the valleys. The water at this season in open creeks and streams is somewhat impure, owing to the dryness of the season, and would probably cause, as it did in 1878, slight dysentery amongst the men.

To bridge the Indus at Dera-Ghazi-Khan and Dera-Ismail-Khan, or at either of these places, would exhaust the revenue of the Panjab for years to come, and in the present state of India's finances it would be impossible to carry out so great a work. It would, doubtless, be more desirable that the Indus should be bridged at one of these points, but the difficulties in the way are great. The river along this reach passes through a low flatish alluvial section, and the stream is continually changing and shifting its bed. From a discharge of 20,000 cubic feet per second in winter it swells into a river of enormous magnitude, with a tremendous velocity and a discharge of about a million

cubic feet per second, overflowing the country for miles on either side of its course, and carrying everything before it; erosion and encroachment are ever at play where it impinges, and silting-up takes place where it recedes.\* This mighty volume of rushing water is not so much due to the rainfall, as its catchment-area-basin lies almost wholly beyond the influence of the monsoon or equinoctial current, as to the melting of the snows of the Himalayas during the summer months—a fact clearly shown by the discolouration of its waters. The fine impalpable mud held in suspension, which is brought down by the Indus in flood, deposits itself when the velocity decreases to 1·85 feet per second. The piers of the Empress bridge over the Satlaj, at Adamwahan, were carried down 107 feet below the lowest part of the existing bed, and from personal borings of the Indus I estimated that the wells for a bridge at Dera-Ghazi-Khan would have to be carried down at least 150 feet below the bed to escape the terrific scour and retrogression of level which prevails. The bridge would have to be about three miles long, and have retaining wing-walls, and up-stream abutments a mile in length, and when finished might be a failure. Witness those over the Beas, Satlaj, and Chinab of the S. P. and D. Railway, which are in a chronic state of being enlarged.†

What appears to me a very feasible, simple, and far less expensive method of connecting Múltan, the great military base, with the frontier, would be a navigable canal between the Chinab and the Indus. The cost of the project, including two locks, I estimate at four lakhs of rupees. There is no single reach of the main stream of the Indus which is straight for any distance, that is to say, if its banks do not curve and twist every two or three hundred feet, its stream will rebound from left bank to right in the most persistent manner possible; what is very noteworthy when the river is thus acting, is the variable way in which it discards the silt on the side it regurgitates, erosion and retrogression of level going on where it impinges. This action is ever at work, and by using the valuable agency of its silt deposit, the river even in flood can be mastered and made to go

\* "Geological Notes on the Indus," by G. W. Vyse, *Royal Asiatic Journal*, July 1878.

† The mistake was throwing stones and *debris* round the piers to protect them. This choked up the waterway, and increased the scour elsewhere, eventually undermining and sweeping away piers and all obstruction. One well for one pier is not sufficient, and it has been proved they were not carried down *half* far enough.

anywhere.\* When an erosion has been made on the right bank another will be made on the left, and then another lower down on the right, till in this manner the whole river-bank will become a continuation of arcs, alternately concave and convex; the erosion increasing, it will in a short time become one continued curve, and the thread of the stream flying off from one side will go across and batter the opposite shore with a constant renewal of the same play, and as the strength of the stream progressively lessens, in proportion as the angle of the current with the corroded shore becomes more acute, the obliquity of the thread of the stream impelled and repelled, becoming greater as the concavity of each erosion is enlarged, it will so happen that the force will at last become equal to the resistance, and each erosion will have its limit.†

Although the science of hydraulics may be said to be still in its infancy, we have by the higher precise rules, based on theory and expressed in perfect mathematical formulæ, discovered the true solution of the laws which govern the impelled and repelled actions of the main currents of shifting streams and variable floods like the Indus. Having discovered that solution, we can put it into practice, and train and guide such a mighty volume of water as the Indus in flood, as easily as one can drive a four-in-hand through Hyde Park.‡

I tried a very interesting experiment with the Indus in 1875-76, and diverted it from a point in the Dera-Ghazi-Khan district, into a sandy waste in the Mozuffergurh district, saved two miles of encroachment, and reclaimed six miles of rich arable-land.§ I mention this, to show that, having a canal for political and commercial purposes, between Múltán and the frontier, the Indus could always be controlled by exact theories, which are now admitted by the Government, and it is to be hoped that no more vast sums of public money will be squandered on useless unproductive works.

Regarding the last statement, viz. that if we bridged the streams, we could defend the *few* passes where they emerge into the plains at the base of the Suleimans: it is, no doubt, quite possible to defend such a pass as the Khyber, and, perhaps,

\* Vyse, on the River-training of the Indus, *Professional Papers on Indian Engineering*, No. ccxix., Published by Government.

† *Professional Papers on Indian Engineering*, Nos. ccxix. & ccxlii, by G. W. Vyse. Published by Government.

‡ *Minutes of Proceedings of the Inst. Civil Engineers, Hydraulics*, by G. W. Vyse, vol. 1. page 213.

§ The River Indus, by G. W. Vyse. *Royal Asiatic Society's Journal*.

some others in the north, more effectually on our side, than by entering Afghanistan and defending them from the other side, but the so-called *few* passes amount to 213, in the reach from Dera-Ismail-Khan in the north, to the Jacobabad boundary in the south. There are no less than 92 passes in the Dera-Ghazi-Khan district alone (Quartermaster-General's Department, Intelligence Branch, *Confidential*), which are easy and open for all arms of the Service, save wheeled artillery. The remainder are about equally distributed in the districts on each side, but the *ninety-two* converge, towards one centre, which leads direct to Tal and Chotiali, and these latter points command, strategically speaking, the whole of the principal routes connecting Southern Afghanistan with India, and the various passes flanking the Bolan. Situated on a high plateau, 3,600 feet above the sea, with a rich virgin soil, well watered by many excellent perennial streams, and a climate infinitely lower in temperature than any of the stations west of the Indus, Tal-Chotiali is admirably placed as the great frontier cantonment, and as a *point d'appui* in Southern Afghanistan.

We all know that General Phayre took longer to march on Kandahar from Quetta than Sir Frederick Roberts did from Kabul, although it is *double* as far. The recently discovered road from Tal to Kandahar is more open, and the gradients less severe than that *viâ* the Khojak, and there can be no doubt that an army could march in far less time from Tal to Kandahar than from Quetta.

In addition to these advantages, Tal is much nearer our military base of operations, and more accessible at all seasons of the year.

The rectification of our Indian frontier, and the retention or abandonment of the whole or a part of Afghanistan, has unfortunately been allowed to become a party question. It seems a pity that so important a measure should be thus regarded, when a cool, calm judgment, unbiassed by party strife, is so absolutely necessary for the honour and glory of England's great name in our Eastern Empire.