

prepared to submit their long-pending disputes to arbitration. So vague was the evidence before the Commission which was appointed to investigate the disputes, that it was deemed advisable to procure oral testimony from the Chiefs of some of the tribes located on the debateable grounds. Accordingly in 1844, Commander Felix Jones was commanded to bring a deposed Sheikh of the Cha'ab Arabs from Basra to Baghdad; and Major Rawlinson, then Resident at Baghdad, determined to accompany him.

The expedition left Baghdad on the 19th of August, 1844, and consisted of Major Rawlinson, a British merchant, Commander Felix Jones and a retinue of some 20 servants and a body of mounted troopers. The first halt was at Khani-beni-sa'ad, where the few wells in its vicinity afford only brackish water. It is therefore necessary that the traveller stopping at this station should supply himself with water from Baghdad. The Diyaleh was crossed at Haweidha and the route led through Bakuba across the Mahrut canal up to Shehraban, which village is supposed to occupy the site of the ancient Apollonia. After crossing the Belad Ruz and before entering the defiles of Hamrin it became necessary to collect the party to provide against a surprise from robbers. When they had passed this range, they reached a village called Kiz'l Robot and were received by the Chief, Kader Pacha, with hospitality. After passing the night with him the expedition journeyed on to Khanakin which town boasts of a splendid bridge of nine arches over the Holwan. Opposite to Khanakin and on the Persian side of the stream there is the town of Haji Kara which possesses a fine Khan. These places are now the frontier towns lying on the main road between Turkey and Persia. Both Khanakin and Haji Kara form considerable entrepôts for trade, and many of the influential houses at Baghdad and Kirmanshah have agents there; gums, galls and other drugs abound in the vicinity and might be made a source of considerable profit. From Kasri Shirin the travellers were escorted by a party of Jut horsemen, who formed a striking contrast to the Arabs. They had fine manly features and dressed with a greater regard for show than the Arabs, but at the same time they were neither so courageous nor so enduring. Near the Khans of Sar Puli Zohab are the remains of the Halah of the Israelitish captivity; one of the eight primeval cities of the world. Parts of the ancient buildings are still seen in section, and bricks bearing cuneiform inscriptions similar to those at Babylon abound in the vicinity. After crossing the Holwan, the plain of Bishiweh, is entered upon. This plain lies between the Dukkani Daud, through a gorge of which the Holwan flows, and the mountains of Zagros. It is plentifully watered and well cultivated, and terminates at the foot of the Taki Girrah

the ascent of which proved rather laborious to the expedition. Half way up stands an arch of white marble which is doubtless of great antiquity, but now bears neither inscription or design. The caravan, after travelling through roads sometimes so narrow that they were compelled to travel in single file, arrived at the Fort of Sarmil, the ancient boundary of the Turkish and Persian empires. Kirrind, a neighbouring village, situated in a deep gorge of the Zarr range, has a particularly pretty appearance; rich gardens, which produce a variety of fruits, including the celebrated stoneless grape, extend up the defile and along the base of the mountain. Gahwarah, where the party made a halt, is the capital of the Guran country. It contains about 300 houses which are flat roofed and rise in terraces on the slope of the mountain. "Ten years ago, when the Persian forces were commanded by British officers, Major Rawlinson was appointed to raise a regiment of Gurans for the service of the State. This he accomplished, after some trouble, and resided in this locality until he had brought his new corps into a state of perfection almost unknown in these regions. He afterwards led this regiment through the intricate passes of Luristan and Susiana, and to this journey, and to his residence among the Gurans, we are indebted for his admirable paper on the comparative geography and historical notices of some of the most interesting countries alluded to by ancient writers; and which had seldom, if ever, before been trodden by the foot of an European. A great change has, however, happened since the British officers were withdrawn, and the corps, that before consisted of near 800 rank and file, now scarcely musters 350 bayonets. Oppression, wages in arrear, irregular service, and a thorough absence of system, are the chief causes of this decline. The same causes have operated, in a more or less degree, on the whole Persian army, under the imbecile government of the Shah and the tyrannical conduct of provincial governors. At the present time Mohab Ali Khan, the Amir of this province, is compelled to confine himself to the city of Kirmanshah, the large tribe of the Calhurs having risen, not to seek redress for imaginary grievances, but to obtain the justice which has hitherto been denied them. The extent to which taxation had of late been raised rendered it utterly impossible for the poor cultivators to comply with the increased demands; and then the rapacious agents of so worthy a master, equally alive to their own interests, resorted to a system which in a very short time left the brave but oppressed ryot nothing but his sword to subsist by." The Guran Kurds are a frank and hospitable race and like most mountaineers are hardy and enduring. Very little is known of their faith,

which appears to embody the various doctrines of Judaism, of Christ and of the Shiah Mahomedans. They are termed Ali Ilahis and are supposed by Major Rawlinson to be of Jewish origin. It is said that their religion enjoins that at certain periods they shall congregate by night on a particular spot. On these occasions the greatest license prevails and seems to be prescribed by their creed. Both the Ali Ilahi of the Zagros and the Ancyrians in Syria may be remnants of the early Babylonians, who in their religious festivals indulged in every species of licentiousness. From Gahwarah the course led long the left bank of the Zemkan and after attaining the head of the pass of the Kal'eh Kazi range, across the fertile plain of Mahidasht in the direction of Kirmanshah which a few years ago had the reputation of being a thriving city. But owing to the rapacity of its successive Governors, to the plague and to cholera the number of its inhabitants has been reduced from 85 thousand to 24,600. Internally the town is a mere heap of ruins, its bazars are but partially filled and there is scarcely any trade but in fruits. Anciently Kirmanshah was celebrated for the beauty and richness of its carpets but now scarcely one can be obtained. Tabriz is the chief place from whence its imports are derived and articles of European manufacture find a tolerable sale. The inhabitants have a peculiar custom of inscribing upon the tombstone, the sex and professions of the defunct by various devices. The grave of a female is shewn by a double comb and that of a male by a single one. Some few of the tombs are also decorated with the braided tresses of some female relation or friend. During his stay at Kirmanshah, Major Rawlinson paid a visit to the rock of Behistan upon which are numerous inscriptions. At a height of 300 feet above the debris at its foot, the face of the rock has been chiselled so as to expose a smooth surface. The surface may be divided into four tablets. The main one, devoted to the sculptures illustrative of the writing beneath them, is the largest and is 30 feet in length and 26 in height, of this the sculptured slab with a pedestal of 11 inches occupies fourteen feet; the remaining portion being dedicated to the reception of an inscription written on four columns in the Persepolitan cuneiform character. Each of these columns containing 96 lines is six feet four inches in breadth; and a supplementary half column, now much defaced, appears to have been added. Immediately to the left of these, as they are viewed, a projecting slab twenty-one feet in length exhibits in three columns a transcript in the Median language. Immediately above the Median tablet, with its base resting upon it, is a rock inclining inwards. This has been scarped upon its face and sides and bears an inscription in the Babylonian cuneiform. To the

right of the main tablet the rock has been smoothed for a further space of six feet and is covered with characters but so much destroyed that it is difficult to distinguish, their nature. This is probably the work of a subsequent age, inasmuch as unlike the former tablets it does not exhibit careful preparation and has not undergone the process of varnishing. The varnish is composed of a hard flinty and very durable substance, and were not destroyed by the constant trituration of rain water is as perfect and smooth as the day it was laid on. The letters, which are one and a quarter inch in length, exhibit considerable skill on the part of the engraver.

The sculptures comprise a group of fourteen figures and if the three principal figures are excepted, they are deficient in beauty. Some of the figures are standing and are attached to each other with a long cord passing round their necks and their hands are bound behind them. Probably the badness of the design and the dwarf like forms of this portion of the sculptures are intentional and are meant to point out the more exalted position, and therefore greater virtues, of their conqueror ; who is of commanding stature and is represented in the attitude of a victor with his left foot on the body of a prostrate foe, the tenth of the captive group. This figure is meant to depict Darius. " His features are well developed, and exhibit that energy and determination of character for which he was celebrated. A degree of finish and study pervade the figure of the monarch, who is singularly enough represented with bare feet, while his captives and followers are either sandal-clad or wear a coarse species of shoes. His head, surmounted by the diadem, displays, after the fashion of the day, a carefully-curved mop of bushy hair, extending nearly to the shoulders. The upper lip, too, is adorned with an elegant moustache, and the beard, fantastically disposed in stiff and separately curved tresses, adds much to the dignity of his appearance. The left hand grasps the bow, the symbol of regal power; while the right is elevated and extended towards the prisoners, in the attitude of angry expostulation. The wrists are adorned with bracelets, and a girdle or zone, terminating in two tassels, encircles the waist of the monarch, and serves to bind the flowing tunic that he is habited in. A loose vest or jacket, with large open sleeves, completes his attire. The attendant guards in their dress differ but little from the monarch. They have sandals on their feet, and the head is only covered with a circular cap. The one nearest to majesty also bears the regal bow, and a well-stocked quiver hangs pendent at his back. The furthest removed from the king differs from the last only in being armed with a spear, which is held upright by both hands in front, the shaft resting on the ground.

"The aerial figure which hovers over the centre of the group

would seem to represent the Supreme Being ; and this idea is in a measure confirmed by its also presiding over the sculptured monuments of antiquity met with at Persepolis. Some writers have imagined that the figure merely denoted the spirit of a departed monarch, and was symbolical of the immaterial substance of man. Others have denominated it the 'Ferooher' of the Zend-Avesta ; the soul or spirit that presided over all the royal acts—a constant guardian over the regal head ; an emblem of the favouritism of Ormazd—a type of the anointed of the Lord.

"It is a half-length figure, clothed with the short vest similar to that of the king, from which depends a long flowing and plaited robe, spread out fan-wise at its skirts ; a zone or girdle, terminating in snake-like ends on either side, confines this at the waist. It is probably the sacred fillet still worn by all ranks of existing Guebres, in Persia, and by the Parsees on the shores of Western India. The priests of the latter wear also a plaited robe in some respects similar to that described above : a circular ring encompasses the figure in the form of a halo ; this has two arms, one on either side, which may represent wings, and would seem figuratively to imply the world and its Omnipresent Founder.

"In the left hand is grasped a circle, the symbol either of eternity or dominion ; while the right, with the arm bent and fingers extended, points upwards, and perhaps thus typically expresses a future state of existence.

"The features of this interesting figure, which are however, sadly mutilated, can scarcely be recognised, nor can the head-dress that it wore be described. The prostrate figure at the feet of the king, and the first of the erect captives, are in the same deplorable condition. Enough, however, remains of the first standing figure to denote a difference of dress from the rest of the captives behind him. He is habited in the long robe, probably of the priesthood, which extends to his ankles. The next has a shorter robe, reaching only to the knees. The third has a similar short tunic, and the fourth a longer garment extending to the calf of the leg. Each alternate figure then to the end of the string is clothed in the dress of the second preceding him ; the last being distinguished only by a high conical cap, similar to that worn by the Persians of the present day. This last figure appears to have been subsequently added to the group, and is carved somewhat deeper into the rock, in a recess appropriated for the purpose.

"Scattered about on the face of the sculptured slab, but generally above the head of the figures to whom they apply, are legends commemorative of their names and pedigrees, the names

of the province which they misgoverned, or the Satrapies over which they misruled. These are also in the Persepolitan cuneiform, with their Medic equivalents. The third standing figure is, however, an exception to the rule, for his descriptive legend is inscribed on the skirt of his garment, and partly on the rock adjoining him. The Babylonian correspondents to these several legends are engraved on the pedestal which the sculptures occupy, thus forming one great whole, which, for elaborateness of conception and skill in design, is scarcely surpassed, or even equalled, by any single work of art in all Persia, for it contains, in addition to the sculptures, nearly a thousand lines of complicated writing."

This work of art is situated about a quarter of a mile north of the Caravanserai of Behistan and without the aid of ropes and ladder it would be a matter of serious difficulty to reach the spot. On the debris of the mountain an isolated stone of a triangular shape was discovered with a rough but well defined design of three figures a little under the natural size. Immediately above the Khan of Behistan and about a quarter of a mile from the tablet of Darius; a work, of greater magnitude than those described, has been designed. The face of the hill for 200 feet in length and above 60 in height has been scarped to some depth and retains to this day considerable freshness of appearance.

"Major Rawlinson supposes the excavated scarp was intended to receive, or to form, the back wall of a temple or palace; and the numerous aligned slabs, of a massive character, that lie in disordered array on the slope at the foot of the hill would confirm the supposition, and at the same time mark it as an unfinished structure, that from some cause had met with interruption a short time after the design was commenced. The face, as of the building was to have been approached from the plain by a terraced way built on the *débris* at the base of the mountain, and a few well-executed capitals at the back of the Khan, of an oriental order, attest it as a work of a Sassanian age. These capitals have carved on two of their sides the figures of a male and female, whose heads are surrounded by a halo like ring, and may represent Khusru Parviz and his beautiful Shirin. The other sides bear, in graceful foliation, the elegant shaped design of a Thyrsus, and are wrought in a coarse species of marble. In many parts, however, of the more recent work, we can trace, by its blackened and worn appearance, the chisel of an anterior period; and it is to this circumstance, and to the visible remains of the 'phallos' that lie extended in broken fragments in front of the scarp, we may identify it not only as the spot on which Semiramis established the worship of the fructify-

ing principle as instituted by Isis, but as the actual site of the tablet on which she caused her own likeness, and those of a hundred of her guards, to be portrayed by the statuary." A description of the Tak-i-Bostan sculptures, which were also visited by Major Rawlinson, is given in the report ; but they have been visited by other travellers, and the sketches of Sir Robert Ker Porter are accurate representations.

On the 15th of September, the caravan of Commander Jones left Kirmanshah and crossing the Mirikh by a bridge of one arch resumed their route towards Harunabad. At which place there is a part of a slab containing a Grecian inscription. The slab is looked upon by the ignorant inhabitants as a talisman preserving the district from fever and famine; they accordingly refuse to part with it. After leaving Kileh Zanjir, a ruined fort occupying a strong isolated position on the summit of a naturally scarped projection from the N. E. brow of Dalahu, the route was generally N. N. W. towards the town of Zohab. This place possesses a strong fort known as Ban Zardeh or as Kileh Yezdijird and the tomb of Baba Yadgar, which attracts numerous devotees. From Zohab the next march brought the caravan into the territories of Abdullah Beg, a sort of freebooter. Major Rawlinson presented him with a watch; but this he refused to accept, so soon as he heard it tick, alleging that he was ignorant of such things and that he believed some live animal was concealed within the case. Leaving the hill of Semiram a natural fastness terminating in the successive peaks of Sur Khushk, Sartak and Bam that rise to an elevation of 7,000 feet, about 5 miles to the right; the river Diyaleh was crossed at the Gundar ford. The river breaks through a defile in the high range to the NE. and pursues a west course to Semiram through a deep and precipitous gorge which is represented as capable of being defended by a handful of men against any numbers. When Major Rawlinson crossed, it had only about 18 inches of water upon it; but in the winter it must be wholly impassable. A little to the east of the ford the river is navigable for rafts and timber to the Tigris.

On the 25th of September, the town of Sulimaniyeh the capital of the Pachalic, was reached. It is a mere collection of small and mean houses containing only 500 dwellings. The narrative closes with an account of Ahmed Pacha, who in 1844 ruled over that part of Kurdistan and Commander Jones commenced his homeward journey on the 15th of September.

RESEARCHES IN LOWER MESOPOTAMIA.

Bombay Records, No. XLIII.—New Series.

IN March, 1850, Commander Jones set out from Baghdad on a surveying tour through a portion of Babylonia and Lower Chaldea. A steamer moving to allotted stations on the river; accompanied the movements of Commander Jones's party on land; thus enabling the land party to fix their position with great accuracy from day to day. The course of the expedition was along the west bank of the Tigris, partly on the line of the old Mosul road, which owing to the encroachment of the Arabs was abandoned some 50 years ago. Immediately to the east of a large canal called Nathriyat there are the remains of a large city called Abu Sakhr. It was upwards of a mile in diameter and is now quite levelled, the surface of the ground being strewn with brick and fine pottery. About an hour's ride from Abu Sakhr there are the ruins of an old town called 'Akbara. The tomb of Kef Ali is the only portion now standing, though it must have been an important place and owes its abandonment, like the other towns in the neighbourhood, to a great and sudden change in the course of the Tigris. The neighbourhood is visited by parties of Bedouin Arabs who remain concealed amongst the ruins in the hopes of meeting with caravans of pilgrims on their road to Samara. The capital of the Dijeil district in which Commander Jones was now travelling is a miserable village called Sumeychah. It numbers about 200 mud huts inhabited by cultivators of the Shiah sect. The district which includes 200 square miles of the purest alluvial land surrounded on all sides by water is farmed out for £877 sterling per annum. But little is known of the early history of the Dijeil canal which leaves the Tigris in the neighbourhood of an ancient town called Istablat. In A. D. 1213 it was a stream of 50 yards in breadth and of a proportionate depth and was spanned by a bridge which still remains. It is built on Saracenic arches having intermediate with them three minor arched sluices or ways; the whole structure is composed of fine kiln burnt bricks. Above the arches on either side there is an Arabic inscription in relief. The letters are composed of brick let into a frieze work tablet, enclosed within an ornamental border of great taste and beauty. A facsimile of the inscription is given in the report.

The next object of interest which was visited by the exploring party was the ridge called Chali Batikh hitherto identified with the Median wall of Xenophon. The ridge bears evidence of

great antiquity, but Commander Jones says that "the illusion that has hitherto existed of its being identical with the Median wall of Xenophon, or the rampart of Semiramis of Strabo, must be dispelled, for neither in its construction nor extent will it in any way answer the description of the ancient writers, being, in point of fact, a mere dike thrown up diverting for the course of water, and discontinued when that purpose had been accomplished." The modern Manjur was also visited and was identified with the ancient town of Opis. Excavations would doubtless confirm the identity and would besides develop many relics of a past age, for it was no inconsiderable place, but the emporium of a country which at the time of the Macedonian conquest possessed a revenue of £5,80,00,000 sterling. The awful change that has taken place is attributable in a great degree to the change in the course of the rivers; the appearance of the country denotes that some sudden and overwhelming mass of water must have prostrated everything in its way. The Tigris, as it anciently flowed, is seen to have left its channel and to have taken its present course through the most flourishing portion of the district. Towns, villages, canals, men, animals and cultivation must thus have been engulfed in a moment. The change in the bed of the Tigris was in all probability caused by an earthquake. The date of the irruption may be assigned to the era of Khusru Parviz. From Manjur Commander Jones traversed the country in a North East direction but his course is traced out in the map affixed to the report.

MEMOIR OF THE PROVINCE OF BAGHDAD.

Bombay Records, No. XLIII.—New Series.

THE Memoir was submitted to Government on the 19th of April, 1855 and is accompanied by the ground plan of the city of Baghdad. For five hundred years Baghdad was the abode of the Abasside Khalifs and with more or less interruption the seat of the empire of the world. "After the total destruction of Seleucia and Ctesiphon, where the episcopal chairs had been established by the first missionary fathers, the eastern metropolitans were invested here, and the title of Bishop of Babylon still pertains to the archiepiscopal see; at present more respected in the title than honoured in anything else. It

appears that the western side of the Tigris was the chosen site for the original Baghdad; the larger portion of the town; now to the east of the river, having risen from a military position, and enlarged afterwards to suit the growing extent of the population; as individual families settled from nomade life, or as immigrants from more distant places. The new city was added to also by the remnants still lingering around the ruins of Ctesiphon and Seleucia; and, with captives and others, either brought or invited from lands over which the early Khalifs extended their arms, the city and tracts around soon became a highly populated district. All writers enlarge upon the masses that comprised its population in its more prosperous periods, though there is great discrepancy in enumeration. At the funeral of Ibn Hanbal, a much-venerated Mahomedan sage, who died at Baghdad in A. D. 855, we are told eight hundred thousand men and sixty thousand women formed a procession to his grave, and that near twenty thousand infidels became converts to Mahomedanism on the day of his death. With every allowance for exaggeration, both in respect to this statement, and to the number of three hundred and sixty baths mentioned as being requisite to the purifications of its inhabitants by other authors, we must admit the fact of its multitudes in a great degree; especially as the deserted tracts, covered as they are with the broken remains of edifices and canals, speak in favour of its truth. The myriads that were slain after the sack of Baghdad by Halaku in A. D. 1257, and by (Tamerlane) in A. D. 1400, incredible as the accounts are, show how prolific the numbers were; the former, by the smallest accounts, having massacred in cold blood three hundred thousand of the defenders of the city; while the latter erected beyond the gates, as a trophy of his prowess, a couple of pyramids which were constructed of the heads of ninety thousand of its most influential people. At the present time the census is about sixty thousand, having in the last thirty years dwindled from one hundred thousand to this amount from various causes, the chief of which being a great plague and inundation in 1831, and minor ones in the forms of mal-administration by successive rapacious governors." The wealth of the world at one time appears to have centred in this spot and manufactures, commerce, sciences and arts all flourished under the fostering care of many of the Khalifs. "The splendour of the court at Baghdad in those days excelled anything that was known. It is true it was a display of barbaric magnificence, but the usages of the age must be considered in contemplating it. In the annals of Abulfeda we are treated with the programme of the pomp exhibited in the court of the Khalif Al Moktadar on the reception of an ambassador from Greece.

The army was drawn up to the number of one hundred and sixty thousand men. The Khalif himself, surrounded by his chief ministers and favourite slaves covered with gold and jewels, resembled a planet amid a galaxy of stars. Eunuchs, black and white, with inferior officers to the amount of eight thousand, served as a foil to these gems. Silk and gold-embroidered tapestry, numbering thirty-eight thousand pieces, ornamented the palace walls, and on a curious tree of gold and silver were perched a variety of birds whose movements and notes were regulated by machinery. Twenty-two thousand carpets covered the floors, and a variety of vessels, each splendidly decorated, floated on the broad stream of the Tigris before the windows of the palace, while a hundred lions in charge of their keepers lent a contrast to the glittering scene.

• "Its institutions boasted of authors, physicians, and philosophers; and in their libraries were stored a vast number of books, all manuscripts, for printing was not then invented. We may judge of their amount, when it is related that a doctor declined the invitation of a Sultan of Bokhara, because his books alone would have required four hundred camels for their transport.

"Money too must have been alike plentiful in its treasuries. The founder of Baghdad, Al Mansur, is reported to have left at his death about thirty millions sterling. His son expended three millions in a single pilgrimage to Mecca; and we read of a Vizier having founded a College at the charge of two hundred thousand pieces of gold, endowing it at the same time with an annual sum equivalent to seven thousand pounds. What, then, must have been the revenue which admitted of such a drain on the coffers of Baghdad? We learn from a financial document, drawn up by one Ahmed Ibn Mahomed during the reign of the Khalif Al Mamun, that from the various tributes received in specie and kind, it amounted to about £5,60,00,000 sterling. As a dependency of Turkey in 1854 its revenue is under £3,50,000. The enclosed area within the present walls of Baghdad contains seven hundred and thirty-seven acres; the eastern portion of the city extending over five hundred and ninety-one, and the western over one hundred and forty-six acres. The foundation of the Baghdad walls dates from the third century of the Hejireh, when alarms were first experienced from without. The decline of the place is well marked on the face of them, for there are marked upon them all shades of patchwork during successive centuries even to the 'wattle and dab' embankments, hastily thrown up as stop-gaps, where, to prevent smuggling, the authorities have been too poor to give a more substantial repair. It has ten round towers, half enclosed within the outer wall, which, where they are situ-

ated, forms a semi-lune around them. These are solid constructions of brick with embrasures, and some few cannon on each. Many of them are of large calibre, long and heavy, and fine specimens in copper and brass of the ornamented guns such as were cast in the flourishing periods of the Turkish empire. Most of them were cast in Baghdad, which cannot now boast of a foundry capable of making a small ordinary cannon. There are some iron pieces of various nations, brought, doubtless, by the Tigris from Basreh, where they have been procured from foreign ships. Most of the pieces are sadly honeycombed, and their enormous vents show they have had much use in their day. Little damage need be apprehended from them now, crippled as they are in carriages; some of them even lying on the platform without any at all. There is some talk of converting them into copper and brass money; but the difficulty is, how to break them up for coining: and to remove them bodily. A strong embankment girts the ditch on the outside; and situated at irregular intervals between the round towers are buttresses, or half bastions of unequal dimensions, to give strength to the *escarpe* or *revetment* of the wall, as well as to protect it by a flanking fire, being, like the wall itself, loopholed for musketry. On the inside this wall is exposed only for thirteen feet, the rest being concealed by a thick rampart of earth, which strengthens it and serves at the same time to protect the *enceinte* from inundations of the river, which fills the moat and presses hard upon the fortifications. The wall affords some shelter to its defenders by being poorly arched, somewhat in the form of casemates; over these is a roadway a few feet broad; the top of the wall, which is embattled, acting as a parapet above it. The circuit of the eastern fortifications, including the river face, is ten thousand six hundred yards, that of the west being five thousand eight hundred yards; making an entire length of sixteen thousand four hundred yards of wall, an extent of brick work nearly equal to nine miles and two and a quarter furlongs of English statute measure. Such, however, is its state, that it offers scarcely any impediment to a well appointed force, as a breach could be effected any where in a few minutes' cannonade; and the numerical strength of the garrison and fighting population is so small as to be incapable of covering the defences, if threatened in more points than one. On the river face the town is quite open; and, with small steamers, or gunboats, judiciously anchored so as to command the *sheriahs*, or landing-places, an invading force might take possession of the place, either through the windows or balconies of the houses, or by a deliberate march through the open streets. The citadel offers only the same defences as the town." Views of Baghdad are attached to the memoir to which are appended

the prices of the different sorts of provisions procurable in 1855 and tables exhibiting the disposition of the Eastern portion of the town. Bullocks then cost from 800 to 600 piastres each, coffee sold for about 225 piastres per 18 lbs. and camels for slaughter at from 400 to 1000 piastres, potatoes and spirits were not always procurable and bread sold, for 3 piastres a pound. The coins in use are very numerous and of all nations; but that with the greatest circulation is the Mahomed Shah Keran and the Shamie is used amongst the Arab tribes to the south of Baghdad who prefer it to every other. "In reducing these coins to their equivalent in Rupees, the Riege Piastre has been taken as the standard at the rate of 21 per Mahomed Shah Keran, and 209 M. S. Kerans per 100 Rs. in consequence of its being that by which the value of the others is computed. All accounts are however, kept by the native merchants in Kammeri Beshlics." The Pachalic of Baghdad at the present time extends from the Northern shores of the Persian Gulf along the Euphrates river as far upward as Anah where the Aleppo districts commence. "From thence a line drawn across Mesopotamia to the Hamrin range of hills (where it crosses the Tigris) and led eastward so as to include the province of Sulimanyeh in Kurdistan, bounds it to the north, its eastern limit being then defined by the line of the Shirwan and Diyaleh rivers as far as Khanakin, whence it skirts the foot of the Zagros, including the great plains as far as the Kerha river west of Hawizeh, and thence to the angle formed by the meeting of the Shat al Arab and Mahomerah streams." With the exception of Baghdad itself there is scarcely a fixed abode deserving the name of a town, though Basreh and others are dignified with this title. The great plains of the Tigris are inhabited by nomades whose various tribes give great trouble to the Government. The most powerful are the Montafik, between Semaweh and Basreh, and the Beni Laam who inhabit the plains east of the Tigris and south of the Diyaleh as far as Kut al Amareh. The form of administration in Baghdad is based on that of Constantinople. The old despotic rule no longer continues and there is now a Council, at which the Pacha presides, which hears and determines all cases. The customs' duties of Baghdad have been in the decline for many years, owing to the opening of the northern roads for the entrance of Russian and English manufactured goods into Persia and Asia Minor by Syria and the Black Sea. The report gives the length of the Caravan journeys from Baghdad to various places, and proceeds.

The Euphrates has entirely lost its character as a navigable river, for many years past, owing to the embankments which formerly controlled the spring floods between Sukesh Sheukh and

Korneh having been swept away about 10 years back ; and the character of the tribes on its banks offers a serious bar to its usefulness for the purposes of commerce. The Tigris, on the contrary, is navigable from the sea to Baghdad at all seasons of the year by very ordinary steam vessels drawing three feet of water and the tribes are less violent and exacting than those on the Euphrates. Both rivers however could, under a good Government, be made navigable ; but as it is, they become more destructive and less useful every year. " The tides influence the stream of the rivers as far as one hundred and fifty miles from the sea, but the flood is not observed to run contrary to their course for the last thirty miles of this distance, in which it operates as a check upon the current, and this only when its force is not very strong during the freshes the flood is sometimes observed to fail altogether except on the spring tides ; at which times the rise and fall, from the bar to Basreh, averages about eight feet, and this diminishes gradually to the Hud river on the Tigris and to Negayb on the Euphrates, where a couple of inches of daily swell serves to mark the limit of this phenomenon in nature ; and taking as the zero of the scale the junction of the Tigris and Euphrates, ten inches for every twenty miles of river course will, as near as possible, mark the annual gradations in rise from the lowest level at the various places where the distances touch.

" The best native boats in use are well adapted for their work. They are strongly built ; and, though rough, are of an excellent model. They draw, when laden, from four and a half to six and a half English feet, according to the season. These alone go as far as Basreh. They carry from eighty to one hundred and twenty tons, and sail well when they can profit by the wind, which is very seldom on the passage up stream. The journey from Basreh to Baghdad occupies with a single band of trackers from forty to sixty days ; with a double set, a cargo has been brought to the city in twenty-two days. The distance by the river is little short of five hundred miles. On the upper part of the stream near Baghdad there is another form of boat used called Siffineh and Teradeh. They are curiosities in model and construction, and are entirely coated with bitumen on the outside, or the stream would otherwise flow through them. They cannot have changed from the earliest periods ; indeed, it is not unlikely that their lines are those of the Ark of the Patriarch diminished only to suit modern requirements. The first named is used for bringing small wood from the jungles at no great distance, for the supply of the town and for other local wants. The second is small and chiefly employed in net fishing. The better sort of fuel is, however, brought to Baghdad in the Basreh

trading boats, for it is plentiful only in the jungles around Kut and the Hye river. The Gufa, or 'coracle,' a wicker basket coated with bitumen, is the ordinary vessel in use for passing the Tigris and for service near the town. It is very ancient, being mentioned by Herodotus and portrayed also on the sculptures of Nineveh." Commander Jones here gives a list of the various animals of the province and appends a report upon the tribes of Irak family by family.

THE TOPOGRAPHY OF NINEVEH.

Bombay Records, No. XXIII.—New Series.

COMMANDER Felix Jones observes that though the researches of Layard and Botta have given us an insight into the economy of the Assyrians, yet they have not described Assyria as she is and it is this want which he wishes to supply.

The site of ancient Nineveh was admirably selected. Undulation and vale, ridge and plain alike capable of tillage offered a sufficiency of pasture. Crossed too as the tract is by many water-courses and generously visited with dews and winter rains the tract was then as now doubtless a most fertile region. Of the Nineveh ruins the features which first attract notice are the hills of the Jebel Maklub and Mar Daniel, but the attention is soon drawn from these to the numerous tumuli which cover the plain. "They are all the undoubted work of the human race, but whether of the Assyrian period or of a Parthian era, there are at present some doubts. Some refer them to the latter, principally from the absence of any thing tangible to theorize upon in the more regular tumuli; most of which, as we at present see them, being mere mounds of earth elevated in different places to heights varying from 20 to 80 feet above the plain. Others, such as the great pyramid at Nimrud, are found to be regular structures of sun-dried brick; observable only when the interior of the mound is arrived at, from the action of the elements on the outside having, in the course of time, reduced the material to the consistency and form of its original earth. The principal ones have square platforms, at present but little raised above the plain, though evidently connected in some way with the higher structures adjoining them. Though now rounded, and for the most part preserving a beautiful conical outline, we are disposed to think most of them were originally of a pyramidal form, the gradual

crumbling of the apex and falling *débris* having served to obliterate the angles in the lapse of time."

The Tigris, Zab and Khosr-su were the rivers which watered Nineveh and served besides as a means of defence. The principal wall is that on the east side. It is raised on the crest of a spur of the rock, selected for the site of the town, and forms a slight curve in the direction of the rock with its convexity to the north-east by east. This wall crossed the Khosr. The wall to the north averages, in its present crumbled state, forty-six feet above the actual soil, and a slope partly artificial and partly formed of the debris of the wall forms a glacis of 130 feet horizontal width into the city Moat which is 10 feet deep. This portion of the wall is 6,800 feet in length while that to the south of the Khosr varying little from it in height or breadth, is 9,200 feet long having, at 4,000 feet, where the main road to Baghdad passes through, two elevated tumuli, from which much pier masonry bearing cuneiform legends has been extracted. At 7,850 feet from the Khosr there is another elevation which probably acted as a keep to the work. The north wall extends from the North East angle of the city in a perfectly straight line, its length is 7000 feet nearly. To the east of a gateway in this wall, which now leads to the great mound of Koiyunjik, there is an elevated circular mound covering some splendid specimens of colossal sculpture. The west face of the city was originally washed by the Tigris and was further protected by a wall 13,600 feet long, which runs, during 3,500 feet of its course at an accurate right angle from the North wall first described. This portion is broken by many gaps and its dimensions as compared with the eastern wall are inferior and low.

In general language the *enciente* of Nineveh may be said to form a tuncated triangle the sides of which figure have a length respectively of 16,000, 7,000, 13,600 and 3000 feet; thus the circuit of the city was altogether seven miles and four furlongs of English statute measure. The contained area is about 18,000 acres, and if to each inhabitant of the city be allotted 50 square yards Nineveh would only have accommodated a population of 1,74,000 persons. "But of the existing remains of Nineveh, the most remarkable and interesting are undoubtedly the great mounds bearing, at the present time, the appellations of Koiyunjik and Nebbi Yunus." Koiyunjik has proved one of the greatest repositories of Assyrian art and covers a space of about 100 acres of ground. Nebbi Yunus the other artificial tumulus covers an area of about 40 acres.

Upon this mound there is a conspicuous white building said to be the tomb of the prophet Jonah. The site, which is therefore in Mahomedan eyes sacred, is used as a burying place.

Thus the excavation of the tumulus is excessively difficult and its contents are still unknown; though no one doubts but that it contains the remains of such a stately edifice as its neighbour. "The above eminences exhibit the only vestiges that are in any way remarkable within the area of Nineveh. There are, however, some low mounds of *debris* accumulated north-west of Koijunjik, which point out the situations of buildings; and, on the rising grounds to the east, here and there, may be traced the alignments of others just above the surface of the soil. They offer nothing of interest, and we agree in the opinion given by other travellers, that the enclosure never contained any vast connected pile of buildings, like our modern cities, but on the contrary, exhibited spaces of garden, and occasionally plots of open ground spread over with tents, as may be seen at present within the *enceinte* of Baghdad." With regard to the site of Nineveh, Commander Jones differs in opinion from Layard, who transfers the capital of Assyria to Nimrud, which place as compared with Nineveh is, in size, insignificant. What remains of its *enceinte* occupies an area of a little less than a thousand acres. "The northern half of the city only appears to have been protected by regular walls, which are still traceable; but, unlike similar structures at Nineveh, they could not have been remarkable for great altitude or dimensions. The more prominent and regular walls of the city are as near as possible in the direction of the true cardinal points; the northern one having an outwork or projecting buttress just midway in its length. Gates appear to have been situated at uncertain intervals in the wall." It was from Nimrud that Layard obtained the majority of his Assyrian remains. The report concludes with a short account of the Nineveh survey, and tables are appended for the construction of the general map of Assyria and Mesopotamia.

COMMERCE AND SHIPPING OF THE STRAITS SETTLEMENTS.

For 1854-55.

DETAILED statements of the trade of the Straits Settlements have been published during some years. The means for obtaining these returns consist of an office at each station for the registry of imports and exports. Regulation III. of 1833 provided that no goods were to be landed or shipped without certain preliminary forms, under a penalty of 500 Rs.; but the Clauses do

not state who is liable to the penalty, nor is there any discretion allowed in imposing it. The most gross and the most minute infraction of the law are subject to a like penalty. Under these circumstances the returns made to the office are purely voluntary. They may be made or they may be withheld. They may be correct or merely imaginary. There are no means of testing their accuracy and no advantage can be gained by giving in a bona fide statement. If then it be deemed that the correctness of the returns is more important than the freedom of the Ports measures must be taken to enforce the former whatever may become of the latter.

The statement for the Prince of Wales Island was drawn up under the direction of the Resident Councillor and submitted to the Governor of the Straits Settlements on the 1st of February, 1856.

The tables exhibit the quantity and value of the imports and exports by sea, the quantity and value of the imports re-exported, and the number and tonnage of the square rigged vessels which arrived and departed during the year. Owing to some places of consequence not being in the printed forms, the Nicobars, Arracan, Moulmein and Rangoon are included under the head of Pegu, Pungah under the head of Siam, and the West Coast of the Peninsula under the head of Sumatra.

The total value of the trade at Prince of Wales Island, or Penang, according to the periodic statements appears to be

For 1851-52,	For 1852-53.
Rs. 1,59,84,621,	Rs. 1,68,73,475.
For 1853-54,	For 1854-55.
Rs. 1,95,17,474,	Rs. 2,05,03, 774.

From the above statement it will be seen that the trade though large is but slightly increasing.

The accompanying table exhibits the value of the imports during the years 1853-54 and 1854-55. But, out of Rs. 1,02,22,373 which is given by the table as the value of the imports, there was Rs. 19,57,408 treasure. The chief articles of import are cotton goods, which in 1854-55 were valued at Rs. 14,48,882.

**COMPARATIVE STATEMENT of the Value of Imports at Penang during the Official Years
1853-54, 1854-55.**

IMPORTS.		1853-54.	1854-55.	Increase.	Decrease.
Great Britain, ..	..	10,35,726	7,66,556	...	2,69,170
North American, ..	..	1,31,098	3,37,978	2,06,880	...
Calcutta, ..	..	10,09,704	10,29,564	19,860	...
Madras, ..	..	..	2,97,816	2,97,816	...
Bombay, ..	..	..	31,002	31,002	...
China, ..	..	2,46,173	3,68,517	1,22,344	...
Siam, ..	..	..	13,55,913	13,55,913	...
Sumatra, ..	..	17,38,074	26,33,447	8,95,373	...
Malayan Peninsula, ..	..	4,64,743	..	..	4,64,743
Miscellaneous, ..	..	42,64,796	34,01,580	..	8,63,216
Total, Company's Rupees, ..		88,90,314	1,02,22,373	29,29,188	15,97,129
Increase, Company's Rupees, ..		...	88,90,314	15,97,129	...
			13,32,059	13,32,059	

The value of the exports from Penang during the official year 1853-54, 1854-55 is shewn by the statement appended:—

*COMPARATIVE STATEMENT of the Value of Exports at Penang during the Official Years
1853-54, 1854-55.*

EXPORTS.		1853-54.	1854-55.	Increase.	Decrease.
Great Britain, ..	..	17,45,331	16,43,336	...	1,01,995
North American, ..	..	5,99,789	13,04,285	7,04,496	...
Calcutta, ..	..	5,84,953	8,76,579	2,91,626	...
Madras, ..	..	..	3,13,590	3,13,590	...
Bombay, ..	..	..	74,057	74,057	...
China, ..	..	6,81,608	8,71,747	1,90,139	...
Siam, ..	..	..	9,39,585	9,39,585	...
Sumatra, ..	..	20,73,566	29,67,523	8,93,957	...
Malayan Peninsula, ..	..	7,93,651	..	...	7,93,651
Miscellaneous, ..	..	41,48,262	31,96,842	...	9,51,420
Total, Company's Rupees, ..		1,06,27,160	1,21,87,544 1,06,27,160	34,07,450 18,47,066	18,47,066
Increase, Company's Rupees, ..		..	15,60,384	15,60,384	

The chief products of Penang and forming an important item in the exports are spices and sugar, the growth and manufacture of the latter being now almost entirely confined to Province Wellesley, the slip of territory on the Peninsula forming the Harbour of Penang. The quantity of sugar exported shews the extent to which the manufacture is now carried on.

Export of Sugar from Penang.

1851-52,	1852-53.
Piculs 48,510,	Piculs 54,888.
1853-54,	1854-55.
Piculs 56,875,	Piculs 69,352.

The value of the spices exported during 1854-55 was Rs. 7,86,235. The imports re-exported during the same year were valued at Rs. 99,25,476 and the treasure re-exported was Rs. 23,84,938. The number of square rigged vessels which arrived at the port from ports not subject to the Bengal Presidency was 365 and their tonnage was 79,095 tons. The number of square rigged ships which departed to ports not subject to the Bengal Presidency was 363 and their capacity was 76,902 tons. In addition 1,322 native craft of a total tonnage of 27,813 tons arrived, and 2,062 with a tonnage of 35,014 tons departed.

The Governor of the Straits Settlements in transmitting the returns of the export and import trade of Malacca observes that under the present system they are a mere set of figures of "no value or use to any one; and in addition mentions that if the Governor General in Council will permit him to prepare trade statements of his own, he will engage without further expense to furnish within a reasonable period all possible information "that can be useful and interesting both to those on the spot and to those at a distance; but if it be considered indispensable that the information required should be drawn up in the form used in the Duty Ports" he must apply for an enlarged expenditure and at the same time cannot add in any way to the value or interest of the information to be afforded.

The great value of trade statements seems to Mr. Blundell to be "to afford the Mercantile world the means of obtaining, at the earliest practicable date, some knowledge of the amount, nature and course of the trade of a Port, and the earlier this information can be given to the Mercantile Community the more valuable will such Statements become; but to comment in 1856 on a trade of which the Returns do not extend beyond April, 1855, seems unnecessary, as it certainly will be uninteresting to those who may be connected with the trade." Owing to the opening first of Penang and then of Singapore the trade of Malacca

is but a shadow of what it formerly was. The value of the imports during 1851-55 was Rs. 35,77,558 of which Rs. 11,29,738 was the value of the imported treasure. The merchandise exported during the same year was estimated at Rs. 27,47,382 and there was treasure exported to the amount of Rs. 7,29,727. The chief item of the export trade is tin, of which a statement is annexed :—

1851-1852.		1852-1853.		1853-1854.		1854-1855.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Piculs.	Rupees.	Piculs.	Rupees.	Piculs.	Rupees.	Piculs.	Rupees.
25,487	9,17,532	22,185	7,98,660	20,463	10,23,150	21,928	11,15,674

The number of ships including country craft which arrived was 1,507 and their total capacity was 57,630 tons. The ships which departed during the year possessed a tonnage of 66,885 tons and their number was 1,428. All the ships both of the arrivals and departures were under British colours with the exception of some native craft.

The Resident Councillor at Singapore in submitting the trade returns for 1854-55 remarks that "although there is an apparent decrease in the trade, yet this ought to excite no surprise considering the large increase as shewn in the returns for 1853-54; the year ending 30th April, 1856 will exhibit results quite as satisfactory."* The aggregate trade at the date of the transmission of the statement was little short of 10 millions sterling, and the influx of shipping; the demand for land and godowns suited for commercial purposes; the rapid extension of the town; the increase of banks and the stability of merchants and all traders indicated a gratifying and high state of prosperity.

The report further states that it would be quite a waste of time to dilate upon the defective state of the commercial Returns which accompany the despatch.

"The value of Merchandise imported and brought on the Returns for 1854-55, independent of goods transhipped, and the intermediate trade with Penang and Malacca, aggregated Rupees 2,85,36,543, and the Treasure and Bullion Rupees 81,57,894,

*The value of the goods exported from Singapore during 1855-56 was Rs. 4,42,72,290 which shews an increase of Rs. 1,02,72,317; whilst the value of the import was Rs. 49,14,41,675 which exhibits an increase of Rs. 1,16,95,428.

showing a decrease compared with the previous year as here elucidated :—

Merchandise imported in 1853-54,	Rupees	31,915,468	0	0
Merchandise imported in 1854-55,	"	28,536,543	0	0

Decrease, Company's Rupees 33,78,925 0 0

Treasure and Bullion imported in 1853-54,	Rupees	95,61,443	0	0
Treasure and Bullion imported in 1854-55,	"	81,57,894	0	0

Decrease, Company's Rupees 14,03,549 0 0

The estimate value of Exports in 1854-55, not including Penang and Malacca, was as follows, compared with the year 1853-54 :

Merchandise exported in 1853-54,	Rupees	2,38,97,889	0	0
Merchandise exported in 1854-55,	"	2,35,15,720	0	0

Decrease, Company's Rupees 3,82,169 0 0

Treasure and Bullion exported in 1853-54,	Rupees	1,01,80,176	0	0
Treasure and Bullion exported in 1854-55,	"	69,37,322	0	0

Decrease, Company's Rupees 32,42,854 0 0

The amount of Imports and Exports, including Treasure to and from Penang and Malacca, was as under :

In 1853-54,	Rupees	67,48,966	0	0
In 1854-55,	"	65,98,141	0	0

Decrease, Company's Rupees 1,50,825 0 0

The general result of the Commerce of Singapore during 1854-55, as exhibited in the Return, is as follows :

	Merchandise.	Treasure.	Total.
Imports,	2,85,36,543	81,57,894	3,66,94,437
Imports, Penang and Malacca, ...	24,13,266	6,38,544	30,51,810
Exports,	2,35,15,720	69,37,322	3,04,53,042
Exports, Penang and Malacca, ...	17,29,710	18,16,621	35,46,331
Total, Company's Rupees, ...	5,61,95,239	1,75,50,381	7,37,45,620

Every dependance may be placed in the Shipping Returns particularly of Square-rigged Vessels; the inward Tonnage of all classes aggregated, 4,00,293 Tons.

	Square-rigged Vessels.	Tons.
Arrived in 1853-54,	1,028	3,46,997
Arrived in 1854-55,	1,030	3,19,080
Increase,	2	27,917 Decrease.

	Junk, Prows, &c.	Tons.
Arrived in 1853-54,	2,595	87,390
Arrived in 1854-55,	2,401	81,213
Decrease,	194	6,177

The chief productions of Singapore and forming a considerable part of her export trade are pepper and gambier, both of which are extensively cultivated in the interior. The value of the Gambier exported in 1853-54 was Rs. 13,29,414 and the value of the pepper was Rs. 14,12,201. The amount of goods imported for re-exportation is comparatively speaking unimportant.

THE JAILS OF THE MADRAS PRESIDENCY.

For 1855.

On the 14th of October, 1856, the Inspector of Prisons of the Madras Presidency submitted to the Government a report upon the sanitary condition of the jails and regretted the delay which had taken place in its submission.

He observes that the present report is confirmatory of the fact that certain classes are peculiarly susceptible of disease when confined in jail, and that to such a sentence of imprisonment is almost a sentence of death.

The average number of prisoners in the jails at any one time of the year 1853-54 was 6372 and the average percentage of deaths was 5·3 whilst 97·4 underwent treatment for disease.

The average strength of prisoners during 1854-55 was 6,535 and the percentage of deaths to the average strength was 4·9 whilst those under treatment were 102·7 per cent. This exhibits a decrease in the mortality when compared with the preceding year. For, though the actual admissions into hospital have slightly increased as 105· to 100· per cent. yet the mortality has been less by a $\frac{1}{2}$ per cent. or as 5·6 to 6·1. In only two of the Jails has epidemic disease prevailed to any serious extent, cholera appeared in the Salem Jail and small-pox at Calicut, in the former 38 casualties from 57 seizures appear in the return

and in the latter 32 deaths from 89 attacks. The improved health of the prisoners is mainly owing to improvement in ventilation, greater accommodation and greater cleanliness. The gaols of Coimbatore, Combaconum and Madura shew the same decided unhealthiness as they have done for many years and yet no gaols in the presidency have had the same amount of attention paid to them. At Bellary the water is a cause of disease and at Madura, Coimbatore and Salem "it is so bad that any one tasting it can at once perceive it" In no instance during 1854-55 has disease been engendered by employment; on the contrary, the occupations of the prisoners appear to have been conducive to their health.

Amongst the gangs of prisoners employed on the roads or on special work, as at Paumbaum, although the admissions into hospital have been numerous 1063 from an average strength of 334, yet the ailments have generally been of a trivial nature and readily amenable to treatment. The greatest number of admissions have occurred at Paumbaum where the nature of the work exposes to slight accidents and febrile attacks, but the mortality has been but small.

Table shewing the number of Admissions and Deaths in each Gang of Prisoners from 1849 to 1854, contrasted with the results of 1855.

		Strength of Gangs.	Admissions.	Treated.	Died.	Cholera		Percentage of			
						Admitted.	Died.	Admissions to strength.	Deaths to strength.	Deaths to treated.	Deaths to strength ex-cluding cholera.
From 1849 to 1854,	Guindy, ...	872½	932	952	53	38	26	106·8	6·07	5·5	2·99
	Paumbum, ...	1,013½	2,977	3,026	23	...	...	293·8	2·2	0·7	2·2
	Moonchoultry,	379½	1,108	1,126	18	4	1	291·02	4·7	1·5	4·4
For 1855,	Guindy, ...	185	148	156	3	2	2	109·6	2·2	1·9	0·7
	Paumbum, ...	134	630	636	2	...	...	170·1	1·4	0·3	1·4
	Moonchoultry,	55	284	299	10	9	5	516·3	18·1	3·3	9·99

The relative healthiness of the several prisons of the Madras Presidency will be readily perceived from the accompanying table which shews the average strength of the prisoners with their sickness and mortality in 1855 as contrasted with 1854:—

JAILS.	1854.				
	Average strength.	Treated.	Died.	Percentage of	
				Treated to	Deaths to
				Average strength.	Average strength.
House of Correction, ...	225 $\frac{1}{2}$	278	9	123.5	4.0
Chittoor,	451	545	18	120.8	4.0
Nellore,	384	110	26	28.6	6.7
Chingleput,	274 $\frac{1}{2}$	136	13	49.6	4.7
Guntoor,	122	116	2	95.0	1.6
Cuddalore,	427 $\frac{1}{4}$	370	17	86.6	3.9
Mercara,	29	83	2	286.2	6.8
Trichinopoly,	383 $\frac{1}{2}$	178	18	46.4	4.6
Coimbatore,	244	90	10	86.8	4.0
Combaconum,	194 $\frac{1}{4}$	512	21	263.9	10.8
Madura,	200 $\frac{3}{4}$	292	6	145.2	2.9
Salem,	140 $\frac{1}{4}$	252	11	180.0	7.8
Negapatam,	79 $\frac{3}{4}$	149	19	186.2	23.7
Tranquebar,	50 $\frac{1}{4}$	129	2	258.0	4.0
Tinnevely,	142 $\frac{1}{2}$	197	9	138.7	6.3
Cochin,	42	50	5	119.0	11.9
Myavaram,	14 $\frac{1}{2}$	41	1	292.8	7.1
Paulghautcherry,	76 $\frac{1}{2}$	55	...	72.3	...
Masulipatam,	262 $\frac{1}{2}$	106	7	40.4	2.6
Rajahmundry,	194	138	5	71.1	2.5
Vizagapatam,	176	249	7	141.4	3.9
Chicacole,	183 $\frac{1}{2}$	125	15	68.3	8.1
Itchapore,	49 $\frac{1}{2}$	18	4	36.7	8.1
Bellary,	412 $\frac{1}{2}$	273	25	66.2	6.0
Cuddapah,	451 $\frac{3}{4}$	508	20	112.6	4.4
Cumbum,	39 $\frac{3}{4}$	30	4	76.9	10.2
Kurnool,	131 $\frac{1}{2}$	226	14	172.5	10.6
Tellicherry,	160	159	1	99.3	0.6
Calicut,	319	247	19	77.4	5.9
Mangalore,	239 $\frac{1}{2}$	176	23	73.6	9.6
Honore,	168 $\frac{1}{2}$	189	2	112.5	1.1
Sircee,	26 $\frac{1}{2}$	86	...	380.7	...
Cannanore,	76	99	3	130.2	3.9
Total,	6,372	6,212	338	97.4	5.3

JAILS.	1855.				
	Average strength.	Treated.	Died.	Percentage of	
				Treated to	Deaths to
	Average strength.			Average strength.	Average strength.
House of Correction, ..	221	136	8	61.5	3.6
Chittoor,	432	490	8	113.4	1.8
Nellore,	358	43	11	12.0	3.0
Chingleput,	260	248	11	95.3	4.2
Guntoor,	124	123	8	99.1	6.4
Cuddalore,	318	275	16	86.4	5.0
Mercara,	40	94	4	235.0	10.0
Trichinopoly,	368	257	16	69.8	4.3
Coimbatore,	289	144	14	49.8	4.8
Combaconum,	163	471	18	288.9	11.0
Madura,	188	307	17	163.2	9.0
Salem,	143	265	40	185.3	27.9
Negapatam,	60	79	7	131.6	11.6
Tranquebar,	57	120	2	210.5	3.5
Tinnevely,	171	193	3	112.8	1.7
Cochin,	43	60	1	139.5	2.3
Myaveram,	24	76	1	316.6	4.1
Paulghautcherry,	98	135	3	137.7	3.0
Masulipatam,	234	244	4	104.2	1.7
Rajahmundry,	173	143	14	82.6	8.0
Vizagapatam,	160	220	4	137.5	2.5
Chicacole,	195	96	8	49.2	4.1
Itchapore,	65	34	2	52.3	3.0
Bellary,	565	438	15	77.5	2.6
Cuddapah,	448	616	12	137.5	2.6
Cumbum,	40	32	...	80.0	...
Kurnool,	118	113	6	95.7	3.0
Tellicherry,	160	114	2	71.2	1.2
Calicut,	342	483	37	141.2	10.8
Mangalore,	234	181	16	77.3	6.8
Honore,	169	138	6	81.6	3.5
Sircee,	30	57	2	190.0	6.6
Cannanore,	73	110	2	150.6	2.7
29 65 Total,	6,363	6,535	318	102.7	4.9

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THE Governments of India publish on an average a volume every four days. From Reports affecting the entire Empire to accounts of local drainage, from the opinions of the ablest officers to the cost of a cutcha bye-road in a frontier province, every thing finds a place in these publications. There is scarcely a subject connected with Indian Administration on which they do not exhaust official knowledge. There is no officer in the country who may not obtain from them, in reference to his special task, all the advantages of experience. The information thus vast is, however, widely scattered. The Records of one Presidency are scarcely known in another. The books are not very readily procurable, and above all they are like all other blue books dry, ill-digested, and overlaid with detail. It costs an hour to find a fact, and in India men who care about facts cannot spare hours.

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A word may be necessary on the arrangement adopted. It is intended that the most important subject should have the largest space, but in estimating the relative importance of the records the Compiler has been compelled to rely on his own judgment. Usually all subjects of imperial interest have the preference, statistics occupy the next place, and subjects purely historical the last. They are not very important, and not at all interesting, but they can only be condensed to a certain point. The present Number contains in fact two Numbers, the Mutinies having for a time made it impossible to collect books in September.

26 JY 65

THE
ANNALS
OF
INDIAN ADMINISTRATION.

TEA CULTIVATION.

India Records, No. XXIII.

BHURTPOOR, one of the Kumaon Plantations is situated "eight or ten miles to the Eastward of Nainee Tal, and is at an elevation of about 4,500 feet above the level of the Sea. It consists of a succession of terraces reaching from the bottom to the top of a small Hill; the soil is composed of light loam mixed with small pieces of clay-slate and trap or green stone, of which the adjacent rocks are chiefly composed." It is about six acres in extent and in high condition. A large tract of land has been set apart in the adjoining hills for its extension, a portion of which has been already cleared. Generally in Mr. Fortune's opinion the land on the estate is unequal, and he would propose that the more favourable spots should be selected at first for the cultivation. The Plantations of Lutchmesir and Kuppeena "are on a Hill side near Almorah, about 5,000 feet above the level of the Sea, and together cover about seven acres of land." The soil is well adapted for Tea, and the bushes in good condition. Kuppeena is perhaps the best, as many of the plants in Lutchmesir appear to be getting old. Hawulbaugh and Chullar "are situated about six miles North-West from Almorah, at an elevation of 4,500 feet above the Sea. In 1854, Dr. Jameson states that Hawulbaugh covered fifteen acres, and Chullar thirty." The former has some excellent land, but the forest and fruit trees though they look pretty injure the Tea. They should be cleared away. The young plants moreover appear to have been planted somewhat carelessly. The mode of gathering the leaves also requires improvement. At present too many leaves are taken away from the plants, which has the effect of stunting them. The Kutypoor estate is a large tract of land which "has been

taken up near the head of the Byznath Valley, about thirty-five miles Northward from Almorah." A considerable portion of the tract is well adapted for Tea, but some of it is much too wet.

The Gurlhwal Plantation "is in Eastern Gurhwal, near the village of Paorie, in Latitude 30° 8' North, and Longitude 78° 45' East. It consists of a large tract of terraced land extending from a ravine in the bottom of a valley to more than 1,000 feet up the sides of the mountain. The lower portion of this land is said to be about 4,300 feet above the Sea, while the top of the surrounding mountains are from 7,000 to 8,000 feet." Part of this Plantation only is well adapted to the cultivation, and some thin stony land appears to have been planted within the last few years. On the good land the plants are succeeding very well, but on the whole Mr. Fortune was disappointed in the Plantation. The expediency of carrying the Plantation higher up the mountain seems very doubtful. The bushes look as if they wanted more heat.

The Deyrah Dhoon Farm. In 1850 Mr. Fortune found this Farm anything but flourishing. In consequence of his suggestions the system of cultivation was changed, the trenches were filled up, irrigation was discontinued, and more judgment was exercised in gathering leaves from young plants. The result has been most satisfactory. The supply of labour is deficient, and only a portion can be said to be under cultivation. Mr. Fortune has seen no finer Plantations in China. The plants are in high health, large and bushy, and yield annually large crops of leaves. It is not, however, expedient to plant on land but half ready.

The Punjaub Plantations. The Nagrowta Farm "is situated in the Kangra Valley about nine miles from the Old Fort, and covers apparently about five acres of land. It was planted in 1847, and consequently has been in full bearing for several years. In 1855 it produced 1427 lbs. of Tea, or about 330 lbs. per acre. The soil is a brownish loam, moderately rich in vegetable matter, and well suited for Tea cultivation. The plants are healthy and vigorous." The Bowarnah Farm "is another small experimental Plantation further to the Eastward in the same valley, and about twenty miles from Kangra. It appears to be five or six acres in extent, and was planted about the same time as the former." It yields upwards of 300 lbs. per acre. The soil is a brown loam very well suited for the cultivation. The Holta Farm "is about 26 miles North-East from Kangra, at the foot of the high mountain range, and nearly 4,000 feet above the level of the Sea. Here snow falls annually and covers the ground for several days at one time. The high

mountains behind are white with snow for the greater part of the year.

"The extent of this Plantation is stated to be about 1,200 acres, and of these 700 are already under cultivation. About 20 acres were planted in January, 1852, 300 in 1853-54, and 380 in 1855-56." The soil is a yellow clay with a surface rich in vegetable matter. It is admirably adapted for Tea cultivation. The plants are healthy, vigorous, and full-bearing, and irrigation has been avoided with most satisfactory results. Too many leaves however are plucked off, young as well as old, a matter of considerable importance.

Mr. Fortune considers that the Himalayas are excellently adapted to the cultivation of Tea, but some knowledge of the plant and of horticulture is required to make success certain. It is a great mistake to suppose that Tea will grow on land too poor for anything else. Tea in order to be profitable requires a good sound soil, a light loam well mixed with sand and vegetable matter, moderately moist, and yet not stagnant or sour. There is no scarcity of such land in the Himalayas. The leaves even from full grown plants should not be plucked too freely, a point to be carefully impressed upon the natives. The natives "instead of nipping off the upper part of the young shoot with its leaves, as the Chinese do, strip the leaves from it and leave the bare stems. These bare stems generally die down to the nearest leaves, and then the plants get covered with dead stems and present a sickly appearance. About an inch and a half, and sometimes more of the top of the young shoots is soft and succulent, and makes just as good Tea as the leaves themselves. The Chinese know this well, and hence they always nip off this portion with the leaves." Very few of the old tough leaves should be plucked. They are worthless for the market, and invaluable for the health of the plant. The Chinese tea-growers on the Plantations should instruct the natives in the art of Tea plucking. The Tea originally procured had an "Ankoy" flavour which was objectionable. Mr. Fortune however had sent round twenty-five makers from the best districts in China, and already a marked improvement has taken place in the appearance of the Himalayan Teas. The thousands of Tea plants sent round should not be mixed up with the original plants, in order to detect whether the peculiar flavour of the Himalayan Teas is inherent, or caused by bad manipulation.

To cultivate Tea a large amount of capital is required. "It is true that a man with small capital, and having the requisite amount of knowledge—if content with a moderate, or even handsome and certain remuneration for his outlay and labour—might succeed and gain a comfortable living by the cultivation

of Tea on the Himalayas." A large public company is more likely to succeed than private capitalists "I would strongly advise Government not only to discourage but to take measures to prevent, mere adventurers from getting up a company of this kind,—men who have no other object in view than power and place, and who would probably in the end bring ruin upon the shareholders, and give a check to Tea cultivation in these Provinces, which it would take many years to recover." The size of the buildings and number of tea-makers should be immediately increased. The Zemindars who it was hoped would take to the cultivation have not done so. In one instance two small Farms of eight acres together were given to a Zemindar about thirty-five miles from Almorah. A Government factory where his leaves were purchased at Rs. 8 a maund was within three miles of his Farm. "The circumstances in which this man was placed were altogether most favourable. Supposing the land to have been yielding annually 800 lbs. of raw leaves per acre, which is a very low average, he would have been realizing Rupees 80 an acre for his land, or Rupees 640 for the 8 acres under Tea—a sum I should imagine twice as large as he would make from any other crop and with less trouble." The man when Mr. Fortune visited the place was cultivating rice above the Tea. Another Plantation in Hawulbaugh belonging to Captain Ramsay is in good order, and in two years will produce large quantities of Tea and keep on producing for many years. The Zemindars, however, must ultimately take to the cultivation, and the quantities of foreign capital thus introduced must be of material benefit to the cultivators. Another great benefit of the cultivation is that even in the driest weather there is always a crop. On one occasion when nearly every other crop had failed the Tea seemed quite uninjured.

The following is Mr. Fortune's estimate of the return to be expected from a great Tea estate. A little one will not be profitable in the same proportion, while in a larger one the proportion of profit will again increase :—

ROUGH SKETCH of the Quantity of Land which could be brought under Tea Cultivation, with a Capital of Rupees 2,00,000, and also intended to show the probable amount of Expenditure and Profits spread over a space of six and eight years.
1,800 ACRES OF LAND.

Expenditure from the 1st to the 8th year inclusive.

	Rupees
Factory and houses for Tea-makers, Bangalore for Overseeer,	6,000
Pay of Overseeer, at 100 Rupees per month, for 6 years,	1,400
Ditto of 500 men, at 4 Rupees per month, for 6 years,	7,200
Ditto of 10 Chowdries, at 8 Rupees per month, for 6 years,	1,44,000
Ditto of 1 Moonabee, at 12 Rupees per month, and 2 Chuprasies, at 5 Rupees per month, for 6 years,	5,760
Rent of Land for 6 years, at 1,350 Rupees per annum,	1,584
Expense of preparing Tea, in 3rd, 4th, 5th and 6th years, say 20 men, at 5 Rupees per month,	8,100
Four Chinese Tea manufacturers, at 34 Rupees per month, for 4 years,	4,800
Implements, passage money for manufacturers, carriage, &c., say, 8,628	6,528
Contingencies for 6 years, say 1,000 Rupees per annum,	8,628
	6,000

Rupees 2,00,000

Working Expenses in the 7th and 8th year.

Overseeer's pay for 2 years,	2,400
500 men for ditto,	48,000
10 Chowdries for ditto,	1,920
1 Moonabee and 2 Chuprasies for ditto,	528
Rent of Land for ditto,	2,700
Expense of preparing Tea doubled, say,	4,800
Wages of 4 Chinese for 2 years,	3,264
Contingencies for wear and tear of implements, boxes, &c., in 2 years,	5,000

Rupees 68,612

Total ... Rupees 2,68,612

Income from the 8rd to the 8th year inclusive.

	Rupees
Tea manufactured in the 3rd year, say 10 lbs. per acre, at 8 { as. per lb.	9,000
Ditto in the 4th year " 30 lbs. " at ditto,	27,000
Ditto in the 5th year " 80 lbs. " at ditto,	72,000
Ditto in the 6th year " 120 lbs. " at ditto,	1,08,000
Ditto in the 7th year " 150 lbs. " at ditto,	1,35,000
Ditto in the 8th year " 200 lbs. " at ditto,	1,80,000
Total in the 8th year,	5,31,000
Deduct amount supposed to be expended in 8 years,	2,68,612
* Profita,	Rupees 2,62,388

* There would be sundry expenses deducted from this sum, such, for example, as interest of capital for the first 6 years, auctioneers' fees, carriage, &c., if the Teas were sold in India; and carriage, freight, and other shipping charges if exported to Europe and America, or the Colonies. I have put down the pay of the Overseeer at Rupees 100 per mensem, as that is the sum at present paid by Government; but it would probably be necessary to raise that to Rupees 300 if a good man could be procured. I have supposed the whole of the 1,800 acres to be planted in one year; but this would probably be impossible, as it would take some time to select the land, and the requisite number of plants might not be procurable at once. In this case, however, the expense for labour would be proportionably less.

R. FORTUNE.

On 17th November, 1856, Dr. Jameson reports that Mr. Fortune's suggestions are not original, and have long since been carried out. They will all be found in the Notes prepared for the benefit of Overseers.

1. On suitable ground. "Care must be taken to chose only well drained land, not dry, stiff clayey land, in which nothing will grow, but land rather moist, in which the soil is light or free. All low places, where rain water rests, must be avoided such as the lowest part of valleys, &c." Tea can be mixed with dry crops, but not with rice, as the water necessary for the rice spoils the Tea.

2. On preparation of the ground. "Before sowing Tea seeds let the land be well ploughed or trenched with the phaoorah to the depth of 18 or 24 inches, and all the weeds removed; and let it be well manured to the extent of 60 to 70 maunds per acre if manure be plentiful. If not, a much smaller quantity will do. Let it then be smoothed and thrown into beds, it will then be ready for seeds and plants."

3. On the method of sowing seeds and on the treatment of young plants. Tea seeds ripen in October and should be sown soon after. Sow them very close to a depth of one inch in drills 8 inches apart. Water them sparingly, "which need not be again repeated until the seedlings begin to show themselves above ground, after which time let them be watered every six or seven days." The seed beds ought to be weeded three or four times during the season.

4. Method of transplanting. "As soon as the seedling plants are 8 inches in height, they are fit for transplanting, and in doing so they ought to be planted $4\frac{1}{2}$ feet apart. Let holes be dug to the depth of $1\frac{1}{2}$ feet or more if necessary. In lifting, therefore, the plants to be transplanted, the ground ought to be well opened up, and if possible each plant lifted with a small ball of earth attached to the roots. Let the earth be then well pressed down with the foot at the roots, and watered. If manure be available, a small quantity ought to be put into each hole." Transplanting should begin with the rains and continue through them.

5. On plucking. The season for gathering leaves commences in April and continues till October. The leaves should not be pulled till the plants are three years old. Only the fresh and young leaves should be plucked. During the season four gatherings may be taken from the same plant. In the second year the terminal shoots ought to be pinched off to induce the plant to take a bushy form. This should be done two or three times during the season. "To Zemindars desirous of undertaking Tea cultivation, plants and seeds in any number

and quantity will be issued from the Government Plantations at Hawulbaugh, Bheemtah in Kumaon, and at Boru in Gurhwal. All Tea leaves brought to the factories in good order will be purchased at the rate of 8 Rupees per maund and to the first party who brings leaves the following rewards will be given.

“The first party who brings pukka 100 maunds of good fresh leaves will receive Rupees 300. The first party who brings 50 maunds, Rupees 100. The first party who brings 25 maunds Rupees 50. The first five parties who bring 12 maunds Rupees 30 each. The first ten parties who bring 10 maunds Rupees 20 each. Each party must show that the leaves brought have been gathered from different Plantations.”

Dr. Jameson enters into a defence of the coarse Teas said by Mr. Fortune to be too largely produced at the factories. It is his object to reduce the quantity, but the price though low is remunerative, and the coarse Tea eagerly purchased by the natives. Dr. Jameson proves that Plantations formerly condemned by Mr. Fortune now satisfy him, and adds that the extra room required has been given, while the stunted look of the plant of some Plantations is owing to the drought for three successive years. The Chullar land said to be thin and stony was only taken because there was no other, and the Tea plants from China are most carefully kept distinct. Two native Plantations are in good order, and the Zemindar specially mentioned in Mr. Fortune's report is aware of his blunder in suffering rice to be grown above the Tea, and means to repair it. The proprietor however did receive Rs. 152 for his Tea last season, while the rent of his entire estate, covering many square miles, is only Rs. 40. Several Europeans moreover have opened Plantations. Col. Elwall and Capt. Thulwell opened a large Plantation in Deyrah Dhoon with complete success. “In the Simla District, Mr. Purkely has commenced Tea planting, and has been liberally supplied with plants and seeds. In Assam Mr. Carnegie has established himself as a Tea-planter in a Government grant, and been liberally supplied with seeds. The Assam Company, anxious to improve their Tea Plantations by introducing Kumaon seeds, have also been liberally supplied. In Cachar several Calcutta firms have taken up Government grants for the purpose of cultivating Tea, represented by Mr. Bugby, Mr. Saunders, Mr. Schiller, all, of whom have been or are being supplied with seeds. At Darjeeling several parties have taken up graunts and have there commenced Tea cultivation, and I believe there are upwards of 10,000 acres of good land available for the purpose. Into the Cashmere valley the Tea plant is being introduced by the Maharajah Golaub Sing, I, at the request of His Highness, through the Commissioner

of Lahore, having sent him thirty coolie loads of plants and twelve loads of seeds." Finally, Dr. Jameson while in justice to himself and his Overseers he answers Mr. Fortune's report willingly acknowledges that Mr. Fortune's services have been invaluable to the Plantations.

On 10th February, 1857, Mr. Ramsay, Commissioner of Kumaon reports on the prospects of Tea cultivation in that district. He does not agree that the small capitalist will be unable to succeed, he himself having looked after three Plantations. Mr. Ramsay would not recommend any capitalist to take a Government grant of land at first, because clearing it hurriedly is expensive, and the probability is there would not be much bad and indifferent land mixed with the good portions in such a tract. With a little patience and enquiry it is always possible to purchase a village at a distance from Almorah in the less cultivated parts of the Province." A village with 50 acres of cleared land and two or three hundred of forest land would cost Rs. 500 with a jumma of Rs. 30 a year. He is "surprised that so few have settled as Tea-planters. There is no risk as in Indigo. Drought or storms of hail may diminish the supply of leaves for a time, but failure is impossible. No animals destroy the plant. There is no chance of good Tea becoming unsaleable. The occupation is a healthy one, the climate delightful, and the superintendence of such a nature that the Plantation may be left from time to time without risk." He would not yet sell the Government Plantations, as it is too soon. The cultivation is not yet popular enough. On 17th March the Superintendent of the Kumaon Gardens reports that it is a mistake to believe that land fitted for Tea cultivation is limited. There are in Kumaon alone 3,50,000 acres of such land, yielding 100 lbs. to the acre. This territory with the land equally fit in Hazarah, Cashmere, Junmoo and the Protected Sikh States could produce 100 million pounds of Tea, or as much as the whole China export. "But let British capital and enterprise be embarked in proportion to the importance of the cultivation and the support it merits, and thus give employment to thousands of poor but able-bodied and excellent workmen, when their labours are properly directed, and these hills will soon become as important to the State as any Province of the plains. Labour is cheap, the climate is admirably fitted to the European constitution, the people are docile and easily guided, provided that they are properly treated and their prejudices respected."

Dr. Jameson adds directions for the cultivation and preparation of Tea, the value of which consists in their minuteness, and descriptions of instruments and buildings valueless without plates. He says that labour in Kumaon is abundant and cheap,

and the market as yet is not sufficiently full. The Thibetans will buy any quantity of cheap Tea. Cashmere requires 2,00,000 lbs. a year. Natives are very fond of Tea but want it cheap.

The prices fetched at Almorah are					per lb.
Gunpowder,	..	..	..	...	4 8 2
Young Hyson,..	...	...	...	...	2 14 5
Hyson skin,	..	...	..	...	0 5 10
Souchong,	...	..	..	..	2 9 11
Pouchong,...	...	...	..	..	1 2 10
Bohea, ..	...	..	..	...	0 7 10

Building materials abound, supplies are cheap, and lands are granted on the following terms. :—

“Each grant will be of not less than 200 or more than 2000 acres. More than one grant may be taken by one person or Company on the applicants satisfying the Local Authorities acting under the usual control in the Revenue Department, of their possessing sufficient means and capital to undertake an extended cultivation and manufacture of Tea.

“One-fourth of the land in the grant will be given free from assessment in perpetuity, on fulfilment of the conditions below stated.

“The term of the first lease will be for four and twenty years, the grant will be rent free ; in the fifth year one anna per acre will be charged on three-fourths, or the assessable portion of the grant ; two annas per acre in the sixth year ; three annas in the seventh year, and so on, one more anna being added in each year, till in the last the maximum rate is reached of one Rupee per acre. The full assessment on a grant of 200 acres will thus not exceed 1500 Rs. per annum.

“The following are the prescribed conditions of clearance :—

“At the close of the fifth year from the date of grant, a twentieth part of the assessable area ; at the close of the tenth year one-fifth of the assessable area ; at the close of the fifteenth year, half of the assessable area ; and at the last year, three-quarters of the assessable area is to be cleared and well stocked with Tea plants.

“In the twenty-first year, on the fulfilment of the above conditions, the proprietary right in the grant, and the right of engagement with Government, shall vest in the grantee, his heirs, executors or assigns, under the conditions generally applicable to the owners of estates in Kumaon, and the rate of assessment on the lands in the grant, in whatever manner cultivated, shall never exceed the average rate on grain crop lands in the same locality.

“On failure of payment of the prescribed assessment in

any year, or of any of the above conditions (the fact of which failure shall, after local enquiry, conducted by the Senior Assistant Commissioner, be finally determined by the Sudder Board of Revenue) the entire grant shall be liable to resumption at the discretion of Government, with exception of the assessable area which may be *bona fide* under cultivation with Tea, and to a further portion of land which shall be allowed in perpetuity, free of assessment to the extent of one-fourth of such cultivated area. The portions so exempted will remain in the possession of the grantee subject to the usual rates and rules of assessment in the District.

" Grantees shall be bound to erect boundary pillars at convenient points round the circuit of a grant, within six months from its date, failing which such pillars will be put up by the Government Officers, and the cost thereof shall be recoverable from the grantee in the same manner as the regulated rate of assessment.

" No claim to the right and interest in a grant on any transfer by the original grantee will be recognized as valid, unless on registry of the name of the transferee in the office of the Senior Assistant Commissioner.

" So long as Government establishments for the experimental growth and manufacture of Tea shall be maintained in the Province, supplies of seeds and plants will be given gratis to grantees, on application to the Superintendent, Botanical Gardens, North-Western Provinces, as far as may be in his power." Thermometric tables are appended. It is added that the Tea planter must be continually among his men, and the peculiar diseases of the spot are few. Small-pox rages occasionally, and goitre is very common, but yields to iodine.

The cost of a factory will depend on its size but the land required for a Plantation of 1,500 acres will cost about Rs. 2,500 in the hills or 3,500 in Deyrah. The expense of a thousand acres for eight years would be Rs. 2,75,000, the profit Rs. 1,67,972.

STATISTICS OF 24-PERGUNNAHS.

THE 24-Pergunnahs lie between 22° and 23° of North Latitude and 88° and 89° of East Longitude. The name arises from the fact that the territory originally ceded to the Company really contained twenty four pergunnahs. The estate was made over to Col. Clive by Jaffier Ali, in 1759, and the rent Rs. 2,22,000 was paid to him till his death in 1774. It then reverted to the Company. The area was then supposed to be 4882 square miles. In 1759

the Company sold them by auction for Sa. Rs. 7,65,700 a year, reserving the royalties worth Rs. 1,50,000 more. In 1820, 23 the pergunnahs now forming the Baraset district were incorporated with the 24 Pergunnahs, which is now bounded on the North by Nuddeah, on the East by Jessore, on the South by the Sunderbunds and on the West by the Hooghly. Its extreme breadth from North to South is 71 miles, and its extreme breadth 78 miles, the superficial area being 2277 miles. The whole district is flat, full of Jheels one of which the Boyrah covers 40 square miles, and intersected by innumerable khals or tidal creeks. "In the Western and Southern portions, an embankment has been raised by the Government, commencing from the Muneekhalee Khal, a little below Akra Farm, and extending along the bank of the River Hooghly as far South as the Cheeta-mooree Telegraph, thence along the borders of the Soonderbund jungle, till it meets the Biddiaduree River, running along its right bank and terminating about four miles to the East of the Dhaupa Toll House." The Northern portion is very rich, but the Southern is spoiled by the Salt water. In the North-East immense numbers of date trees flourish without any cultivation.

The principal rivers are "the Hooghly, the Biddiaduree, the Piale, the Jaboonah or Echamuttee, the Khalindee, the Culputooa, and the Cobbaduk." The Hooghly is navigable up to Calcutta, a distance of 100 miles, for ships of large tonnage. There is one passage which under various names connects several streams leading through the whole district in an easterly direction. There is also another passage from Joynuggur in Pergunnah Boreedhattee.

The principal roads are the Grand Trunk Road running through Barrackpore to the North-West, the road from Calcutta to Diamond Harbour, from Calcutta to Midnapore, from Calcutta to Joyepore, from Calcutta to Baraset. These roads are metalled. The principal secondary roads are "the road leading from Barrackpore to Baraset, and continuing on to Baseerhaut, Soladanah, with a branch to Hurwa and Takee on the Jaboonah River.

"The road from Nyehatee, nearly opposite Chinsurah and Hooghly, leading partly through the Nuddeah District and leading to Badooreah (where a branch joins No. 1 to Baseerhaut) on the Jaboonah River, which it crosses by a ferry continued on through Poora Boikari, joined at Ootur Pranshuhur, by a road coming from Kullarahaut in District Nuddeah and from thence branches off into three roads, one leading to Boyrah and Paroolah, another to Shatkira, Dhoolihaut, Chandpoor and Paithullee, and the third to Shorooler and Sakduh on the Cobbaduk River." Many of these are mere tracks, and there

are points of the district in which there are no means of communication except the tidal khals. The South of Calcutta indeed during the rainy season is a vast lake, traversed by "Saltees," boats made of the trunk of a sal tree. "The climate is that of Bengal generally, healthy and unhealthy according to the season. The year is divided into three seasons—the hot, rainy and cold. The hot season commences from the middle of March and ends about the middle of June, or as soon as the first rains set in. The rainy season continues till the end of September and sometimes runs into October. The remainder of the year constitutes the cold weather." The hot season begins with the change of the monsoon. In the latter part of March, April and part of May the heat is relieved by the North-Westerns, storms of wind accompanied by lightning and rain. Though the heat by day is excessive the nights are comparatively cool. In July and August heavy rains fall and it is not till October that the rain gradually ceases, and the weather becomes cool and agreeable. "The population of this District is 9,47,204 souls, the details of which are:—

Men, ...	3,50,466	} Exclusive of the City of Calcutta and suburbs.
Women, ..	3,12,578	
Boys, ...	1,61,026	
Girls, ...	1,23,134	
<hr/>		
Total, ...	9,47,204	

"Of these, in the Allipoor Division of the District, the Hindoos are about 3 to 1 of the Mussulmen. In the Baraset Division the Mussulmen are about equal, or a fraction more than the Hindoos. The average per square mile is 421 and per house 5,40." The population of Calcutta is about 3,61,369 and Major Smyth gives the population and area of each Pergunnah. The population appears to have increased from 267 per square mile in 1822 to 421 per square mile in 1856. This indicates prosperity, but the prosperity is confined to the zemindars as rents and leases are insecure. The people are however contented with little, and their character may be summed up as Rammohun Roy summed it "the peasants or villagers, who reside at a distance from large towns and head stations and courts of law, are as innocent, temperate, and moral in their conduct as the people of any country whatsoever. The virtues of this class, however, rest at present chiefly on their primitive simplicity, and a strong religious feeling, which leads them to expect reward or punishment for their good or bad conduct, not only in the next world but, like the ancient Jews, also in this; *secondly*, the inhabitants

of the cities, towns or stations, who have much intercourse with persons employed about the courts of law, by zemindars, &c., and with foreigners and others in a different state of civilization, generally imbibe their habits and opinions—hence their religious opinions are shaken without any other principles being implanted to supply their place—consequently, a great portion of these are far inferior in point of character to the former class, and are very often even made tools of in the nefarious work of perjury and forgery; *thirdly*, a third class consists of persons who are in the employ of zemindars, or dependant for subsistence on the courts of law, as attorney's clerks, and who must rely for a livelihood on their shrewdness, not having generally sufficient means to enter into commerce or business." The want of annual food and very early marriage debilitate the Hindoo. The Mahomedan living more freely has a higher physique. Their habitations are usually of mud, sometimes of brushwood plastered with mud. These huts have no windows or apertures except the doorway, the smoke escaping through the space between the wall and the roof. The houses are shrouded in jungle usually productive, and considered by the Bengalee necessary to keep off the sun and his neighbour's eyes. Each house has a patch of ground in which a few vegetables are reared, and these with rice form the staple food. Occasionally the Bengalee eats a little putrid fish. The Mahomedan however affords himself fowl, kid or pigeon. "Their dress usually consists of a turban, a cloth fastened round the loins, and falling as low down as the knee; over this the better classes wear a long robe of cotton, with a white scarf tied round the waist, the end being thrown over the shoulder. The Mussulman wears a pair of cotton drawers, white and sometimes colored, down to the ankles—a robe of cotton, which, to distinguish him from the Hindoo, he buttons on the left shoulder, the Hindoo fastening it on the right—and a turban on the head." The ryot wears a rag for decency's sake, and sometimes a conical hat made of palm leaves. "The dress of the females is very elegant. The close part of the Hindoo female dress is a jacket with half sleeves, which fits tight to the shape, and covers, but does not conceal the bust. The remainder of the dress consists of a long piece of cotton or silk which is wrapped round the middle, and contrived to fall in graceful folds, till it be below the ankle on one leg, while it shows a part of the other. It is gathered into a bunch in front, and the upper end crosses the breast, and is thrown forward again over the shoulder or over the head like a veil. The hands and feet are usually adorned with ornaments, and sometimes a jewel is worn suspended from the nose. Even the working class of women have their anklets and armlets of brass and sometimes silver."

The Bengalee rises early, and usually eats three meals, at 9 or 10, at 12 or 1, and at 10 p. m. They employ their leisure in music, singing, dancing and various games of chance. The women do all the in-door work, cooking included. Major Smyth describes various games of chance, musical instruments, and indigenous modes of conveyance, and proceeds to describe the agriculture of the district.

The agriculturists number 2,90,176 to 60,290 of the consuming class. The area includes

"Cultivation,	8,78,528 acres
Village sites, rivers, jungle, roads, &c.,	3,58,400 "
Culturable and fallow,	2,00,512 "

Total, 14,37,440 = 2,246 sq. miles."

The staple product is rice of which there are three kinds—Aoosh, Amun and Borah. "The first is sown in May and June and reaped in August and September; the second is sown in June and July and reaped in November, December, and January; the third is sown in January and February and reaped in April and May." The Aoosh and Bora paddy are thus cultivated. "In the month of 'Vaisakha' (April and May), when it rains, the plough-men till a piece of high ground first, which is called 'Khill Bhanga,' and a few days after, they till it again—this is termed 'dochasee' They then sow the seed in 'Jyista' (May and June) and plough and harrow the ground a third time. When the plants grow up, they harrow the land once more and root up the weeds. Ten or twelve ploughings are generally required for cultivating one beegah of ground, and one Rupee per beegah, more or less, is expended for the purpose." "The 'Amun' paddy is cultivated by sowing and planting. In the month of 'Vaisakha' (April and May), after a fall of rain, they plough a piece of 'Shalee bhoomee' or low land, and prepare or granulate the soil after rain in 'Jyista' (May and June), and then scatter the seeds thereon. When seedlings shoot forth, it is called 'caukree tula.' In the month of 'Asarh' (June and July) or 'Sravun' (July and August), they plough and harrow the rice field and make a clayish surface; then transplant those seedlings therein in rows of about a span apart." The rice has four distinct names. While growing it is called paddy, in the husk dhan, when shelled aman, and dressed anna. The rice is cut by men sitting instead of stooping, the grain being beat down by a bamboo pushed over the field. "The cleaning or husking of the rice is thus done. As much as can be husked during a day is put into an earthen pot, to soak in water during the night; in the morning it is half-boiled, and then spread out in the sun

to dry. This is done entirely by women. The cleaning or husking is effected by means of an instrument called a 'dhenki.' This is a lever which is raised and depressed by the pressure of the foot, and having a pestle at the other end beats the husk off the rice. A maund of paddy usually yields 16 to 18 seers of clean rice. The thresher if he parboils the rice receives one-fourth for his labour; if not one-eighth. There are numerous modes of preparing rice, and the natives make out of it an intoxicating drink. There are small quantities of tobacco, gram, oats, wheat, and mustard and pan and sugar-cane are grown for the Calcutta market. Goor is manufactured and Indigo grown. The goor is the chief native product is thus prepared. "The date-tree, 'Khejur,' is reared from seed sown in the month of Asarh (June and July). It makes its appearance above ground in about five or six months. It comes to perfection in from four to six years. Much depends on the soil, saltish land being most favourable to its growth. The juice is thus extracted: Five or six of the lower branches on one side of the tree are cut down (to do this a man climbs to the top of the tree, supporting himself by a strong rope, which he passes round the tree and his own loins, tying the ends—he slides the rope up and down with his hands, planting his feet firmly against the tree, and throwing the weight of his body on the rope—in this manner, his hands are free for action—he cuts the tree with an instrument something like a bill-hook and very sharp), and a flat space about 9 inches in breadth cleared. The surface of this space is renewed twice, once in every ten days. At the end of this time, a longitudinal incision is made in the centre, and a small piece of bamboo, about 9 inches long, with a furrow cut in it, is driven into the incision. Below the end of this bamboo, an earthenware pot is hung at sunset, and the juice runs down the furrow into it. In the morning, before sun-rise, these pots are taken down and are generally full." A tree usually yields a maund a month. The goor is then prepared from the juice by boiling. "Sugar made from the 'goor' sells from 7 to 8 Rupees per maund. The 'goor' is sold to Sugar Factories, both European and Native, in the vicinity, who manufacture sugar from it and it is also exported to Calcutta. An intoxicating liquor called 'toddy' is made from the juice by fermentation. In November and December it requires from 8 to 10 seers of juice to make 1 seer of 'goor,' in January and February 6 to 8 seers, and in March and April 5 to 6 seers, and from 20 to 25 seers of sugar are manufactured from a maund of 'goor' of the average kind." The natives make sugar by expressing the treacle from the goor in bags. The

remainder is put into opened mouthed pots with a hole at the bottom. A little milk and water is sprinkled to clarify the sugar and in about twenty-five days all the moisture has run off. The remainder is sugar. Pan is usually cultivated on stiff land and the garden is covered in, watered and manured with oil-cake. Five cottahs covered with pan cost Rs. 86-4, and yield about Rs. 130, or deducting the expense of labour the work being done by the proprietor's family, the returns are about 500 per cent. on outlay. There are three crops a year. Tobacco. "The tobacco grown in the District is of two kinds, viz. Hinglee and Mandhatha, the former is the best. Light soil is usually selected, which is ploughed weekly for eight months, from February to September. The seed is sown in a nursery and transplanted about the end of September, each plant being 18 inches apart. The tops and suckers are broken off in November and December, to prevent their running to seed, and the leaves are collected in January. The produce of a beegah is from 12 to 14 maunds. The leaves are spread out for three or four days on the ground, night and day; they are then strung on a string, and hung within the house, to get the benefit of the smoke for a month, and in March are made up into bundles of $1\frac{1}{4}$ maunds each, and sold." Tobacco costs about Rs. 23 per beegah and yields about Rs. 35-2. Sugar-cane. "A rich soil is selected, and high enough to be above the usual water mark of the rainy season. The field is ploughed 10 or 12 times and manured. Cuttings of the cane are planted horizontally in the ground in March, about 18 inches apart, which sprout up in a month. In July and August ('Shrabun') the plants are about 3 feet high, when they are tied up three or four together with their own leaves, to prevent their being blown over. If there is no rain in September or October, it is necessary to water them. The canes are cut in January and February and the juice is extracted by a mill." The cost of a beegah of sugar-cane is about Rs. 18 and the produce about Rs. 30.

The plough is very light, only scratching the ground. It is drawn by cattle whose tails the ploughman takes in one hand while he guides the plough with the other. The harrow "consists of a bamboo split in two and joined across by smaller pieces of 18 inches to 2 feet long, in the form of a ladder." The rake resembles the English harrow; the reaping-hook is nearly the same as in England, but large short-handled hoes called phowrah, and khoodal, and take the place of the English hoe and spade. A complete set of farming implements is worth about Rs. 4-2-6, the plough, phowrah and khoodal being worth respectively one rupee, ten annas, and twelve annas. The most

common trees are the bamboo, mango, cocoanut, palmyra, betelnut, tamarind, date, neem, bale tree, cotton tree, gab (used as a dye) babool, bur, custard-apple, plantain, and others.

The vegetables are "ginger, turmeric, onions, begun, sweet potatoe, radishes, kumrah, meeta kumrah or pumpkin, sem, sorrel, karellah, oorcha, turbooj or water-melon, cucumber, peas, ole, garlick, carrots, french-beans, and an endless variety of mosalas, tarkari and sag, which are used in seasoning the food of the natives." The wild animals are the leopard, hog, deer, wild-cat, mongoose, jackal, and fox, but the tiger sometimes makes an incursion from the Sunderbunds, and the rhinoceros is found occasionally in Pergunnah Dholeapoor. The game consists of "the hare, jungle fowl on the borders of the Soonderbunds, wild ducks and teal of all kinds, snipe, and a few quail." The fish are numerous, including the mango, mullet, bhektee, hilsah, rocee and others. The domestic animals are all inferior, but include cows, sheep, goats, bullocks and buffalos. Ducks, fowls and pigeons are reared by Mussalmans. The district contains no minerals of any kind.

The commerce of the district comprises rice, goor, pan, tobacco, indigo, cloths, silk, mats, curds, vegetables, fish, and pottery. Almost all the traffic is carried by water.

Accounts are kept as in other parts of India, but the cowrie currency is thus calculated :—

4 Cowries,	=	1 Gundah.
20 Gundahs,	=	1 Pun.
4 Puns,	=	1 Anna.

The standard of weight is the tola of 180 grains. The standard seer is 80 tolas, and the standard maund lbs. 100 troy. The maund for weighing salt is $2\frac{1}{2}$ per cent. heavier than the bazar maund. In parts of the district other weights are used. Liquids are sold everywhere by weight in seers.

The linear measure originated thus :—

5 Fingers' breadths,	=	1 Palm.
6 Palms,	=	1 Hath.

Which in square measure becomes

20 Gundahs,	=	1 Chittack.
16 Chittacks,	=	1 Cottah.
20 Cottahs,	=	1 Beegah.

The standard beegah of the district used for the survey is 1600 square yards.

The native usually tells time by the length of his shadow but he divides the day thus :—

15 Namesh,	=	1 Kastah.
15 Kastah,	=	1 Pol.
60 Pols,	=	1 Dundo.
2 Dundo,	=	1 Mohoteek.
15 Mohoteek,	=	1 Day of 12 hours.

The seasons are six—Greeshoo, Bursha, Shurut, Heymunt, Seeshear and Busunto.

“The District comprizes two grand Divisions, *viz.* Allipoor and Baraset, and contains 48 Pergunnahs. Of these 37 are *bona-fide* Pergunnahs, the remaining 11 consist of villages scattered over these 37, which, when collected together, obtain a Pergunnah name. In addition to the above, there is the City of Calcutta and the adjoining Government Estate of Punchanungram, neither of which come under this denomination.” The Allipore Division contains 1,036 square miles. The Baraset Division contains 1,241 square miles or altogether 2,277 square miles containing 4,450 village Circuits. Major Smyth describes the tenure, and observes that the Zemindar usually lets land at from 12 As. to 1 Re. 4 As. per beegah, but the ryot pays from one rupee to five. His house at starting costs him Rs. 15, and his agricultural implements, bullocks and furniture 17-2. The cost of working his nine beegahs is Rs. 41 a year, and the profits about Rs. 26-2. The return is large as a percentage, but he pays 37½ per cent. on the capital absorbed in setting himself up. A yeoman however with a small capital renting 30 beegahs makes 125 rupees a year. “This farmer, notwithstanding the rent he has to pay to the Zemindar, which is nearly half of his expenditure, and having no interest to pay, clears 57 per cent. on his expenditure. The interest would have been 83 Rupees. Out of his proceeds, he has to pay his religious fees, which cannot be estimated, and his barber. Farms vary from 8 or 9 beegahs up to 150 beegahs: there may be a few above this area.”

Major Smyth proceeds to describe Calcutta. It comprises an area of 7·80 square miles, and the population according to Mr. Simm's estimate is 3,61,369. There are 13,120 pukka houses, and 49,445 kutcha. There are 265 places of worship, 167 of which are Hindoo, 74 Mussalman, 1 Jewish, 1 Armenian, 1 Greek, 1 Chinese, and the remainder different denominations of Christians. “There are 1,043 tanks, 29 public buildings and offices, 9 buildings belonging to charitable institutions, 5 burial grounds, and 20 bazars or markets. The total length of the public roads is 125 miles. The highest part of the town in Clive Street, opposite Cotton Street, is 30·63 feet above the zero of the Tide Gauge at Kyd's Duck-yard at Kidderpoor, and the lowest part in Muchooa Bazar Street is 18·01 feet above the same datum.

Calcutta has extensive, irregular, and thickly-peopled suburbs. In 1717 the Company purchased 38 villages about Calcutta, which now form these suburbs. Panchanungram, which name would lead to the supposition that 50 had been purchased, is situated North, East and South of Calcutta, and comprises an area of 23·17 square miles. They extend $2\frac{1}{4}$ miles North, $2\frac{3}{4}$ miles East, and $2\frac{3}{4}$ miles South of the boundary of the town itself, and are out of the jurisdiction of the Supreme Court." Major Smyth adds facts of all kinds about each Pergunnah, and supplies the following statistics of the Survey:—

STATEMENT shewing the date of commencement and final completion of the Survey of 24 Pergunnahs District, Area, Cost, and Average Rate per Square Mile.

District.	Name of Surveyor.	Date of commencement of Survey.	Date of completion of Survey.	Area in square miles.	Cost.	Average rate per sq. mile.	Remarks.
24. Pergunnahs,	Major R. Smyth, ...	22nd December, 1846, ...	30th September, 1852, ...	22.77	Rs. As. P. 1,12,625 3 4	Rs. As. P. 49 7 4	The first season's work of this District, executed by Mr. Wilson, comes to about 150 Rs. per square mile. This was rejected, and consequently affected the general average. Excluding Mr. Wilson's work the cost of the 24-Pergunnah Survey, under Major Smyth's superintendence comes to Rupees 38-6-10 per square mile.
Punchanungram,	Ditto, ...	1st November, 1848,	30th November, 1852,	10.75	9,952 8 10		This being a minute survey of Holdings, the rate per mile is not applicable.
Soonderbund Boundary,	Ditto, ...	15th January, 1850,	30th September, 1851, ...	250.00	16,720 9 5		This being a Topographical Survey of the line of boundary, with a certain portion of the Grants in the Soonderbund, the rate per square mile is not applicable.

REVENUE SURVEYOR GENERAL'S OFFICE :

*Calcutta,
The 21st April, 1867.*

H. L. THUILLIER,
Deputy Surveyor General.

THE MUTINIES.

Parliamentary Blue Books.

THE Governor General in Council on the 7th February, 1857 forwards to the Court of Directors a correspondence relative to a feeling of uneasiness created amongst the men attached to the depot of musketry at Dum-Dum consequent on a report having reached them that the grease used in the arsenal for preparing the cartridges for the Enfield Rifles was composed of the fat of "pigs" and of "cows." The men were appeased by an order permitting them to receive the cartridges without grease, and to apply with their own hands whatever mixture they might prefer. As service ammunition required to be greased with some substance that would be durable, experiments were ordered to be made at Meerut, where H. M.'s 60th Rifles were stationed, to ascertain the best ingredients for greasing the cartridges, with reference both to the feelings of the native soldiery and to the requirements of the service. The matter was fully explained to the men both at Barrackpore and at Dum-Dum, and they appeared perfectly satisfied; but the Governor General recommended to the Home Authorities not to send ready-made ammunition from England. The Court of Directors on the 8th April approve the proceedings, and assent to the recommendation. They send a Memorandum by the Inspector General of Stores, stating that the grease used in making up cartridges forwarded to India is composed of five parts tallow; five parts stearine; and one part wax. The composition of the tallow itself, he cannot explain, but there is no hog's lard in it.

On the 8th April, the Governor General reports that the Sepoys at Barrackpore have objected to the paper of the rifle cartridges, and that a special Court of Enquiry was held at that station to ascertain the cause of the objections. The proceedings recorded show that the unfounded suspicion of the sepoy that the cartridges were greased with the fat of pigs and cows could not be removed; and as no composition free from grease appeared to answer the required purpose, the sepoy was allowed to tear off the end of the cartridge with their left hand, instead of biting it off. This altered mode of loading was also made applicable to the ordinary percussion musket on the recommendation of the Commander-in-Chief; and the Governor General in Council recommends that if the new plan is found to be as effective as the old practice of biting the end off, the change may be introduced in Her Majesty's Regiments in India. On the same date the Governor General in Council reports to the Court of Directors the circumstances which had led to the

dismissal of the whole of the native officers, non-commissioned officers, and sepoy of the 19th Regiment of Native Infantry who were present with the Regiment at Berhampore on the 26th of February last, when that Regiment committed an act of mutiny in refusing to obey their officers, and in forcibly possessing themselves of their arms. The ill feeling showed itself at Berhampore towards the end of February. The men refused to receive the new cartridges, alleging that the paper of which they were made was of two sorts, and was said to be greased with cow's and pig's fat. The Governor General on the 27th March recorded a Minute, concurred in by the Members of Council, stating the grounds for disbanding the 19th Regiment. After narrating the principal facts connected with the conduct of the men of that Regiment when it mutinied, the Governor General says that "from the moment when the main facts of the outbreak were established, it was clear that no penalty short of disbandment would meet the case. Additional guilt might possibly, by closer enquiry, be fixed upon individuals as instigators or ring-leaders, and to these additional punishment might be found to be due; but the open refusal of the whole Regiment to obey orders, the seizure of arms with violence, and a tumultuous but combined resistance of the authority of its officers with arms loaded, is an offence for which any punishment less than dismissal from the service of the State would be inadequate: mutiny so open and defiant cannot be excused by any sensitiveness of religion or caste, by fear of coercion, or by the seductions and deceptions of others. It must be met promptly and unhesitatingly, and without the delay of a day more than may be necessary. Accordingly, it has been resolved by the Governor General in Council, that the 19th Regiment shall be disbanded immediately, and that the disbandment shall take place at Barrackpore. In accordance with this resolution, the Regiment was ordered down to Barrackpore, where, on the 31st ultimo it was disbanded. The men were disarmed, paid up and marched to Pulta Ghaut. Major General Hearsey carried into effect this resolution of the Government, and is praised for the admirable manner in which he performed this most difficult and trying task entrusted to him." And the Governor General hopes, that the "severe measures, which he has been compelled to adopt will have the effect of convincing the Native Troops, that they will only bring ruin on themselves by failing in their duty to the State and in obedience to their officers." A General Order containing the decision of the Governor General upon the offence which the 19th Regiment had committed, and its disbandment in consequence, was issued and read to that corps and the other troops on parade on that occasion.

On the same day, the 8th April, the Governor General in Council further reports that on the 29th March, Mungul Pandey, a sepoy of the 34th Regiment N. I. at Barrackpore having armed himself with a sword, and loaded musket, fired at Lieutenant Baugh, the Adjutant of the corps, and shot his horse. Lieutenant Baugh fired his pistol and missed the man, who then attacked the officer with his sword, and wounded him in the hand. The Sergeant Major of the corps who went to Lieutenant Baugh's assistance, was also wounded by the sepoy. Major General Hearsey arrested the man himself; and in submitting the proceedings of a Court of Enquiry reported his own part in the transaction. He was warned on the afternoon of the 29th March, by one of his Orderlies that the sepoys were turning out on their parade. He immediately rode with his two sons to the parade, and found the mutineer walking up and down. He ordered the Guard to arrest him, which they delayed doing. He then rode towards the mutineer followed by the Guard. Mungul Pandey fired, and the Guard hearing the whistle of the bullet bent to avoid it. The mutineer then fired at himself, and fell with a superficial wound and his clothes on fire. He was secured and sent to Hospital. On the 9th April evidence was taken as to the conduct of Shaik Pultoo, a sepoy of the 34th N. I. who assisted in saving Lieutenant Baugh's life, was made a Havildar on the spot, and recommended for the order of merit. His statement contains the facts. "The sepoy Mungul Pandey, about 4 o'clock P. M. in the afternoon of the 29th March, was straggling backwards and forwards in front of the quarter guard armed with a musket and sword, he had on his red jacket and regimental cap, endeavouring to excite the men of the Regiment to mutiny; some one told the Sergeant Major of this, and he came towards the quarter guard, asking the Jemadar of that guard where Mungul Pandey was, and why he did not confine him. Mungul Pandey then fired at the Sergeant Major, but missed him; he reloaded; the Sergeant Major, being alarmed, ran into the quarter guard, and asked the Jemadar why he did not arrest Mungul Pandey who had reloaded his musket, and told him to send and let the Adjutant know what had occurred on the parade ground. Shortly after this the Adjutant, on horse back, arrived, and asked the Jemadar where the sepoy with the arms was, and why he had not secured him; the Jemadar gave no reply, but I pointed him out. Mungul Pandey was then standing in front of the quarter guard. Just as I spoke he fired at the Adjutant, and wounded his horse. The Adjutant then pulled out a pistol and said, "that man will kill me, he is loading again." I said, "you will not be allowed to be killed, for I am with you." The Adjutant then, with pistol in

his hand rushed towards Mungul Pandy, who, on seeing this did not finish loading his musket, and commenced retreating. The Sergeant Major and I followed the Adjutant as quick as we could. The Adjutant, when within twenty paces, fired at Mungul Pandy, but missed him; when the Adjutant reached him, Mungul Pandy drew his sword and wounded him severely. By this time the Sergeant Major came up, he also was wounded severely. I then came up, and stretched out my hand to stop Mungul Pandy, who was following the Adjutant, and said to him, "Take care, do not strike the Adjutant." He aimed a blow at the Adjutant's neck, which I received on my right hand; I then seized him round with my left arm; the Adjutant and Sergeant Major then got away. I then called out to the Quarter Guard to come and make Mungul Pandy a prisoner, and told the Jemadar Issurie Pandy, who commanded the Guard to send four men, and take him; that I had hold of him and would not allow him to hurt any one; they did not come, but abused me as also did the Jemadar, and said that if I did not let Mungul Pandy go they would shoot me. Being wounded, I was obliged to let him go. While I was holding Mungul Pandy, several men of the Quarter Guard followed the Adjutant and Sergeant Major, beating them with the butt-ends of their muskets."

On the 6th April the Native General Court Martial assembled for the trial of Mungul Pandy. Fourteen native officers besides the President was present. The evidence given at the trial confirmed Shaik Pultoo's story, with the addition that the accused was a man of good character. Fourteen officers found him guilty and eleven voted death. He was executed on the 8th April.

Major General Harsey on the 6th April, in forwarding a Divisional Order issued by him, notifying the promotion of Shaik Pultoo to be Havildar, recommended that the order of merit be bestowed on him, and that the energetic and gallant conduct of Lieutenant Baugh and Sergeant Hewson be noticed in General Orders. The Governor General, on the 10th April, remarks that it is not in the power of the Major General commanding the Division to make the promotion, which can proceed only from the Government of India, and therefore should not have appeared in a Divisional Order without the sanction of Government. But as the promotion has been announced and the distinction is richly deserved by Shaik Pultoo it is confirmed. The recommendation of Shaik Pultoo for the order of merit will come before the Government in the ordinary way through the Commander-in-Chief. The proposal to publish a General Order on Lieutenant Baugh and Sergeant Major

Hewson is rejected. The Governor General in Council greatly admires the determination and courage shown by those officers, but thinks it undesirable that the sepoys should be led to think the achievement extraordinary, or that the affair should be paraded at all.

On the 14th April Government with reference to trials then going on at Barrackpore, requested the Commander-in-Chief to empower General Hearsey to confirm all sentences on native commissioned officers. On the 16th April, the Commander-in-Chief replies that he has not the power (vide Act 7th, Vic. Chap. 18.) On the 18th April Government reply the Commander-in-Chief has power under 73rd Article of War; and on the 20th April, the Commander-in-Chief confirmed the sentence passed on Issuree Pandey, Jemadar, 34th Regiment, and a warrant was despatched authorizing the General to confirm such sentences. This man was tried on the 10th April for having, at Barrackpore on the 29th March, 1857, "he being then in command of the quarter-guard of his Regiment, not used his utmost or any endeavours to suppress a mutiny begun by Mungul Pandey, sepoy of the Regiment, the said sepoy having on the afternoon of that day, gone out into the parade ground in front of and near to the quarter-guard of the Regiment armed with a sword and musket, and then and there used words to excite the men of the Regiment to come forth and join him in resistance to lawful authority; and having then and there on the parade-ground and near to the quarter-guard of the Regiment, discharged his loaded musket at Sergeant Major James Thornton Hewson and Lieutenant Bempde Henry Baugh of the 34th Regt. N. I., and then and there, with a sword, struck and severely wounded them, and to the said Jemadar not having taken any measure to arrest and confine the said sepoy throughout the aforesaid occurrences, nor to assist the said Lieutenant Baugh and Sergeant Major Hewson, and he the said Jemadar, having moreover, then and there, discouraged and interfered to prevent any sepoys of his guard from going to their assistance, and for disobedience of the lawful command of his superior officers, in not having advanced with his guard to rescue the Sergeant and capture the aforesaid sepoy, Mungul Pandey, when, shortly after the occurrences set forth in the first charge, he was ordered to do so by Brevet Colonel S. G. Wheler, Commanding the 34th Regt. N. I." It was proved in evidence reported at length that the Jemadar though commanded to assist in arresting Mungul Pandey did not, and refused to allow three sepoys who wished to go to move. He was found guilty, twelve officers out of fourteen voting for death. He was executed on the 21st April.

In a subsequent Court of Enquiry held on the 17th April with closed doors it was stated by Durriou Singh, Jemadar, 34th N. I. that on the 26th of January, there was a halt of the three Companies which went to Chittagong at Calcutta near the fort. Subadar Major Ramlall of his Regiment was on guard at the Lieutenant Governor's at Allipore. On that day the Guard was renewed and returned to Barrackpore. The Subadar Major Ramlall, and Subadar Muddeh Khan and Subadar Lalla Gopal and Jamadar Lalla Gunness, sent for the Moonshee of the Regiment, and had a letter written and sent off to Rajah Maun Sing. Ramlall Subadar Major, came to Durriou Singh's guard, which was at the Treasury, on the day that the guards were relieved. He arrived about 10 o'clock, and remained till 12, talking in a treasonable manner, loud enough for all the men to hear, telling them what they were to do, and that he was going off to Barrackpore and could not remain there to conduct matters. The treasonable matters talked about were the cartridges and a refusal to serve any longer. The plan was with the four Regiments and three Companies going to Chittagong, to seize the fort. The King of Oude was to assist, as also the Calcutta Militia, and the sepoy's pay was to be raised to 10 Rupees a month. On the 15th April, a special Court of Enquiry was assembled at Barrackpore to receive the evidence of the European officers as to the state of feeling in the 34th N. I.

Brevet Colonel S. G. Wheler deposed—Regarding the seven Companies at Regimental Head Quarters, he was of opinion that since the latter end of January last, the men have been more or less in an excited state on account of the new rifle cartridges, and they have shown this feeling both secretly and openly on some occasions. In the latter end of January several Bungalows were burnt down, amongst others the Electric Telegraph Bungalow. A general parade took place on the 9th February, when the subject of the cartridge paper was explained to the men by the General. That explanation seemed to quiet the men a good deal for the time. From all that has occurred, he was of opinion that it was the intention of the Regiment to coerce and resist the Government, and that the feeling in the Regiment was decidedly bad; but that now the men appeared to be very much frightened. His distrust extended only to Hindoos.

Captain W. W. Aubert, 34th N. I., deposed that between May last year, (when he returned from Furlough,) and the date of his entering upon his appointment at Barrackpore, he observed a great want of respect on the part of the men towards their European officers. For instance, he frequently noticed, when he went to the lines on duty and in uniform, that the

men did not stand up and salute him ; a mark of disrespect for which he punished the men of his own Company, and reported those of other Companies. Again when the Regiment was coming down by water in October and November last year, it encountered a severe gale in which three boats were wrecked, but not a single sepoy came forward voluntarily to assist the European officers in getting their boats out of danger. His distrust extended only to Brahmins.

Ensign F. E. A. Chamier, Interpreter and Quarter Master, deposed that the native officers and men were generally disrespectful towards their European officers. He would not trust the Hindoos.

Captain C. C. Drury deposed that with the exception of a few men, the general feeling of the Regiment was very good indeed. Had found sepoys less respectful, but believed it arose from the lax state of discipline.

Lieut. A. C. Bunbury thought the feeling of the Regiment good. The Court were of opinion that the Sikhs and Mussulmans were trustworthy, but not the Hindoos. On 17th April the Court re-assembled, and Lieut. and Adjutant B. H. Baugh deposed that he did not exactly know what might be the present feeling of the native officers and men of the Regiment, but their conduct hitherto had caused him to distrust them. About two months ago, the men were ordered to be paraded in their Hindoostanee clothes, in order that the new cartridges might be shown to them ; their conduct on that occasion was most unruly and insubordinate. Moreover their conduct at the time of the attack on him was such that he had no hesitation in stating his conviction that all of them were cognizant of what was going to take place, fully prepared for what did take place, and all more or less implicated. On questioning some of the men a day or two afterwards as to where they were on the occasion referred to futile and confused answers were returned. He would rely on the Mussulmans and Sikhs. Noticed a change in the regiment from the time of the formation of Rifle Depots.

Lieut. and Brevet Capt. A. S. Allen believed that the Regiment had shewn no symptoms of disloyalty as sepoys, had tried to save him on the 29th March, and one man revealed a combination of all the Regiments at Barrackpore. Would have as much confidence in the 34th Native Infantry as in any native Regiment.

Lieut. J. T. Liscombe deposed that he considered the Regiment to be in a disaffected state as on going down to the lines on the evening of the 29th March he saw the whole of the men there looking on at the armed mutineer, and not attempting to seize him.

The Court upon the additional evidence before them, adhere to their former opinion.

On the 29th April Major General Hearsey presented to Government a Petition from the three Companies of the 34th Regiment N. I. stationed at Chittagong, expressive of the exceeding abhorrence with which they have viewed the recent disgraceful conduct of some of their comrades at Regimental Head Quarters at Barrackpore, and at the same time begging to assure the Government of their own faithful and loyal feelings towards the State. On the 29th March there were in the 34th Regiment 335 Brahmins, 237 Chuttees, 231 Hindoos of lower caste, 12 Christians (two of them sepoys) 200 Mussulmans and 74 Seikhs.

On the 30th April the Governor General records his opinion that the Regiment must be disbanded. The disbandment to be so far tempered as that those of all ranks who were manifestly absent from the lines on the 29th of March, shall be exempted from it, as also those who upon that or any other recent occasion have shown attachment, and fidelity to their officers and to the State. But the Governor General sees no possibility of drawing a line of separation between creeds, in the spirit of the decision given by the special Court of Enquiry, and which should have the effect of relieving the Sikhs and Mussulmans who were present, from the punishment to be inflicted upon the Hindoos. It would be impolitic and dangerous to attempt it. Mr. Dorin concurs. General J. Low concurs, and while fearing some good men may be involved in the order, thinks it is in the highest degree important to avoid any act which could be supposed by the Indian community to indicate that Government is more indulgent towards certain classes of men among its native soldiers than it is to any other class on the score of their religion. Mr. Grant concurs deeming the punishment even lenient. Mr. B. Peacock concurs, but would extend the penalty to certain individuals exempted by the Governor General. In subsequent correspondence the exemptions are upheld. On the 4th May, 1857, the Governor General in Council in a General Order recapitulates the facts, and sentences the Regiment with exceptions to disbanding. The sentence was carried out on the 6th May.

On the 3d April the Military Secretary informed Major General Hearsey that Colonel S. G. Wheler, Commanding 34th N. I. had of late held language to the men of his Regiment, indicating that it was his expectation that they would, sooner or later, be converted to Christianity, and that he has lately addressed them on religious subjects, and requested information. In reply Brigadier C. Grant stated that he knew only one occasion on which Col. Wheler had addressed the men, and on that one he said the British Government never interfered with

the religion of its subjects. Lieut. Col. Wheler himself replied that he had not expressed any belief that the sepoys would become Christians, though he much wished it, but with regard to his having addressed the sepoys on religious subjects, he said that during the last twenty years and upwards he had been in the habit of speaking to natives of all classes, sepoys and others, making no distinction; since there is no respect of persons with God, on the subject of our religion, in the highways, cities, bazars, and villages (not in the lines and regimental bazars). He has done this from a conviction that every converted Christian is expected or rather commanded by the Scriptures to make known the glad tidings of salvation to his lost fellow creatures, our Saviour having offered himself up as a sacrifice for the sins of the whole world, by which alone salvation can be secured. He has directed that this salvation should be freely offered to all, without exception.

On the 13th April, Government request further information, particularly as to the point whether Colonel Wheler had spoken of religion to the men of his own Regiment. In reply Colonel Wheler observes that it has been his invariable plan to act on the broad line which Scripture enforces, that is, to speak without reserve to every person; and therefore whenever he addresses natives on this subject, whether individually or collectively, it had been no question with him as to whether the person or persons he addressed belong to this or that Regiment, or whether he is a shopkeeper, merchant, or otherwise, but speak to all alike, as sinners in the sight of God; and he has no doubt that he has often, in this way (indeed, is quite certain) addressed sepoys of his own Regiment, as also of other Regiments at this and other stations where he has been quartered.

On the 9th April, the Governor General records his opinion that Colonel Wheler's conduct on the 29th March, demands investigation. His Lordship adds that Colonel Wheler's answers to enquiries directed to him about his religious teaching are not satisfactory, but he does not propose to submit this part of his conduct to Military investigation. The Members of Council agree with His Lordship.

On the 29th March, Colonel Burney reports that the men of the 63rd N. I. stationed at Soorie object to receive their furlough, alleging that the men of the Barrackpore regiments do not intend to take theirs. Two men from Barrackpore had come up by train via Raneegeunge to Soorie with a written communication. Previous to this the men agreed to take furlough. The men immediately after returned to a sense of their duty. Major General Hearsey recommends that the fourteen men conspicuous for this refusal should be dismissed the service. On

the 6th April the Governor General observes that he cannot concur in the recommendation of Major General Hearsey, as the offence was accompanied by exterminating circumstances and followed by their return to duty. The men belonged to a Regiment which had resisted all overtures to shake their fidelity, and it was therefore sound policy to pass over the offence with a warning. The Members of Council concurred, Major General Low remarking that on any future occasion any sepoy who took a prominent part in such a proceeding should be summarily dismissed.

On the 2nd April Colonel Keith Young forwards to the Government of India proceedings at a Native General Court Martial held at Fort William on Boodheelall Tewarry and Bahadoor Singh, sepoys of the 2d N. I. Grenadiers for having when on duty on the Town Major's Guard at Fort William, at or about 10 o'clock on the night of the 10th of March, 1857, quit their guard without being regularly relieved and without leave, and not returned until brought back as prisoners on the following morning. "2nd. For mutiny in having during the absence from the guard, as set forth in the first charge, at about half past 10 o'clock at night, together gone to the Mint Guard in Calcutta, and then and there endeavoured to induce Soobadar Muddeh Khan, then Commanding the Mint Guard, to quit his post, and march on that night with his guard into Fort William, for the purpose of joining in an intended mutiny or concealed combination against the State." Subadar Muddeh Khan, Mussalman, affirmed that on the 10th March while in command of the Mint Guard at about the time of half past 10 o'clock at night, he was sitting on my charpoy, reading. "These two sepoys who are now prisoners before this Court (witness pointing to them both) came up to me. I said to them, where do you come from and who are you? The sepoy who is on the left (pointing to the prisoner Boodheelall Tewarry) said, I have come from the Fort and from the men off duty on the Reserve Guard. I said, well. The sepoy, the one who was speaking, said, At 12 o'clock the Calcutta Militia is coming into the fort, and do you also bring the Mint Guard at that time into the fort, the Governor General is going up to Barrackpore at 10 o'clock, and after taking possession of the magazine there will be some fighting. I was angry and told him to be silent, saying, Hold your tongue, you rascal! how can you say such improper things? I said, get out of this. They went to the door of the guard room and again stopped. I called out for the Naick of the guard, Allahooddeen, and told him to place them in confinement and place an extra sentry over them. I gave orders that no one should be allowed to come near to them, or speak to them.

They remained all night in confinement, and next morning I sent them off with a Naick and four, with the Havildar, who goes to make the daily report to the Town Major. This is what happened. When they were being taken off the guard they both joined their hands and begged to be pardoned. I said, I have no power. I cannot pardon such an act."

The evidence supported this statement, and the Court sentenced the prisoners to fourteen years' imprisonment with hard labour. The sentence was approved and confirmed by the Commander-in-Chief. General Anson however records on 1st April an opinion that death is the appropriate punishment for such an offence, but that to some even fourteen years of disgraceful labour may be worse than death. He also promises to reward the Subadar who arrested the men.

On the 19th May the Governor General in Council reports to the Court of Directors the alarming events at Meerut and Delhi, and recommends that the six revolted Regiments be replaced by three Regiments of Europeans. Those events and the recent disclosures of bad feeling in the native army shew that the proportion of Europeans has been reduced too low. It is at present in the Bengal army as 1 to 24½, while in the Bombay army it is as 1 to 9½ and in the Madras army as 1 to 16½. If the proposed measure is adopted, the proportion in the Bengal army will be between those in the Bombay and Madras armies, viz., 1 to 11½. The financial result of the change would be :—

Cost of two Native Infantry Regiments, each of 1,160 native officers and men and two Colonels,	Rs. 5,44,336	8
Cost of an European Regiment of 927 rank and file, one Colonel,	5,30,985	6

Cost of European, less by the above, supposing every officer and man to be with his Regiment, 13,351 2

Further reductions might be made by allowing only one Colonel, one Lieutenant Colonel, one Surgeon, one Adjutant and one Quarter Master. On the same day a narrative was enclosed stating that some eighty-five men of the 3d Light Cavalry who had been tried by a Court Martial, for refusing to use their cartridges, the old sort, as none of the new kind had been issued, were sentenced to imprisonment, and sent to Jail on the 9th May. On the 10th, the troopers of the Regiment broke into the Jail, and released these men. Nothing is known of the further proceedings at Meerut, but that some 100 men of the 3d Cavalry left the station, and took possession of the Hindun Bridge; telegraphic communication between Delhi

and Agra, and between Meerut and Allyghur, was interrupted; a sepoy arrived, and a Cavalry trooper was apprehended at Bolundshuhur on the 11th. At Allyghur all appeared quiet; strong bodies of police were placed on the road to Meerut, to intercept all straggling sepoys and sowars. The mutineers from Meerut appear to have proceeded to Delhi, and on being joined by the native troops at that place headed by the 38th Regt. N. I., took possession of the palace, fort and town. On the 13th, five sepoys of the 11th and 20th Native Infantry were apprehended at Allyghur. These men had left Meerut and were sent to Jail. Mr. Carter, a Railway Engineer reached Allyghur, having fled from Puloa (probably Purlwal), twenty-seven miles from Delhi, on the road to Muttra. He reported that a large body of insurgents had marched from Delhi towards Agra via Ballaghur (probably Bullumghur, near Pulwal), where Mr. Roods, the Portrait Painter is said to have been killed.

In a message dated the 14th, the Lieut. Governor said that he had received authentic intelligence from the King of Delhi that the town and fort, and his own person, were in the hands of the insurgent regiments, which joined about 100 of the Meerut troops, and opened the gates. The treasury and fort at Meerut were safe on the 12th, and the troops ready to move. Mr. Colvin states that he had addressed the native troops at Agra. A deep and genuine conviction has seized the minds of the sepoys of the army generally, that the Government is steadily bent upon making them lose caste by handling impure things. Mr. Colvin urges the desirableness of issuing a proclamation to the army, pointing out that Government would in every way respect and protect their religious feelings and usages of religion and caste. On the 15th Mr. Colvin recommends that Martial Law should be proclaimed in the Meerut district, the force there being strong and fully prepared to carry out the measure; this was authorized at once. The Maharajah Scindiah had offered his own body guard and a battery of artillery. In addition, a regiment of Cavalry, and a battery of the Contingent, were to go to Agra, and two regiments of Infantry to occupy the road between Delhi and Agra. The mutineers from Meerut appear to have reached Delhi on Monday night, the 11th or Tuesday, the 12th; the Delhi troops, headed by the 3rd Light Infantry, fraternized with them, shot their officers, and put to death all the Europeans, with the exception of a few who escaped across the Jumna. Lieutenant Willoughby, the Commissary of Ordnance, blew up the magazine; the powder magazine, which is near the native lines, alone fell into the hands of the insurgents. Thirty Europeans are said to have been massacred in the city and civil lines. The rebels declared the heir apparent

King ; they are apparently organizing a plan of regular Government ; they remain in the place ; their policy is supposed to be to annex the adjoining districts to their newly founded kingdom ; they may have received fifty lakhs of Rupees. The Regiments that have joined are the 11th, 20th (Meerut Regiments) 38th, 54th and 74th (the Delhi Garrison.) The Lieutenant Governor has received aid from Gwalior and Bhurtpore. The Bhurtpore troops and Gwalior Contingent are to arrive at Muttra in a day or two to keep open the road. A message from Meerut reports the arrival of the Sappers and Miners from Roorkee. The Sirmoor Battalion (Goorkhas) has marched from Deyrah, and the 75th Foot and 1st European Regiments from the Hills. The European Infantry and Artillery Barracks form a place of safety for women and stores, guarded by European troops. The Sirmoor Battalion reached Meerut on the evening of the 16th. There is excitement at Cawnpore, Allahabad and Benares. Full power is given to Sir Henry Lawrence to raise Irregulars. Intelligence received of the Sappers at Meerut having mutinied on the 16th, shot their officers and proceeded to Delhi. They were followed, and about fifty were cut up, the men dispersing. At Lucknow all was prepared on the 17th, the troops having concentrated so as to protect the treasury and magazine. The Lieutenant Governor and Commander-in-Chief have been warned of the importance of attacking Delhi at once. All is quiet at Agra. The Syuds and Jats are entering the field on our side. A wing of the Bengal Seikh Police Battalion has been ordered to Dinapore. The powers of officers commanding troops to assemble General Courts Martial have been extended. Sir Henry Lawrence has been created Brigadier General with full military power in Oude.

A proclamation has been issued assuring the native troops and the people that Government never have and never will interfere with their religious observances or creed. A General Order has also been issued, authorizing the Commander-in-Chief, the Lieutenant Governors, Chief Commissioners, Major Generals, Brigadiers and Officers Commanding Stations at which there may be two or more corps, to promote any non-commissioned officer to a commission, and sepoys to non-commissioned officers for any conspicuous acts of loyalty and gallantry, and the Commander-in-Chief and Lieutenant Governor and Chief Commissioner are authorized to admit native officers and soldiers to the order of merit. Enclosed are telegraphic messages on which the narrative is founded, and the Act VIII. of 1857 for increasing the powers of officers Commanding Divisions and Stations for the trial and punishment of officers against the Articles of War for the native army. The most remarkable message is the follow-

ing which contains most of the facts relating to the demand for reinforcements in a few words.

The Governor General to the Lieutenant Governor, Agra, "send word as quickly as possible to Sir John Lawrence, that he is to send down such of the Punjab Regiments and European Regiments as he can safely spare.

Every exertion must be made to regain Delhi, every hour is of importance. If you find it necessary you may apply to the Rajah of Puttialla, or to the Rajah of Jheend, for troops. I am glad you accepted Scindia's. I have sent for an European Regiment from Madras and from Pegu, but they cannot be here for a fortnight, and until then I cannot spare a single European from here. Peace is ratified, but the troops from Persia cannot be here for many weeks, send on the following message to the Commander-in-Chief.

The Madras Fusiliers left Madras for Calcutta on Sunday. The *Oriental* has been despatched to bring up the 35th from Moulmein. An officer goes to Ceylon by to-morrow's mail, to bring European troops from there. A European Regiment has been ordered from Kurrachee by steam to Mooltan, and will be brought up from there in boats. Two European Regiments and some Artillery will come round to Calcutta from Bombay, where they are expected immediately from Persia. I hope to catch the Regiments which are on their way to China. But time is every thing, and I beg you to make short work of Delhi."

On the 4th May Sir Henry Lawrence, Chief Commissioner of Oude reports that on the 2nd May the 7th Oude Regiment refused to bite the cartridges when ordered by its own officers, and again by the Brigadier. It was ordered to parade on the 4th. On the 3rd symptoms of disaffection appeared and in the afternoon it was in a very mutinous state. A force consisting of a field battery, a wing of H. M.'s 32d, one of the 48th and 71st N. I. and of 7th Cavalry, the 2nd Oude Cavalry and 4th Oude Infantry marched against it. The Regiment was found perfectly quiet and expressed contrition; but on seeing the guns drawn up half their body fled throwing down their arms. The Cavalry pursued and brought up some of them. The Regiment was then disarmed, and was told that Government would be asked to disband the corps; but that those found guiltless might be re-enlisted. On the 10th May the Governor General records his opinion that Sir Henry Lawrence should be supported, but that the Regiment should be finally disbanded. Mr. Dorin is of opinion that a severe punishment is necessary to check the epidemic of mutiny. Mr. Grant believes it expedient to wait for further information. General Low would select a few of the most guilty for trial, as would Mr. Peacock.

The following order was dispatched on the 13th May to Lucknow: Sir Henry Lawrence is informed that the Governor General in Council approves of the prompt measures adopted by him in regard to the 7th Oude Regiment: but His Lordship is of opinion, that the disbandment to whatever length it may be carried should be real, and that the men whose innocence can be shown, and whose general character is irreproachable, or those by whom offenders have been denounced, and mutinous designs disclosed, should be retained in the ranks, the others being dismissed absolutely and finally, as there is a fiction in discharging soldiers one day to take them back the next, whatever may be their claims to mercy, which would greatly weaken the general effect of the measure of disbandment as an example. The extent to which such a measure should be carried, and the nature of further punishment in individual cases, will be considered when Government is informed of all the circumstances attendant upon the occurrences of the 4th May; and the Governor General in Council feels it necessary that he should fully understand how the refusal on the 2nd May to bite the cartridges was manifested; what passed previously on the subject, and what were the circumstances which led to the refusal; how the symptoms of disaffection, shown on the 3rd May appeared; whether in such a manner as to implicate the whole Regiment or a portion only; and if the latter how many individuals. Explanation was also necessary as to the Regiment being reported to be in a state of mutiny on the 4th, for on the same evening it was found perfectly quiet and expressed contrition. Sir Henry Lawrence was also desired to state whether subsequently the circumstance of the Regiment breaking and throwing down its arms formed a part of his grounds for disarming it, and whether the panic was attributable to any movements accidental or otherwise, threatening or seeming to threaten, the opening of fire. If these points are not embraced in the enquiry stated in Sir Henry's Telegram of the 12th to have been already made, he is requested to make a further investigation into the subject, including the conduct of the European officers of the Regiment prior to and during the occurrences in question. A book recently published by order of Government on the practice with Rifles, in which it is directed that the cartridges should be torn open, and no allusion is made to the old practice of biting it, was despatched to the Regiments of Oude Local Infantry on the 4th April; Sir Henry was directed to state when that work was received by the corps at Lucknow.

On the 17th May in a Telegram Sir Henry states that the case being emergent he has disposed of the 7th Regiment of

Oude, by dismissing 15 sepoys, and with one or two exceptions, the native officers, the rest forgiven. Their Commanding Officer has returned from the Hills, places implicit trust in them. 200 men only will be armed until receipt of orders.

On the 3d June the Governor General forwards to the Court of Directors the proceedings of a Native General Court Martial on the trial of Salickram Sing, Jemadar, 70th Native Infantry. He was tried on the following charges :—First charge. In having begun a mutiny, and excited others to join in a mutiny in the Regiment to which he belongs, in the following instances :—1st. In having at Barrackpore, on the evening of the 5th March, 1857, in presence of Issuree Sing, Havildar of the Light Company, addressed Jemadar Sewbuccus Sing, of the Light Company 70th Regiment Native Infantry, in words to the following effect :—"My only hope is in you ; what do you say ? the sepoys may bite the new cartridges if they like, but I will not bite them," thereby endeavouring to persuade the said Jemadar and Havildar to combine with him in resistance to lawful authority. 2nd. In having at Barrackpore, on the evening of the same day, endeavoured to persuade the men of his Company to disobey the order they had received to thatch their huts without delay ; informing them that they need be no hurry in thatching their huts, as there would shortly be a disturbance, thereby inciting the men to resist authority. 3rd. In having, at Barrackpore, on the evening of the 8th March, 1857, had a meeting of non-commissioned officers and sepoys of his Regiment at his hut in the lines of the 1st Company 70th Regiment Native Infantry, in breach of the standing orders of the army and of the Regiment. Second charge. For conduct unbecoming an officer, in having made no report to his Commanding Officer of any intended disturbance, although he informed the men that a disturbance was intended, as set forth in the second instance of the first charge.

The Court convict him of mutiny and sentenced him to be dismissed from the service. The Commander-in-Chief concurs in the verdict, but considers mere dismissal from the service a very inadequate punishment for the crime of mutiny, and sends back the proceedings for revision of the sentence. The Court reassemble, and adhere to their original sentence.

On the 3rd June the Governor General forwards to the Court of Directors the proceedings of an European Court of Enquiry into the conduct of Lieutenant Colonel Mitchell, Commanding the 19th Native Infantry in connection with the occurrences which led to the disbandment of that corps. With these proceedings were also sent a series of correspondence, and the proceedings of a Court of Enquiry at Berhampore relating to the circum-

stances before and subsequent to the outbreak of that Regiment. The sentiments of the Governor General and the facts elicited at the Enquiry are recorded in the following Minute by His Lordship, concurred in by the Members of the Council : — “ A careful perusal of these papers, satisfies me that Lieutenant Colonel Mitchell in dealing with the outbreak of the 19th Regiment N. I. on the 26th February, did not shew the temper and firmness which is required of a Commanding Officer in such circumstances. I cannot doubt that, during the first part of the proceedings, Lieutenant Colonel Mitchell was, as some witnesses have testified, very angry. The inconsiderate threat, that if the men did not receive the cartridges he would take them to Burmah or China, where they would die, which is not denied by Lieutenant Colonel Mitchell, could not have proceeded from an officer speaking advisedly on a matter in which calmness and self possession were urgently needed. But it is especially in the time and manner of withdrawing the Artillery and Cavalry, which he had brought upon the ground for the purpose of compelling to obedience the Regiment which had then taken arms, that Lieutenant Colonel Mitchell's gravest error of a want of firmness consists. The evidence upon this point varies somewhat, but not materially. Lieutenant MacAndrew, Adjutant of the Regiment thinks, that the submission of the sepoys in lodging their arms was simultaneous with the withdrawal of the Artillery. Captain MacDougall did not see any men lodge their arms, fifty men of his own Company agreed to do so, but they did nothing more than sit down with their arms in their hands. Captain Manning did not see the arms lodged by the few men of his Company who had them. Captain Newhouse says that the arms were not lodged until after he saw the torches which accompanied the Artillery move off the ground. Lieutenant Colonel Mitchell's statement is, that he made no compromise with the men, and that before he ordered the guns and cavalry off, the native officers declared to him that some of the Companies had lodged their arms, and that the rest were doing so. It is no doubt true that there was no arranged bargain between Lieutenant Colonel Mitchell and his men ; but whereas it was his duty to listen to no proposals, and to accept no assurances, until he had satisfied himself, through his European officers, that every musket in the ranks was laid down, he did yield to representations made on behalf of a Regiment in mutiny with arms in its hands, and he did so in order to obtain from them that which he ought to have exacted as an act of obedience. It is impossible not to view the mode in which Lieutenant Colonel Mitchell withdrew the coercing force as a triumph to the mutinous sepoys. After what has passed in this matter,

I submit that the Government cannot feel that confidence in Lieutenant Colonel Mitchell's judgment and firmness which it ought to be able to repose in every officer commanding a Regiment, and I propose that the Commander-in-Chief be requested to appoint some other officer to raise and command the corps which will take the place of the disbanded 19th Regiment, and to find such other employment for Lieutenant Mitchell as His Excellency may deem suitable."

On the 5th June, the Governor General in Council in forwarding to the Court of Directors a continuation of the narrative sent on the 18th May, and a report from the Lieutenant Governor, North West Provinces, of the events which occurred there up to 22nd May, observes, that the tidings now sent are not without an admixture of hopeful intelligence, and that His Lordship confidently hopes that by the next mail he will be able to report that signal retribution has been inflicted on the mutineers and rebels at Delhi, and that the immediate result has been a perceptible tendency in all the districts to return, at no distant period, to quiet and good order. The Governor General also reports the death of General Anson, and the instructions sent to General Sir H. Barnard to assume command of the force proceeding against Delhi, and warning him of the necessity of attacking the insurgents as early as possible; the continuance of order and quiet, already much imperilled by excitement at the most important stations of Allahabad, Cawnpore, Lucknow and Agra, and in the adjoining districts, being dependent on the early and signal discomfiture of the rebels in arms at Delhi, and in its neighbourhood. The Governor General further informs the Court that, although Major General Reed, c. b. Commanding the Peshawur Division, by right of seniority, becomes Provincial Commander-in-Chief, His Lordship has, considering the emergency of existing circumstances, and the absolute necessity of having at the head of the army some officer of pre-eminent qualifications in point of knowledge of native troops and Indian experience, requested Lieutenant General Sir Patrick Grant to come to Calcutta, and assume command, temporarily, of the Bengal Army.

NARRATIVE OF EVENTS.

Allahabad, May 19th.—Every precaution taken to secure the fort and cantonments. Troops quiet and well behaved, 160 of the Oude Cavalry had arrived from Pertaubghur. City quiet and no fear of disturbance unless something occurs. *Feu de joie* prohibited on Her Majesty's Birth-day.—*23rd.*—70 artillery invalids arrived from Chunar and placed in the fort in which there are also 400 Scikhs of the Regiment of Ferozepore. On the recommendation of the Magistrate ladies and children are permitted to enter

the fort for safety. Two men, one apparently a discharged sepoy, were apprehended by some men of the 6th Native Infantry in their lines, trying to tamper with the sepoys. The men were imprisoned, and refused to give any account of themselves. The sepoys, who apprehended them, were immediately promoted. The 6th Regiment Native Infantry volunteered to be led against the insurgents at Delhi. The thanks of the Governor General were conveyed to the corps; and a General Order issued on the subject. All remains quiet; and the European troops are being pushed through to Cawnpore. 500 Irregulars authorized to be raised, the studs to supply undersized horses.

Agra.—(Taken from the Lieutenant Governor's report.)
 "There has been a great deal of excitement here. A parade of troops was ordered on the 13th, and the Lieutenant Governor spoke to them plainly and fully on the subject of the gross delusions that have so widely prevailed regarding the intention of the Government, to meddle with their religious feelings or habits. An offer was made that any of them may take their discharge, if they were not satisfied with the explanation and assurances just given. They all expressed their belief in the Lieutenant Governor's communications to them. They have undoubtedly been infected by a deep distrust of our purposes. Measures have been taken to strengthen the fort and to place in it some considerable amount of supplies. The European force is not to go into it excepting in the very last extremity. Portions of the Gwalior Contingent have been pushed forward to Agra as a reinforcement. The Grenadier Regiment of that force will occupy the station of Etawa on the 25th instant. The Maharaja insists on sending to Agra the whole of his body guard, a force more showy than useful; but calculated to have a calming effect on the public mind. The Electric Telegraph has been of the most invaluable use during the whole of this excited period." Two Companies of a Regiment at Agra having mutinied at Muttra, it was considered expedient to disarm the 44th and 67th Regiments on the 31st. The Lieutenant Governor in a Telegram of the 24th May states: "on the mode of dealing with the mutineers, I would strenuously oppose general severity towards all. Such a course would, as we are unanimously convinced by a knowledge of the feeling of the people, acquired amongst them from a variety of sources, estrange the remainder of the army. Hope, I am firmly convinced, should be held out to all those who were not ringleaders or actively concerned in murder and violence. Many are in the rebels' ranks because they could not get away: many certainly thought we were tricking them out of their caste; and this opinion is held, however unwisely, by the mass of the population, and even by

some of the more intelligent classes. Never was delusion more wide or deep. Many of the best soldiers in the army, amongst others of its most faithful section, the Irregular Cavalry, show a marked reluctance to engage in a war against men whom they believe to have been misled on the point of religious honor. A tone of general menace would, I am persuaded, be wrong." On the 25th May the Governor General telegraphs an order that no mercy should be shewn to any man who resists with arms the Commander-in-Chief's force; any man who has taken part in the murder of an European officer or other person; any ring-leader. Generally, a distinction should be drawn between the Regiments which murdered their officers and those which did not. To men of the latter, forbearance in the first instance, and hope of pardon, if they should show a claim to it, may be extended. On the 25th May the Lieutenant Governor issued the following proclamation:—"Soldiers engaged in the late disturbances, who are desirous of going to their own homes, and who give up their arms at the nearest Government Civil or Military post, and retire quietly, shall be permitted to do so unmolested. Many faithful soldiers have been driven into resistance to Government only because they were in the ranks and could not escape from them, and because they really thought their feelings of religion and honor injured by the measures of Government. This feeling was wholly a mistake, but it acted on men's minds. A proclamation of the Governor General now issued is perfectly explicit, and will remove all doubt on these points. Every evil-minded instigator in the disturbance, and those guilty of heinous crimes against private persons, shall be punished. All those who appear in arms against the Government, after this notification is known, shall be treated as open enemies." On the 26th May the proclamation is cancelled by Telegraph. On the 27th May Mr. Colvin earnestly requests that his proclamation may stand. On the 27th May the Governor General reiterates his order. On the 28th May Mr. Colvin reports that to cancel his order is to cripple his authority. On the 29th May an order is transmitted to the Commander-in-Chief, cancelling Mr. Colvin's proclamation, and on the same day the following remarks are communicated to Mr. Colvin by Government. "The proclamation issued by the Lieutenant Governor of the North West Provinces on the 25th instant is open to grave objection. By the 1st Clause; it allows all soldiers engaged in the late disturbances, who gave up their arms, to go to their homes unmolested." By the 3rd Clause, the operation of the first is limited, in so far as it is declared that "every evil minded instigator in the disturbances and those guilty of heinous crimes against private persons,

shall be punished;" but it is expressly said that only these shall be punished. In the course of these disturbances officers have been killed by their own men, or by the men of other Regiments, and it is known that two Regiments have made themselves especially infamous by such traitorous and murderous acts. It cannot have been intended by the Lieutenant Governor that the sepoys who participated in the murder of officers should escape punishment, yet it is at least doubtful whether under the proclamation they are not entitled to go free, as soon as their arms have been delivered up, and certainly their liberty could not be refused to them unless the term "private person;" crimes against whom are the only crimes denounced, be interpreted as including officers engaged in commanding their men. To stretch interpretations on the side of severity, in a matter affecting the lives of men, is not a right course; and it is especially necessary in the case of a proclamation of pardon, to avoid even the appearance of straining the plain meaning of such a proclamation in order to take lives of any persons who have surrendered upon the faith of it. But furthermore, upon any interpretation of this proclamation, the whole burden of proof that a mutineer has been guilty of the crimes selected for punishment is by this proclamation thrown upon the Government. It is not impossible that Government may be unable to prove one of these punishable crimes against any of those who surrender, and as the officer of Government to whom the sepoy may present himself to deliver up his arms cannot be expected to have any knowledge of the man's conduct, it is difficult to see how there can be any investigation whatever, even in the cases of the men known to belong to the Regiments by which the worst outrages have been committed. No power is reserved to detain a sepoy for the purpose of enquiring into his conduct before conceding to him permission to seek his home unmolested; and though this power might possibly be assumed in the case of individuals against whom suspicion should arise, it would be nothing less than a snare to use it against all the men of a particular regiment without having given notice of the intention to do so. There is then no reason why, with this proclamation in his hand, every sepoy of the 20th or 38th Regiments should not leave Delhi, present himself at the nearest Civil or Military post, and claim of right to go free. In whatever sense the proclamation may be understood by the Lieutenant Governor of the North West Provinces, no action can hereafter be taken under it which shall put the good faith of the Government of India above suspicion except such as would allow of the unimpeded escape of men who have murdered their officers. This would

be a heavy and lasting reproach to the Government of India, and a severe blow to the future discipline of the army. On this account it is unavoidable that the proclamation should be cancelled or superseded with as little delay as possible. But the Lieutenant Governor of the North West Provinces, has earnestly deprecated this course, as one which would weaken his power and discredit his authority. Seeing the difficulties with which the local Government at Agra has to deal, there is force in this appeal. Absolutely to annul an offer of pardon made, however unauthorised, by so high an authority as the Lieutenant Governor of Agra, might have a dangerous effect at this crisis; and in the present aspect of affairs the Governor General in Council does not fail to see the advantages, as tending to hasten the suppression of the rebellion, and the punishment of the more heinous criminals, of the offer of a large measure of mercy to that portion of the mutineers, who, under any circumstances, if they were now to submit, would be leniently dealt with. The number of men who have committed themselves to the rebellion, puts the punishment of all quite out of the question. Moreover, the immediate revocation of the terms on which pardon has been offered, and the substitution, before there had been time to take advantage of such terms, of others less favorable, could not fail to increase the mistrust and fear which has possessed the minds of the sepoys in the North West Provinces who are still in the performance of their duty. It is therefore resolved, that the proclamation of the Lieutenant Governor shall not be set aside until the Commander-in-Chief, now advancing upon Delhi, shall approach the city, when His Excellency will be instructed to issue the following proclamation in the name of the Governor General in Council :—

“ PROCLAMATION.

“The Governor General in Council, having reason to believe that amongst the mutineers in Delhi, there are many that have been constrained against their will or deceived into taking part in the proceedings of those around them, proclaims as follows :—Every soldier of a Regiment which, though it has deserted its post, has not committed outrages, will receive a free pardon and permission to proceed his home, if he immediately delivers up his arms to the Civil or Military authority, and if no heinous crime is shown to have been perpetrated by himself personally. This offer of free and unconditional pardon cannot be extended to those Regiments which have killed or wounded their officers, or other persons, or which have been concerned in the commission of cruel outrages. The men of such Regiments must submit themselves unconditionally to the

authority and justice of the Government of India. Any proclamation offering pardon to soldiers engaged in the late disturbances, which may have been issued by the local authorities previously to the promulgation of the present proclamation, will thereupon cease to have effect; but all persons who may have availed themselves of the offers made in such proclamations shall enjoy the benefit thereof. The Governor General in Council cannot conclude his remarks upon this subject without an expression of his regret that the Honorable the Lieutenant Governor should, without necessity for any extreme haste, have taken the step of issuing a proclamation of this grave character, affecting the reputation of Government in every part of India, and the discipline of the Bengal Army, without previous reference to him. The consequences have been very embarrassing. When the proclamation was issued, His Honor had a few hours before received a telegraphic dispatch showing that the general views of the Governor General respecting the treatment of the mutineers were such as to be wholly irreconcilable with the spirit of the Lieutenant Governor's proclamation. Against these views, as being in his opinion too severe for the existing position of affairs, he remonstrated in a telegraphic dispatch, to which in ordinary course His Honor might have expected an answer in a very few hours. The Governor General in Council is unable to concur with the Lieutenant Governor, in thinking that the terms of his proclamation are substantially consistent with the views expressed in that answer, and however that may be, the proclamation was issued without awaiting that answer. It would not have caused a delay of more than twenty-four or thirty-six hours, to have referred the proposed proclamation in terms to the Government of India, to which authority, in ordinary course, the decision of such an important military question belonged; and as the main object of the measure was to work upon the mutineers at Delhi, even if circumstances had been such as to render the delay of a telegraphic reference to the Governor General in Council inadmissible, the Commander-in-Chief, then on his march to that city, was the subordinate authority to whom the responsibility of acting in the matter without the order of Government should naturally have fallen. The point is one of so much importance that His Lordship in Council feels it necessary to explain himself to the Lieutenant Governor thus fully upon it, but he makes every allowance for the great difficulties of His Honor's position, and he is assured that His Honor acted as he judged best for the public interests in a time of danger."

Attock.—Occupied by a wing of 27th Foot; the occupation of that fortress by Europeans being considered of vital importance as securing the passage of the river.

Allyghur, 20th.—The four Companies of the 9th Native Infantry after behaving very well for some time, suddenly rose against their officers, who were compelled to leave them. No European injured. The treasury was plundered, and the prisoners in Jail liberated. The officers and civilians retired to Hattrass, eighty men of the 1st Gwalior Cavalry at Hattrass deserted, supposed to have gone to Delhi. Troops could not be spared from Agra to reoccupy Allyghur; but subsequently some Volunteers, headed by Captain Watson and accompanied by Mr. Cocks, c. s. proceeded to the place, and it is understood are there.

Azimghur.—All contained quiet up to the 26th, when some excitement showed itself, but the men were soon pacified. *5th June.*—A message from Benares reports that Azimghur has fallen. Four officers said to have been killed; names not given. Ladies all safe at Ghazeepore, where they appear to have been sent. A party of Irregular Cavalry had previously been sent to bring away the treasure from both Azimghur and Goruckpore. It is not known whether the treasure left prior to the mutiny of the 17th Native Infantry.

Barrackpore.—The native troops continue quiet. As a matter of precaution, 400 men of the 84th Foot, were removed to Barrackpore. On the 25th May the native officers and men of the 70th Regiment N. I. on hearing of the dreadful massacres committed at Meerut and Delhi by certain mutinous native Regiments, and having heard also of disaffection said to exist in the ranks of some other corps in the Upper Provinces, petitioned to be allowed to proceed against the mutineers. The Governor General proceeded up to Barrackpore and addressed the men. "Native officers and soldiers of the 70th, your petition reached me yesterday, and I am come to answer it. I have received it with delight; not because I doubted your fidelity, for I know the trust that is reposed in you by your gallant Colonel, I know the high opinion which your brave General, with his long experience of the sepoys of Bengal, entertains of you; and I have myself marked your good and faithful conduct under recent bad example, when many fell away. I therefore felt sure of your loyalty. But your petition gives me pleasure, because it is an open contradiction of the rumour which has gone abroad, that the unfaithfulness of some Regiments, has tainted all within their reach. You have refuted the unjust suspicion nobly. Men of the 70th I will answer your petition. You have asked to be sent to meet the mutineers of Delhi. You shall go. In a few days, as soon as the arrangements can be made for your progress you shall proceed to the North West." The remaining Companies of the 34th Native Infantry subsequently volunteered to proceed

against the mutineers. The thanks of Government were expressed to the corps.

Berhampore.—All quiet.

Bareilly.—The news from this place is obtained entirely from private sources. On the news of the outbreak at Meerut reaching, the troops displayed considerable excitement. The officers, however, pacified their men, and all has continued in a satisfactory state up to the 27th, the date of the last letter. A great want is felt of Irregular Cavalry throughout the Doab and in Rohilcund. Colonel Troup, who was in temporary command of Bareilly, authorized the officer commanding the 8th Irregular Cavalry, to increase his Regiment by 500 men ; this has been sanctioned. One troop was raised in a few days ; and a second troop was nearly ready. The Irregular Cavalry men on leave in Rohilcund and neighbourhood, had been desired to place themselves under the orders of Collectors of districts.

Benares, 19th.—The 13th Irregular Cavalry brought into the station from Sultanpore. *Feu de joie* was prohibited on Her Majesty's Birth-day. Things appear to have been kept quiet by the firm and conciliatory conduct of the Civil and Military authorities. The Head Quarters of the Division is so far removed, the Brigadier Commanding has been vested with authority over the neighbouring stations, which formerly constituted the Benares Division. One hundred of Her Majesty's 10th Foot having arrived from Dinapore, the parties of Europeans who arrived by transit carriages and bullock trains are sent on towards Cawnpore as rapidly as possible.

Bolundshuhur.—The Sirmoor Battalion, 400 men, which had been ordered down by Canal, were detained by damage done to the locks. The Civil officers were obliged to leave the place, but returned on the 25th. Rampore Horse are employed keeping the road clear. *1st June.*—The country between Allyghur and this place being fast quieted.

Cawnpore, 21st.—Strengthened by 50 Europeans and 2 Squadrons of Irregular Cavalry from Lucknow. Considerable excitement among the native troops, particularly in the 2nd Light Cavalry. That corps had sent emissaries into the camps of the three Native Infantry Regiments asking if they would support them in the event of an outrage. *22d.*—Matters took a favorable turn about half past 7 P. M. yesterday. Up to that time it appears that an outbreak was most imminent, guns were placed in position and every preparation made to meet it. The men were, however, quieted by an address to them by their Commandant through some native officers. Two guns and 300 men of all arms brought in by Maharajah of Bittore. *25th.*—Report on what was considered good authority that there would be an outbreak on the

24th or 25th. All preparations made, but nothing occurred. 26th.—All tranquil. The disaffected, discontented by the efficient measures coolly but determinately taken to meet any outbreak that might be attempted, are sobering down. 29th.—Parties of Oude Irregular Cavalry sent out to Goosaigunge and Mynpoorie to keep the road clear and put down plunderers. Reports from Native Agents more cheering and satisfactory. The 50 men of the 32d Foot sent back to Lucknow, 71 of the 84th having arrived 31st.—All quiet. 4th June.—The Telegraph communication between Cawnpore and Agra interrupted. 50 of Her Majesty's 84th Foot sent to Lucknow. The Lucknow mutineers had crossed the Ganges and Mendie Ghaut, *en route* to Delhi. The party of Oude Cavalry sent to Mynpoorie to keep open the communication had mutinied and murdered their officers.

Chunar, 19th.—The fort was occupied by the Infantry of the Invalid Battalion and Veterans residing at the place. There being no room for the whole native guard usually on duty in the fort, three Companies, a portion was sent back to Benares 20th.—Seventy artillery of the Invalid Battalion despatched to Allahabad.

Delhi.—Little authentic is known of the occurrences in Delhi. The Lieutenant Governor reported on the 22nd May that the retreating native Regiments from Meerut took their way to Delhi, where a few of the troopers first entered the town in straggling parties, harangued the mob and gained over to their cause the wing of the 38th Native Infantry, which was on duty in the town and at the palace. Several Europeans, Civil and Military, and ladies were at once cut down and massacred. The next step then seems to have been to murder all the Europeans in the Civil station, and very few escaped. The 38th, 54th, and 74th Regiments Native Infantry, were at the time at Delhi, with Captain DeTeissier's Horse Field Battery. The 74th Regiment joined without showing much alacrity in the rebel cause, and the Artillery men of the battery were only persuaded to take part with the mutineers when pressed by them in overwhelming numbers, and unable to extricate themselves from their power. A general massacre of all Europeans in and near the Civil and Military station of Delhi took place, but whether this was owing to the savage proceedings of the mutineers or to the truculence of the mob there is not yet the means of knowing. A number of officers were however enabled to escape from the general slaughter, and made their way with much difficulty through the surrounding villages to Meerut, occasionally treated with some kindness, but more frequently with neglect and some violence. Wherever the Goojur population predominated, they

plundered and murdered all parties ruthlessly. A Duffadar of the Gwalior Cavalry Regiment who had passed through Delhi four days previously, had reached Agra on the 29th. He describes the mutineers as robbing whom they please in the city. He says that a Regiment of Infantry, with four guns and some Cavalry, had left the city on the 23d to bring in the Rohtuck treasure. A part of the Meerut force was attacked near Ghazeeodeen Nuggur, by a large body of the insurgents from Delhi with five guns. The insurgents were thoroughly beaten, and dispersed with much loss; and the five guns, with ammunition and a great quantity of intrenching tools were taken from them. This victory, the Governor General in his letter to the Court of Directors forwarding the present narrative, says, will be of great value in proving to the mutineers and to the whole army, the prowess of the European troops, even in comparatively small bodies. and its occurrence just now is still more important, when, owing to difficulty in procuring sufficient carriage, and in moving the siege train which the Commander-in-Chief was organizing for the attack on Delhi, a delay of some days must take place before the attacking force can reach that fortress.

Dinapore.—Nothing has been heard from this place favourable or unfavourable. The European force consisted of half a Cawnpore battery, 3 guns and about 600 of Her Majesty's 10th.

Ferozepore, 13th May.—The 45th and 57th Native Infantry mutinied. The latter Regiment gave up its arms, while the former resisting, were attacked and dispersed by the Artillery, 61st Foot and 10th Light Cavalry which remained staunch.

Gwalior.—On the 28th May an outbreak of the troops of the Contingent was expected; preparations were made, and the ladies and families moved to the Residency. The Maharajah assisted with strong bodies of horse and foot, and placed a mansion attached to the place at the disposal of the ladies, where they would be safe. Nothing however occurred, and the ladies returned to cantonments the following day. The Contingent reported to be in a satisfactory state on the 1st June.

Hyderabad, (Deccan), 24th May.—The Resident recommended that the Electric Telegraph should be closed, as a means of communicating news from the North West Government considered it inexpedient to act on this. The proceedings at Delhi had caused considerable excitement in the city; but no disturbance was anticipated.

Jullunder.—The native troops are said to be obedient.

Kurnaul.—A party of the force from Umballah reached on the 21st. On the 24th a portion was pushed on to Paneeput; the rest of the force cannot get away till the 31st. The delay

caused by the want of carriage, and the non-arrival of the battering train from Phillour.

Lahore, 13th May.—The three Regiments of Native Infantry, 16th, 26th, and 49th and 8th Light Cavalry, were disarmed, and the men are doing duty without arms. The Seikh Sirdars are understood to have offered their services to Government. *3rd June.*—Sir J. Lawrence says all safe as yet in the Punjab; but the aspect of affairs most threatening. The whole native army are ready to break out; and unless a blow be soon struck, the Irregulars as a body will soon follow their example. Send for our troops from Persia, intercept the force now on its way to China, and bring it to Calcutta. Every European soldier will be required to save the country, if the whole of the native troops turn against us. Every precaution which foresight can dictate is being taken, to hold our own independently of the natives.

Lucknow, 23rd May.—Arrangements for the defence of the several posts have been completed, all considered safe, except from external influences. *25th.*—The Eed prayers concluded without any disturbances. *29th.*—Disturbances threatened outside. Tranquillity cannot be much larger maintained unless Delhi be speedily captured. *30th.*—An *emeute* in cantonments at 9 P. M., 25 of 7th Cavalry proved false. Several Bungalows burnt. Two or three officers killed, and the same number wounded; among the former is Brigadier Haudscomb. Quiet in city, majority appear loyal. *31st.*—Most of the Bungalows in cantonments burnt. An outbreak of mutineers, half of 48th, about half of 71st and some few of 13th Native Infantry, with two troops of 7th Light Cavalry fled towards Seetapore. Sir H. Lawrence followed for seven miles with four guns, two Companies of 32d Foot, and 300 Horse. The latter evinced no zeal. 30 prisoners taken. Mr. Gubbins went out with a few Sowars and attacked the rebels at 9-30 P. M. *2d June.*—Colonel Birch moved out from Seetapore with a wing to meet the mutineers, but they turned towards the Ganges, and do not appear to have rallied. The districts are still quiet, except one point about 20 miles North West of Lucknow; but it is expected that they will be quiet when they hear that eight men have been hanged, and that more are about to suffer. The faithful remnants of the 3rd Infantry Regiments, and 7th Light Cavalry, amounting to about 700 men, are now encamped close to the detachment of Europeans. Lucknow is in a much better position. Some disturbance in the city, which was put down by the police.

Meerut.—The following account of the outbreak at Meerut is taken from the Lieutenant Governor's report of the 22nd May:—“On the afternoon of Sunday, the 10th May, the 20th Regiment Native Infantry, began the mutiny by seizing its arms simul-

taneously and rushing in a body as if to incite or attack the 11th Regiment Native Infantry. Lieutenant Colonel Finnis, of the latter Regiment was asked by his men to allow them to take their arms : he refused this request, and went forward to speak to the mutineers of the 20th Regiment Native Infantry. They immediately shot him down. The 11th Native Infantry then seized their arms, and united with the other corps. A Company of the 20th Native Infantry had been placed as guard over the jail after the troopers had been placed in it. A body of troopers of the 3rd Cavalry rushed to the jail to release their comrades : a party of the 6th Dragoon Guards were sent to oppose this movement, but appear to have lost their way in the confusion which had intermediately been produced ; for in the interval after the commencement of the disturbance, the Goojur inhabitants of the neighbourhood of the cantonments of Meerut rose *en masse*, plundering property, burning houses, and ferociously murdering every European they came across. In the universal disorder of the moment, amidst a general conflagration, the night came on, and the European force at Meerut was not able to act with any certainty or vigour against the retreating native Regiments. Around Meerut, the state of license in the villages, caused by the absence of all Government, spread for about twenty to twenty-five miles south and about the same limit, or somewhat more north ; within this belt, unchecked license reigned from the Jumna to the Ganges. The absence of any Light Cavalry, or effective means of scouring the country in this severely hot weather, paralyzed the attempts of the Meerut force to maintain any regularity or order beyond the immediate line of its pickets. The bungalows in the cantonments have nearly all been burned down, and all parties—officers, ladies, and children—were, and remain, collected within the enclosure of the Artillery School of Instruction, and in the several lines of barracks adjoining." General Hewitt gives the names of the killed at Meerut, and of those saved from Delhi.

Moradabad.—The troops appear staunch. A party of 200 Sappers and Miners have been forced to lay down their arms, and clothing, and plunder ; date not given.

Mynpoorie, 22nd June.—120 men of the 9th Native Infantry mutinied, but did not injure their officers. The Civil officers were devoting themselves to save as much of authority as could be rescued from the insurrection. By the tact and excellent behaviour of Ensign Dekantsow, the men were kept back from any overt act, and finally quitted the station to join the men of the corps at Allyghur *en route* to Delhi.

Muttra.—The Bhurtpore troops occupied the post, but were

subsequently moved on to the road between this place and Delhi. On the 30th two Companies of Native Infantry (the relieved and relieving) mutinied and plundered the treasury.

Neemuch.—Empty bungalows burnt. Magazine occupied by wing of the Gwalior Infantry. 28th.—All quiet among the troops; a panic in the bazar.

Nusseerabad.—Artillery and 30th Native Infantry considered staunch; doubts about 15th Native Infantry. Col. Lawrence had sent to Deesa for 250 European Infantry, 3 guns, and a squadron of Cavalry, and 200 Native Infantry. 26th.—All quiet; but state of affairs unsatisfactory. The Assistant in charge of Ajmere writes to the Political Agent at Jeypore, under date the 29th, that he has just heard that the 15th and 30th Native Infantry and Artillery with six guns, had left Nusseerabad for Delhi, dressed in Hindoostanee style.

Umballah.—The Artillery and 2nd Europeans detained on the 25th for want of carriage. The Commander-in-Chief in a Telegram from Umballah of the 19th May to the Governor General states: "All quiet here. Affairs do not go on well; the feeling of the native army may be a little improved, but none can be trusted. The two Regiments here profess that they will go where and do what they are ordered; they express regret for having committed themselves for a moment. They have since behaved well; but our European troops will not act with the same confidence if they are with them; we cannot leave them behind without sufficient number of Europeans to control them. The country is very much disturbed. The communication with Meerut difficult. I hope this will be remedied, having such a force at Kurnaul, we cannot move at present for want of tents and carriage; it would destroy Europeans to march without both, and we have no men to spare. I see the risk of going to Delhi with such small means as we have, perhaps 2,500 Europeans, for should they suffer any loss it would be serious, having nothing more to depend upon in the North West Provinces, but it must be done. I have not heard from below Delhi, or Lieutenant Governor, it would be important to have his views upon the subject, for troops should be brought from Persia, and those going to China should be stopped at Singapore. I hope we may hold on till the crisis is past. We must not omit any means of increasing our European strength. Since this message was begun I have heard from the Chief Commissioner of the Punjab. He recommends strongly that an order be issued giving up the new cartridge. I have adopted this advice."

On the 27th May His Excellency the Commander-in-Chief General Anson died of cholera at Umballah.

Umritsur.—It is stated that the 59th Native Infantry do not object to the new Cartridges. A Company of the 81st Foot occupy Govindghur.

Since the dispatch of the mail of the 18th May the following European troops have reached Calcutta: A portion of Her Majesty's 35th Foot, about 380 men from Rangoon, the 1st Madras European Fusiliers, and a wing of Her Majesty's 64th Foot. The 1st Madras Fusiliers have been pushed on towards Cawnpore, by horse-dak, bullock-train and steamers, a portion having already reached their destination. A Company of Her Majesty's 84th had previously been pushed on, and the remainder are following by horse-dak and bullock-train. The 35th have taken the place of the 84th, at Barrackpore, and the 64th will start this day by steam, leaving a few men to follow by the bullock-train. The "*Punjab*" is expected daily with the remainder of the 64th, which will likewise be pushed on as speedily as possible. The *Coromandel* has just arrived with a Company of the 84th from Rangoon, and a Company of Artillery, it is understood. Sir Henry Ward has offered to send 500 men of the 37th Foot from Ceylon. Two steamers left this, one on the 23rd and the other on the 24th ultimo for Galle, and will bring back the wing of the 37th. A steamer and sailing vessel have also been dispatched from Bombay to bring troops from Galle. The 78th Highlanders may also be expected in another week or ten days from Bombay. A circular was issued on the 29th explaining that none of the new cartridges had been issued to native Regiments. This became necessary from the gross misunderstanding which prevailed on the subject.

On the 24th May, the Ramghur Battalion volunteered to proceed against the mutineers. The Governor General in a General Order thanked the Battalion for this demonstration of their loyalty. On the 5th June a General Order was issued expressing the thanks of the Governor General for the zealous and loyal conduct of the Calcutta Militia in volunteering to proceed wherever their services may, at the present moment, be required.

The Governor General on the 19th June forwards to the Court of Directors in continuation of the narrative sent on the 6th June further intelligence and papers relative to the disaffection prevailing in the Native Army.

All communication by dak, as well as by Electric Telegraph, from and above Allahabad having been entirely cut off since the 6th June, very little information has been received of the events since that date.

Allahabad.—The 6th Native Infantry mutinied on the 6th at 9 P. M. They were joined by the three troops of Oude Irregular Cavalry, and the town's people. Thirteen European

officers are reported to have been murdered. The rest, with some Civilians, had taken refuge in the fort which was occupied by some invalid Artillery and the Regiment of Ferozepore Seikhs. A detachment of 1st Madras Fusiliers of between sixty and eighty men reached the fort the following day. Many of the Civil officers and European inhabitants are missing. About 350 Europeans of the 1st Madras Fusiliers, occupy the fort while the Seikh Regiment is at the Steamer's Ghaut protecting it; 400 more of the 1st Fusiliers must have reached by steam on the 16th or 18th. Town in possession of insurgents. 16th.—Col. Neill arrived all safe on the 11th, and Major Stephenson with 100 men on the 12th; party of 30 by steamer on 13th; 279 Fusiliers and 7 officers now here. All Seikhs outside; all guarded inside the fort by Europeans. Horses or bullocks with drivers much required for Artillery, to move out to attack enemy in cantonments. Bridge of boats retaken on 12th, and now held with picquets on opposite sides of river on Benares road. Enemy attacked daily. Heavy loss can best be inflicted with Artillery properly horsed or bullocked. Col. Neill could easily thrash the enemy. 500 Europeans, the least complement now, with half battery at least for this place, and all above 500 men, will be pushed on to Cawnpore. Allahabad now quite safe. The last report from Cawnpore was, it was in our hands. Nothing heard from Sir H. Wheeler: the road from Allahabad to Cawnpore quite closed.

Agra.—Appears to be all safe up to the 10th instant.

Allyghur.—The mutineers at Lucknow having crossed into the Doab and appeared at Allyghur, the detachment of Volunteers were forced to quit the place temporarily on the 8th.

Azimghurh.—The only officer killed is Lieutenant Hutchinson, Quarter Master of the 17th Regiment Native Infantry, who is said to have fallen in trying to save the post guns. The officers and ladies had arrived at Ghazee-pore.

Fort William and Barrackpore.—Major General Hearsey on the 8th and 9th June reports that the 43rd, 70th and 34th Regiments of Native Infantry, have voluntarily come forward and petitioned to be armed with the new Enfield Rifle. The Governor General expresses his great satisfaction at the request of the Regiments, proving as it does that the men consider there is nothing objectionable in either the rifles or the cartridges to their caste or religion; but desires to inform the Regiments that the supply of the new rifles received is so small that their request cannot at present be complied with. Major General Hearsey, having reason to believe that the native troops intended to rise on the night of the 13th sent for European troops in order to disarm the Regiments. This was quietly carried into effect on the

evening of the 14th, Sunday ; at the same time the whole of the native troops, except the body guard, in Fort William, Calcutta, and the neighbourhood, were quietly disarmed. At day break on Monday morning, the 15th, a detachment of European troops made a prisoner of the King of Oude, his Prime Minister, and others. These are now lodged as prisoners in the fort. A sepoy of the 43d Regiment having given information regarding a man, said to be a follower of the King of Oude, having tried to tamper with the sepoys in the fort, arrangements were made to secure the man, who had agreed with the sepoy to come again on the night of the 13th. The man came and was secured. He was tried by a Court-Martial on the 14th and sentenced to death. Unfortunately, during the night of the 14th, he effected his escape.

Benares.—On the news of the mutiny at Azimghur reaching Benares, a rising of the 37th Native Infantry was anticipated, and the authorities determined to disarm that corps. Accordingly the European troops and battery were paraded and marched on the lines of the 37th. The Regiment of Loodianah (Seikhs), with the Irregular Cavalry, and one squadron of the 13th were also under arms. On the Europeans approaching the 37th, that corps opened fire on them, which was returned by the European Infantry and Artillery. As the Regiment of Loodianah was advancing the Resaldar of the Irregular Cavalry rode up to the corps and called out that his men had mutinied. Some shots were fired by the Irregular Cavalry, on which the Seikhs paused, turned round, some firing towards the Cavalry, others towards the Europeans, on which the guns were turned on the Seikhs, who soon dispersed. The 37th in the mean time had been dispersed, and their lines were set on fire. The men of the 37th, the Seikhs, and Irregular Cavalry, passed through cantonments, and took the road to Jaunpore. Some of the Seikhs remained faithful, and protected the treasury, while others protected their officers. Some of the Irregular Cavalry also proved faithful, the party sent to Goruckpore and Azimghur for treasure having brought it in safety, and having since been usefully employed in clearing the road to Allahabad. The district and town appear pretty quiet, and matters appear satisfactory up to the latest date, the 18th.

Berhampore.—All quiet ; a detachment of Europeans from Barrackpore has been sent to insure the safety of the station. The 63rd N. I. at Berhampore having volunteered to be employed against the rebels, was thanked by the Governor General for their loyalty.

Cawnpore.—Nothing heard from this place since the 1th instant.

Chunar.—All safe.

Delhi.—A second action was fought on the 31st, near the Hindon. Brigadier Wilson's force, reinforced by Sirmoor Battalion, and some reinforcements from Meerut, was to join the Umballa Column on the 5th *via* Bhagpoot Ghaut. The force reached Delhi on the 8th, and drove the rebels dispirited into the town, capturing the heights in front of Delhi and twenty-six guns.

Dinapore.—All quiet up to the 15th. Major General Lloyd reported that the 7th Regt. N. I. volunteered to go against the mutineers. The thanks of the Governor General were conveyed to the Regiment for their loyalty and offer of services. On the 3rd June General Lloyd forwarded the following Circular Memorandum which he issued for the guidance of officers Commanding Stations and Posts in the Dinapore Division : "With reference to the present disturbed state of public affairs, officers commanding at stations and posts within the division, are hereby authorized, should emergency arise, to act at once, for the good of the service, upon their own judgment and responsibility, duly reporting the measures they may adopt for the information of the Major General Commanding, and of the Brigadier at Benares, as regards commands in the neighbouring districts." The Governor General approved of the Circular.

Dacca.—On the 12th June, a detachment consisting of 100 European seamen from the war steamers *Punjaub* and *Zenobia* with two armed boats and two field pieces were sent to Dacca as a precautionary measure.

Gya.—A detachment of 120 Europeans sent to protect the treasury.

Hansi and Hissar.—The Hurrianah Light Battalion is said to have mutinied.

Jaunpore.—The detachment of the Seikhs, on the mutineers from Benares arriving, murdered their officer, Lieutenant Mara, and other Europeans, seized the treasure, and proceeded into Oude, *via* Fyzabad, Jemadar of the Seikhs having been elected Commandant.

Lucknow.—Nothing heard since the 4th instant.

Meerut.—Major General Hewitt reported as the latest news from Delhi was that the mutineers were divided into two parties, Mussukman and Hindoo, who had come into collision, and blood had been spilled. The four Companies of the 9th Native Infantry with the treasure from Bolundshuhur and Allyghur are said to have joined the mutineers. The Sirmoor Battalion have behaved well under Major Reid, in making their way to Bolundshuhur against great difficulties from the destruction of the Canal works, they were too late to save the treasure; but the re-

tribution inflicted on the village, where the pillaged Government property was found, had contributed to the tranquillization of the district. General Hewitt forwarded a letter to his address from the Commander-in-Chief of the 23d May containing instructions with respect to the movements of the force from Meerut required to join the column advancing from Umballah towards Delhi. The two forces to form a junction at Bhagpoot on the 5th June.

Mynpooree.—On the 29th May, the Lieutenant Governor forwards an extract from a report from the Magistrate of Mynpoore containing an account of the occurrences attending the mutiny of the three Companies of the 9th Regiment Native Infantry at that station on the night of the 22d May; and brings to the notice of the Governor General the marked gallantry and devotion to duty of Lieutenant DeKantzow of that Regiment on that occasion. The Governor General expresses his admiration of Lieutenant DeKantzow's conduct and thanks him.

Mirzapore.—All quiet. Treasure removed. The Rewah Rajah has offered 600 Cavalry, 500 Infantry, and five guns. These have been accepted.

Nowgong.—The wing of the 12th Native Infantry and native Battery have mutined. Particulars not known.

Neemuch.—The troops at the station reported to have mutinied, as well as the Cavalry of the Malwa Contingent. The Infantry of the Contingent at Mehidpore said to be true.

Umballah.—On the 17th May the Commander-in Chief reports that he arrived at Umballa on the 15th and ordered the following movements: The 2d European Fusiliers from Soobathoo to Umballa, and the Nusseeree Battalion to Phillour, to escort a third class siege train and ammunition to Umballah. Six Companies and Head Quarters of the corps of Sappers from Roorkee to Meerut, and the 4th Irregular Cavalry at Hansi to be in readiness to proceed wherever required. To restore the confidence of troops not mutinied, a General Order, intimating that sepoys would not be required to use objectionable cartridges was issued; and Commanding Officers were ordered to suspend all target practice and firing with blank ammunition. The European Regiments at Umballa are weak in point of numbers. Not more than 1800 effective men in the three corps of Infantry. Accounts recently received are more favorable than those of an older date. The troops concentrated at Umballa, though unable to move for want of carriage, are exercising a powerful influence. A detachment to leave this evening to Kurnaul to maintain order and reassure the inhabitants. The Putteealla Rajah has rendered considerable assistance and so has the Jheend Rajah. In another letter,

the Commander-in-Chief states that circumstances also have taken place at Umballa which render it impossible to rely on the perfect fidelity of the 5th and 60th Regiments of Native Infantry and arrangements were accordingly made to meet the existing state of affairs. Sir John Lawrence in submitting a report sent to him by the Commissioner, Cis-Sutlej States, relative to the recent fires in the cantonments of Umballah, observes that these combinations, arsons and emeutes are all caused by the disaffection which has arisen from the introduction of the new cartridge, and that nothing but the giving up the use of the new cartridges will put a stop to the present state of affairs. If this be not done and made generally known, the disaffection which was pervades the whole of the native Regular Army will extend to the Irregulars. The list of fires which accompanied the reports shews that they have been directed chiefly against property either belonging to officers and men attached to the depot, or assigned to them for shelter during the hot months. The Government also have been considerable sufferers and these two facts are sufficient to shew that the musketry depot is obnoxious to the incendiaries, as well as the Government which authorized its establishment.

Calcutta.—The European troops arriving in Calcutta are being pushed up as quickly as possible. The whole of the Madras Fusiliers must now be at Allahabad, and the 84th have passed beyond Benares, as also a portion of the 64th, the last of the 78th Highlanders leave by bullock train to-morrow, the 20th, when the wing of the 37th will be despatched. One European battery left by steam this morning, and another is preparing to follow. The detachment of the Royal Artillery will also be sent up by bullock train. On the 4th June an Act No. XI. of 1857 was passed by the Governor General of India in Council providing that All persons owing allegiance to the British Government, who, after the passing of this Act, shall rebel, or wage war against the Queen, or Government of the East India Company, or shall attempt to wage such war, or shall instigate or abet any such rebellion or the waging of such war, or shall conspire so to rebel or wage war, shall be liable, upon conviction to the punishment of death, or to the punishment of transportation for life, or of imprisonment with hard labour for any term not exceeding fourteen years; and shall also forfeit their property and effects of every description : Provided that nothing contained in this Section shall extend to any place subject to Regulation XIV. of 1827 of the Bengal Code.

All persons who shall knowingly harbour or conceal any person who shall have been guilty of any of the offences mentioned

in the preceding Section, shall be liable to imprisonment, with or without hard labour, for any term not exceeding seven years, and shall also be liable to fine.

The Act moreover enables the local Governments to issue Commissions for the trial of such persons, or to disarm any class of the population.

On the 6th June an Act No. XIV. of 1857 for making further provision for the trial and punishment of persons who endeavour to excite mutiny and sedition among the forces of the East India Company, and also for the trial of offences against the State, was passed and published, together with the following General Order : " In pursuance of Act No. XIV. of 1857 passed this day, the Governor General in Council is pleased to authorize every General Officer Commanding a Division, every Brigadier, and every officer commanding a station, being the senior officer on the spot, to appoint General Courts Martial under the provisions of the said Act, as occasion may require for the trial of any person or persons who may be charged with any offence against the aforesaid Act, or against Act No. XI. of 1857, if such offence require in his judgment, to be punished without delay, and to confirm and carry into effect, immediately or otherwise, any sentence of such Court Martial.

General Courts Martial assembled under this authority may consist wholly of European Commissioned officers, or wholly of Native Commissioned officers, the number of officers not being less than five. The officer appointing the Court Martial shall determine whether it shall be composed wholly of European officers, or wholly of native officers, or partly of European and partly of native officers."

On the 1st June, the Governor General in Council reports to the Court of Directors that in consequence of the unhappy events which have occurred in the North Western Provinces, he thought it proper to publish the following Proclamation : The Governor General in Council has warned the army of Bengal, that the tales by which the men of certain Regiments have been led to suspect that offence to their religion, or injury to their caste, is meditated by the Government of India, are malicious falsehoods. The Governor General in Council has learnt that this suspicion continues to be propagated by designing and evil-minded men, not only in the army, but amongst other classes of the people. He knows that endeavours are made to persuade Hindoos and Mussulmans, soldiers and civil subjects, that their religion is threatened secretly, as well as openly, by the acts of the Government, and that the Government is seeking in various ways to entrap them into a loss of caste for purposes of its own.

Some have been already deceived and led astray by these

tales. Once more, then, the Governor General in Council warns all classes against the deceptions that are practised on them. The Government of India has invariably treated the religious feelings of all its subjects with careful respect. The Governor General in Council has declared that it will never cease to do so. He now repeats that declaration, and he emphatically proclaims that the Government of India entertains no desire to interfere with their religion or caste, and that nothing has been or will be done by the Government to affect the free exercise of the observances of religion or caste by every class of the people. The Government of India has never deceived its subjects. Therefore the Governor General in Council now calls upon them to refuse their belief to seditious lies. This notice is addressed to those who hitherto by habitual loyalty and orderly conduct have shown their attachment to the Government, and a well founded faith in its protection and justice. The Governor General in Council enjoins all such persons to pause before they listen to false guides and traitors, who would lead them to danger and disgrace.

A few days after the publication of the Proclamation, separate addresses by different classes of the community were presented to the Governor General, expressing their sorrow and concern at the mutinous conduct of a portion of the Native Army, and the disastrous consequences which have resulted therefrom, and offering to afford Government all the assistance in their power in the preservation of order and in the protection of the inhabitants of Calcutta. The Governor General in thanking the members of the Calcutta Trade Association for their offer of aid, observed that their services would be very valuable as special Constables, and suggested that those who were willing so to act to register their names at the office of the Commissioner of Police who had been authorized to enrol them. The Association was however, assured by His Lordship that there was no apprehension whatever of any riot, insurrection or disturbance amongst any class of the population of Calcutta, and that if any should occur the means of crushing it utterly and at once were at hand. The Governor General also stated that disaffection had not been evinced by all the sepoy Regiments in India as assumed by the Association, there being many soldiers and many Regiments in the Bengal Army who have fairly withstood the evil example and wicked Counsels which have destroyed the fidelity of the few Regiments that have mutinied.

To the French Consul, and other French Residents at Calcutta, the Governor General in returning his sincere acknowledgments hoped there would be no occasion to call for their services. Every thing was quiet within 600 miles of Calcutta. The

mischief caused by a passing and groundless panic, had already been arrested; and in the course of a few days' tranquillity, and confidence would be restored throughout the Presidency.

To the Native Community, Hindoo and Mussalman, the Governor General expressed his gratification at the loyalty, and good sense displayed by them at the present juncture in declaring their abhorrence, and the unqualified and just condemnation of the mutinous conduct of some of the Native Regiments, and remarked that the steadfast policy of the British Government in India has been and ever will be to observe a strict neutrality in matters of faith, to respect all scruples of caste, and to leave its subjects, of every creed, and class, to the free and uninterrupted enjoyment of their religious opinions and observances. The Native Community was also informed that decisive steps were taken for the suppression of the revolt, the punishment of those concerned in it, and the restoration of peace and order in the disturbed districts.

The European and other Christian inhabitants of Calcutta having offered to serve as Volunteers for the protection of the city, the Governor General in a Notification issued on the 12th June, invited all persons willing to serve in the corps of Volunteer Guards of Calcutta, either as horsemen or on foot, as members of that force, to enrol their names at the office of the Town Major in Fort William.

On 4th July* the Governor General in Council continues the narrative.

Agra.—All right up to 15th June.

Allahabad.—Lieutenant Colonel Neill arrived on 11th June. He immediately attacked the enemy, but was hampered by drunkenness, wine and spirits being sold to the Europeans at four annas a bottle. This was plundered from various public and private stores. The liquor was destroyed by order of Colonel Neill, the Sikhs turned out of the fort, and on the evening of the 14th he cleared Kydgunge. The Sikhs followed very rapidly, and the enemy evacuated the city that night. Some villages were destroyed and a system of Patrols organized to encourage the country people to bring up supplies. The women and children were all sent away in the steamers which took up the Fusiliers. Colonel Neill reports the cholera in the fort. Brigadier General Have-lock arrived on the 30th June, and a detachment consisting of 400 1st Fusiliers, 300 Sikhs, 28-pounders manned by Artillery Invalids, and 120 Cavalry started on that day for Cawnpore.

Attock.—No intelligence.

* There is some mistake about the date. The narrative is marked 19th June but it refers to the former narrative of that date, and brings events up to 4th July.

Azimghur.—Has continued occupied by Mr. Venables, Indigo Planter with 100 men of 6th N. I. and 50 of the 12th Irregular Cavalry.

Banda.—The Europeans were forced to quit the station on 14th June, two Companies 1st N. I. having taken possession of the treasury. All arrived at Nagode.

Barrackpore.—All quiet. The senior officer present with the 70th N. I. begged that that Regiment might not be disarmed, as the threat said to have been used "let us get beyond Pultah, and then see what we will do" must have been uttered by a bad character. The General of Division however remarks that the men ought to give the bad character up. The Governor General in Council agrees, and refers to information that respectable men in the corps had warned the officers not to take their wives. Desertions to the number of 151 had taken place from the 43rd N. I. of these 56 returned and were allowed to join their guards, and 1 Naick and 12 sepoys were brought back by the Civil power. The Naick was hung.

Bareilly.—On 23rd May Brigadier Sibbald reports that the men at Bareilly are quiet, but labouring under a great fear of punishment. On 30th May the Lieutenant Governor authorises the Brigadier to assure the troops in Bareilly that nothing has occurred to shake his confidence in their loyalty. On 31st May the troops mutinied. They consisted of a Horse Field Battery, No. 15, the 18th and 68th N. I. and 8th L. C. The officers Brigadier Sibbald excepted were allowed to escape to Nynsee Tal which was protected by the Goorkhas.

Benares.—All quiet. Station occupied by 200 Europeans, European Light Field Battery, 800 Sikhs and a few of the 13th L. C.

Berhampore.—A sowar of the 11th released some deserters from 43rd N. I. and tried to excite the troops to mutiny. He was sentenced to transportation for life.

Bhaugulpore.—In the district at Rohnee four men attacked Sir Norman Leslie, Major Macdonald and Assistant Surgeon Grant. The men were three of them sowars of the 5th L. C. The attack was made on the 12th. On the 15th the men were tried by drumhead Court Martial and hung.

Cawnpore.—It is understood that 2nd L. C. and 1st N. I. mutinied on 4th June, and were joined by Nana Dhoondie Punt of Bithoor. The first detailed intelligence was received from Nerput, Opium Gomashita of Cawnpore. He said the Nana had murdered all the Europeans he could find in the city, and also 126 men, women and children, who came in a boat. The English camp kept up its fire, but the troops inside were badly off for provisions. This occurred on 12th June.

On 28th June Sir H. Lawrence writes that the force had been destroyed by treachery. The Nana swore to protect them, then murdered all in their boats. Story is considered improbable.

Delhi.—The Umballa column was reinforced on June 6th by troops under Brigadier Wilson. The mutineers were defeated on the 8th with the loss of 26 guns. On the 14th June it was reported the troops had taken the palace with a slaughter of 7,000 men.

Ghazee-pore.—65th N. I. appear to be behaving well. There was a detachment of H. M.'s 64th at the station.

Gwalior.—The Contingent mutinied on the 16th. Seindia escorted some of the officers to Agra.

Goruckpore.—The Oude Government have lent 3,000 Goorkhas who were to leave on the 29th.

Hansi and Hissar.—The Hurrianah Light Infantry mutinied, but officers escaped to Thanesur and Sirsa.

Hyderabad.—1st Hyderabad Cavalry refused to fight against men of their own creed. The Hindoos separated themselves from the Mussalmans. The men seeing force arrayed against them calmed down. General Woodburn with a moveable column was however ordered by the Resident to proceed to Aurungabad. He arrived on 24th June. The 1st Cavalry were ordered on foot parade. The good men remained. The bad fled, and commenced saddling their horses, on which they were fired on and dispersed.

Jhansi.—Troops had mutinied, and fears were entertained for the Europeans.

Jullundur.—Native Infantry mutinied on 8th June, and were joined by 5th Native Infantry at Phillour. Pursued by a force from Jullundur and troops of the Aloowalla Chief.

Lucknow.—The mutineers were gradually closing in. The Residency, Muchee Bawun, and cantonments had been strengthened. All well up to 30th June.

Mynpoorie.—Held by a detachment of 1st Gwalior Cavalry under Major Raikes.

Nagpore.—The Irregular Cavalry of the Nagpore force were disarmed on 23rd June. The Seetabuldee Hill had been fortified, and the European Artillery from Kamptee moved there. Some native officers of the Irregular Cavalry were hung on the 30th June. The 1st Irregular Infantry took part in the proceedings.

Neemuch.—The troops mutinied on 3rd June, and proceeded to Delhi. The officers, who escaped, returned, and on 20th all was quiet.

Oude.—The troops at Seetapore mutinied on 4th June, those at Fyzabad and Secrora on the 8th, those at Sultanpore and

Persadipore on the 10th. The troops at Baraitch and Gonda went also, but when is not known. Officers not killed escaped to Allahabad. The fate of those at Seetapore not known.

Peshawur.—40 men of 55th Native Infantry blown from the guns for mutiny.

Rewah.—The Maharajah placed his forces at our disposal. Lieutenant Osborne sent 400 Infantry, 400 Cavalry and 5 guns to Unamapatam, whence they could command the Saugor, Dumoh, and Jubbulpore stations, and another force to the Kutra Pass.

Saugor.—All quiet on 1st July, and force of 600 men from 31st and 42nd and 5th Irregular Cavalry marched against Boondelas and routed them.

On 21st July the Governor General in Council continues the narrative.

Agra.—The Neemuch mutineers approached and the Europeans were compelled to enter the fort. The force comprised 650 European Infantry and Artillery, 200 or 300 Volunteers, the Kotah Contingent and some Kerowlee Horse. The Kotah Contingent however mutinied one mile out of town and fired on its officers. The Kerowlee Horse also left, but the Europeans marched on and defeated the enemy but were obliged to retreat for want of ammunition. Agra was virtually in a state of siege on 7th July, and Mr. Colvin incapacitated for business by a complaint of the head.

Allahabad.—Col. Neill has been appointed a Brigadier General. General Havelock's column left Allahabad on 7th July, and on 12th July defeated the insurgents before Futtehpore, taking eleven guns. Not a European was touched. The enemy's strength was 2 regiments of Cavalry, three of Infantry, and eleven guns. The result says the Brigadier General is to be attributed to "the fire of British Artillery, exceeding in rapidity and precision all that the Brigadier General has witnessed in his not short career, or to the power of the Enfield rifle in British hands, and to British pluck, that quality which has survived the revolution of the hour, and gained no intensity from the crisis, and to the blessing of Almighty God, and to the most righteous cause of humanity, truth and good Government in India." On 14th, General Havelock was compelled to disarm 13th and 3rd Irregular Cavalry, but on 15th again beat the enemy at Pandoo Nuddy, taking four guns. Brigadier General Neill left Allahabad for Cawnpore by dak on 16th July.

Banda.—The remaining officers of the 12th N. I. were safe with the Nawab of Banda on 29th June.

Barrackpore.—A detachment of seamen have been placed in Fort William to serve as Artillerymen.

Bareilly.—Col. Troup reports on 10th June that on 29th June the Commissioner wrote to him mentioning the intention of the 68th N. I. to mutiny on that day. This was confirmed by a Havildar Major of the Regiment. He armed all the officers, and the 8th Cavalry turned out apparently in heart and spirits. The day passed quietly, but on 31st June the men rose, the 68th firing on the officers in their bungalows. The officers were saved by some of the 8th I. C. who rode off with the surviving officers and ladies to Nynce Tal. The native officers were promoted. Seven gentlemen of the station were known to have been murdered.

Cawnpore.—Brigadier General Havelock retook Cawnpore on 16th July. The Nana had murdered all the women and children, and retreated to Bithoor, blowing up the magazine. The British loss was about 70, but the action which lasted 140 minutes was a complete victory.

Delhi.—Sir H. Barnard, K. C. B. was attacked on 30th May on the bank of the Hindun. The mutineers were driven back with a loss of five guns, some carriages and ammunition. The besiegers lost eleven killed, nineteen wounded and two missing. On 31st May the enemy again attacked, but were driven back with loss. The besiegers lost 12 killed and 12 wounded. Major General T. Reed, C. B. joined the force on 8th June. The total force in camp was "4 guns, 2nd Troop, 1st Brigade; 2nd and 3rd Troops, 3rd Brigade Horse Artillery; 3rd Company, 3rd Battalion, Artillery, and No. 14 Horse Field Battery; 4th Company, 6th Battalion, Artillery; Detachment Artillery Recruits; Head-quarter's Detachment Sappers and Miners; Her Majesty's 9th Lancers; two Squadrons Her Majesty's 6th Dragoon Guards; Head-quarters and six Companies 60th Royal Rifles; Head-quarters and nine Companies of Her Majesty's 75th Regiment; 1st Bengal Fusiliers; Head-quarters and six Companies 2nd Fusiliers; Sirmoor Battalion." On June 8th, Sir H. Barnard carried an entrenched position at Badulee-ke-Serai, and drove the enemy despite a most determined resistance within the walls of Delhi. He captured twenty-six guns. The natives vied with the Europeans in zeal. Only one officer was killed, Colonel Chester, Adjutant General of the Army.

Indore.—Holkar's troops rose on 1st July, and attacked the Residency. The Europeans escaped to Sehore.

Jhansi.—It is feared that all the Europeans have been murdered.

Jubbulpore.—The Commissioner's house fortified, but safe up to 10th July.

Jullundur.—"The 36th and 61st Regiments mutinied on

the 4th June, and with a few men of the 6th Light Cavalry, proceeded to Phillour, where they were joined by the 3rd Native Infantry. These corps crossed the Sutlej a little above Loodianah, and eventually entered that town, from which they were driven by a party from Jullundur—part of Her Majesty's 8th Foot, and some European and Native Artillery, and some of the 6th Light Cavalry."

Lucknow.—On 30th June, Sir H. Lawrence went out with 200 of the H. M.'s 32nd, 40 Sowars, and 11 guns to attack insurgents. The Sowars and Artillery revolted, and the Chief Commissioner was compelled to retreat. Sir H. Lawrence died on the 4th July from wounds. Provisions were in store for six weeks.

Mhow.—The troops, right wing 1st L. C. and 23rd N. I. mutinied on 1st July, burnt cantonments, and murdered several officers. The remainder are in the Arsenal with European Artillery. Holkar's troops are said to have moved on Delhi. Holkar himself staunch.

Nagpore.—Three Ressaldars executed with the best effect. Great quantities of arms have been delivered up. The city remained quiet.

Saugor.—The 42nd N. I. mutinied on 3rd July, and part of 3rd Irregular Cavalry. The European Artillery and officers had previously provisioned the fort. The 31st and some of the 3rd Irregulars without their officers marched out and defeated the mutineers. The Government ordered a report on the circumstances which induced the officers of a Regiment thus proved to be faithful to quit it.

MADRAS BUDGET OF 1856-57.

Madras Records, No. XXXVIII.

ON the 19th March, 1856, Mr. J. D. Bourdillon, Secretary to the Government of Fort St. George, Public Works Department, submitted Statements Nos. 1 and 2 of projects of Public Works proposed to be undertaken or continued in 1856-57.

The works in No. 1 are beyond the competence of the Madras Government to sanction. This number contains fifty-eight new projects involving an estimated aggregate outlay of Rs. 60,13,682, of which the sum of Rupees 26,93,577 is proposed to be expended in 1856-57. Out of the fifty-eight projects requiring the sanction of the Government of India, eight were included in the Budget of 1855-56. The remaining fifty are separately re-

ported on in the Budget under review, and are treated under the following classification :—

IRRIGATION WORKS.

- No. 45. Annicut over the Tambrapoorny River.
- „ 17. Continuation of the Southern High Level Channel from the Kistnah Annicut.
- „ 18. Kistnah Annicut Channel from Vallahbapoorum, to tide water on the Southern Bank.
- „ 32. Poiney Annicut Channel.
- „ 47. Calingaroyen Channel in Coimbatore.
- „ 1. Embanking the Mahanuddee in the Ganjam District.

NAVIGATION WORKS.

- „ 55. Extension of East Coast Canal from the Palaur to the Pondicherry Frontier.
- „ 54. Improving the Coast Canal between Madras and Ammuncovil.
- „ 14. Building two locks and Calingulabs in the Ankeed Canal and embanking the Weyairoo.
- „ 10. Increasing the width of the Palcole Canal with locks at Nursapore and Maurootair.
- „ 50. Cutting a Canal from the Tuddry River to Coomptah.

TRUNK ROADS.

- „ 29. Additional Metalling to part of Trunk Road, No. 1.
- „ 28. Raised causeway and bridges over the Punninggardee Backwater.
- „ 20. Masonry works between Covoor and Moodegunder River.
- „ 5. ——— works between Soobaram and Chittavalsah.
- „ 4. Formation of the Road between Chittavalsah and Chicacole.
- „ 3. Completing the road between Chicacole and Santhoshapoorum.
- „ 2. Construction between Santhoshapoorum and Dendagudda.
- „ 21. Masonry works in completion of Trunk Road, No. 7.
- „ 35. Bridge over the Pennaur on Trunk Road, No. 8.
- „ 36. ———over the Vellaur on Trunk Road, No. 8.
- „ 39. Additional Metalling between Oolundoorpett and Samiaveram.
- „ 37. Bridge over the Pennaur on Trunk Road, No. 2.
- „ 38. ———over the Guddilam on Trunk Road, No. 9.
- „ 23. Masonry works on Trunk Road, No. 11.

DISTRICT ROADS.

- No. 6. Road from Vizagapatam to Polapurty.
- „ 15. — — between Masulipatam and Ibrahimpatam.
- „ 19. Bridge over the Boogairoo.
- „ 26. First Class Road between Ghooty and Rayelcherroo.
- „ 24. Completing Road from Cuddapah to Tolapodatoor.
- „ 25. Bridging the Bellary and Humpsagur Road.
- „ 30. Bridge over the Coom at Dacumbode.
- „ 31. Road from Chingleput to Taiteray.
- „ 33. ——— from Trivatoor to the Palaur Annicut.
- „ 34. Bridge across the Palaur at the Annicut.
- „ 40. ——— over the Vellaar on the Southern Coast Road.
- „ 41. Road from Trichinopoly to Salem boundary.
- „ 42. ——— from Trichinopoly via Laulgoody and Woodiar-polliem to join Trunk Road, No. 9.
- „ 43. Bridge over the Vigay River.
- „ 44. Pulkanooth and Nellocotah Road.
- „ 46. Road from Palamcottah to Tuticorin.
- „ 48. Bridge over the Ambravaty.
- „ 49. Bridging the Guersappah Ghat Road.

BUILDINGS.

- „ 11. Buildings for the Sappers and Miners at Dowlaiswarum.
- „ 27. New Hospital for the European Barracks at Bellary.
- „ 57. Altering and improving the Dragoon Barracks at Bangalore for the accommodation of a European Infantry Regiment.
- „ 56. Building two Blocks of married men's quarters in the above Barracks.
- „ 51. Improvements to the Custom House.
- „ 52. Civil Audit Office.
- „ 58. Secunderabad Barracks.

This project has already been sanctioned by the Government of India.

The Statement No. 2 exhibits the works sanctioned by the Government of India, the estimates of which amount to Rs. 88,76,807. Up to the end of the current official year Rupees 36,58,522 will have been expended. The amount required for the ensuing year is Rupees 37,07,214.

Putting the two Statements together, the total estimated cost “of works other than repairs, proposed to be under execution wholly or in part during the ensuing year under this Presidency, amounts to Rupees 1,48,90,489, of which sum Rupees 36,58,522 have already been expended and Rupees 64,00,791, it

is proposed to lay out in that year, leaving Rupees 48,31,176 for future years."

The amount proposed to be expended on repairs as exhibited in a third statement added under Nos. 1 and 2, is Rs. 18,54,470.

The following is an abstract of the expenditure sanctioned by Government for works described in the Statements submitted by Mr. Bourdillon :—

Districts.	Total Estimate sanctioned.	Amount already authorized to be expended.	Amount already expended.	Amount to be authorized for the year 1855-56.	Remaining amount available for completion.
1. Ganjam, ...	2,24,330	1,67,822	1,23,003	94,477	6,850
2. Vizagapatam, ...	1,01,492	78,309	54,500	46,992	0
3. Rajahmundry, ...	9,69,990	7,66,371	5,26,000	3,01,380	1,42,610
4. Masulipatam, ...	7,54,216	5,36,105	2,95,652	3,41,489	1,17,075
5. Guntoor, ...	3,80,948	2,84,937	1,56,932	2,06,255	17,761
6. Nellore, ...	3,09,193	1,70,713	75,175	2,29,018	5,000
7. Cuddapah, ...	1,54,901	1,29,549	75,460	79,441	0
8. Bellary, ...	3,94,421	2,68,649	1,69,130	1,80,911	44,380
9. Chingleput, ...	3,76,865	1,50,000	28,260	1,33,592	2,15,013
10. North Arcot, ...	9,00,828	5,69,889	3,58,889	3,33,639	2,08,300
11. South " ...	3,89,310	2,07,835	1,26,559	2,05,076	57,675
12. Tanjore, ...	4,54,943	3,18,844	2,20,564	2,31,379	3,000
13. Trichinopoly, ...	1,23,991	1,12,987	63,152	60,839	0
14. Madura, ...	1,29,708	47,117	19,003	54,665	56,040
15. Tinnevely, ...	89,539	87,915	23,957	45,458	20,124
16. Coimbatore, ...	15,25,749	4,37,343	4,16,200	5,02,306	6,07,243
17. Salem, ...	98,308	15,989	6,249	92,059	0
18. Canara, ...	1,99,769	1,86,239	1,17,588	82,181	0
19. Malabar, ...	2,72,429	1,46,039	80,423	1,92,006	0
20. Madras, ...	1,07,450	94,570	70,406	37,044	0
21. Secundrabad, ...	4,88,813	4,77,923	4,70,000	18,313	0
22. Saugor, ...	3,782	0	0	3,782	0
23. Jaulnah, ...	9,245	6,163	3,512	5,733	0
24. Kurnool, ...	1,75,560	1,42,707	77,908	87,652	10,000
25. East Coast Canal, ...	2,26,593	1,00,000	1,00,000	1,26,593	0
26. Mysore, ...	14,904	0	9	14,904	0
	88,76,807	54,53,415	36,58,522	37,07,214	15,11,071

On the 11th July, Colonel Baker, Secretary to the Government of India, Department of Public Works eulogizes the Madras Budget of 1856-57 for the admirable manner in which it has been prepared. He proceeds to convey orders upon the several projects enumerated in Mr. Bourdillon's letter of the

19th March; and expresses opinions and remarks on the following works in Statement No. 1, Projects Nos. 17 and 2; in the one, "no designs have been submitted for the aqueducts across the several streams, nor have the streams themselves been marked in the sketch Map" and in the other, "an approximate estimate of the cost of the larger Bridges has not been given. Expresses doubts as to the sufficiency of the foundations of the Pennaur Bridge, No. 35, and of the masonry works, No. 23, proposed in Trunk Road, No. 11 in the probable event of sand being found in the river bed to a greater depth than that of the substructure." The Project No. 18, Kistnah Annicut Channel, he considers "not complete inasmuch as the Bridges and minor Channels of distribution remain unprovided for. The selection of a site for the Channel, in such near proximity to the river, has probably been guided by the circumstance that the river's margin is higher than the adjoining land; but if this river be given like most other rivers in alluvial soil, occasionally to erode its banks, its neighbourhood to the canal may prove to be a source of frequent apprehension and danger." Calls for information as to the supply of water in the Kistnah at different seasons to feed the existing Channels and those projected, as well as that relating to the cost of the Bridges noticed above. The additional information furnished with Project No. 1 is defective. "The sections run merely along the bank of the river and do not show the relative levels of these banks and of the adjacent country. No information is given of the site of the embankments, what area of floodway they enclose between them? What volume of water is discharged by the river in highest floods; or to what extent the embankments would limit the present spread of water?" Sanction to further outlay on this project is withheld until satisfactory and complete report on the points above indicated shall have been submitted. Further and more detailed information is also called for respecting the Project No 55. 1st. The Canal being affected by the tides it is not clear how its level can be steadily maintained unless there be a lock at each point where it enters and emerges from these Tidal Lagoons. The number and position of such locks should be distinctly shown. 2nd. There is no specification of the works, and the estimate is a general one. The Project No. 14 being a work of considerable importance, a Statement of the nature and extent of the expected traffic and of the probable returns is required, and with regard to Project No. 50, Colonel Baker observes "that neither the length of the Canal is stated, nor is there a scale to the map." Directs attention to his remarks on the propriety of levying tolls on all Canals of Navigation. Projects Nos. 29, 26, and 24 to remain in

abeyance. Expresses doubt as to the efficiency of "Sand and Potter's earth" for road metalling proposed in Projects Nos. 6, 15, and 19, as the roads being important, will be subjected to heavy traffic. On Project No. 43, remarks as to the deficiency of the depth of the wells of the Bridge on the Vigay River, and considers it doubtful whether the Verandah on the Sea front of the Custom House could be used as an Export ware-house as proposed in Project No. 37.

On the 12th August the Government of Madras recapitulates the works sanctioned, and directs the attention of the Chief Engineer to the several points commented upon by Colonel Baker. The works that have been sanctioned are as follow :—

IRRIGATION WORKS.

	Rupees.
No. 18. Kistnah Annicut Channel from Vullabapoorum to tide water,	1,39,700
„ 47. Calingaroyen Channel in Coimbatore,	64,898
„ 54. Canal between Madras and Ammuncovil,	72,800
„ 10. Increasing the width of the Palcole Canal, and building a lock,	57,280
„ 50. Canal from the Tuddy River to Coompta,	86,021

TRUNK ROADS.

„ 28. Works at Puningardee back water on the Northern Trunk Road,	33,028
„ 20. Masonry works between Covoar and Moodigunda,	84,580
„ 21. Ditto, in completion of No. 7 Trunk Road,	89,434
„ 36. Bridge over the Vellaur on Trunk Road, No. 8,	37,263
„ 39. Metalling between Oolundoorpett and Samiaveram,	37,313
„ 37. Bridge on Trunk Road, No. 9 over the Pennar,	46,901
„ 39. Ditto ditto, Guddilum,	25,869

DISTRICT ROADS.

„ 6. Road from Vizagapatam to Polaparty,	45,750
„ 15. Ditto Masulipatam to Ibrahimpatam,	43,250
„ 19. Bridge over the Boogairoo,	38,558
„ 25. Bridging the Bellary and Humpsagur Road,	59,250
„ 30. Bridge over the Coom at Dacumbode,	26,860
„ 31. Road from Chingleput to Taitoray,	41,180

Carried forward, 9,79,880

	Brought forward, ..	9,79,880
No. 33.	Road from Trivatoor to the Palaur Annicut,	38,600
„ 34.	Bridge across the Palaur at the Annicut,	94,400
„ 40.	— over the Vellaur, on the Southern Coast Road,	35,020
„ 41.	Road from Trichinopoly to Salem boundary,	50,000
„ 42.	Ditto Ditto, via Lalgooty to join Trunk Road, No. 9,	43,600
„ 43.	Bridge over the Vigay River,	42,200
„ 44.	Pulkanooth and Nellacottah Road, ...	25,560
„ 46.	Road from Palamcotta to Tuticorin, ...	67,361
„ 48.	Bridge over the Ambravutty,	63,830
„ 49.	Bridging Guersapah Ghaut Road, ...	25,994

BUILDINGS.

„ 11.	Buildings for the Sappers and Miners at Dowlaishweram,	47,028
„ 27.	Hospital for European Troops at Bellary, ...	82,330
„ 67.	Dragoon Barracks at Bangalore,	1,55,600
„ 51.	Additions and alterations to the Custom House at Madras, and improving the external accommodation,	70,040
„ 52.	Rebuilding the Civil Audit office,	37,350

Total Rupees, ... 18,58,793

REPORT ON VACCINATION, MADRAS PRESIDENCY.

Madras Records, No. XLII.

ON the 9th June, 1857, Dr. A. Lorimer, Secretary Medical Board, submits returns of Vaccination throughout the Madras Presidency for 1856. The number of operations performed in 1856 amount to 4,02,440, while in the preceding year 4,39,651 Vaccinations were recorded, showing a decrease of 37,211. This deficiency in 1856 is discouraging, but the Medical Board believe, that the present returns have been more correctly prepared than those of the previous year, and thereby more real good has been accomplished. Other causes are also stated to which the Board ascribe the decrease in the number of Vaccinations, but the chief obstructions to the spread of the prophylactic are the prejudices and apathy of the Hindoo community, and the want of cordiality generally on the part of the Native of-

officials in the districts. As a remedial measure the Board recommend that the Collectors and other Civil officers be reminded of the orders of Government to give that full support and co-operation to the Circuit Vaccinators, which is necessary to the promotion of Vaccination, but which has been so partially accorded.

The Government on the 14th July, record their remarks and orders on the report, and the causes which have affected the progress of Vaccination in the Madras Presidency, and express a hope that all the Civil authorities will afford the fullest support to those specially employed in this work.

REPORT ON THE ADMINISTRATION OF THE SALT DEPARTMENT.

For 1855-56.

Mr. T. E. Trevor, Officiating Secretary to the Board of Revenue on the 7th February, 1857, submits statements containing the results of the Administration of the Salt Department for 1855-56.

The quantity of Salt in store on the 1st October, 1855, as compared with the same date in the previous year, was

	<i>Mds.</i>	<i>Srs.</i>	<i>Cks.</i>
In 1854,	11,26,664	14	15
In 1855,	20,59,864	12	4

The quantity imported and sold during the two years was as follows :—

IMPORTED.

	<i>Mds.</i>	<i>Srs.</i>	<i>Cks.</i>
In 1854-55,	73,63,823	30	12
In 1855-56,	74,09,058	2	12

SOLD.

	<i>Mds.</i>	<i>Srs.</i>	<i>Cks.</i>
In 1854-55,	59,12,566	32	5½
In 1855-56,	66,87,079	17	13¾

The following statement shows the Taidad and the actual outturn of each Agency during the past season :—

	<i>Taidad.</i>	<i>Outturn.</i>	<i>Deficiency.</i>
Hidgelee, .. Mds.	11,00,000	8,44,185	2,55,815
Tumlook,	9,00,000	6,51,834-18	2,48,166
Chittagong,	8,00,000	4,55,887	3,44,113
24-Pergunnahs, ..	6,00,000	2,33,068	3,66,932
Carried forward, ...	34,00,000	21,84,974-18	12,15,026

Brought forward, Mds.	84,00,000	21,84,974-18	12,15,026
Balasore,	7,00,000	6,51,100	48,900
Cuttack,	4,50,000	8,01,316	1,48,684
Pooree,	3,00,000	6,71,368	28,632
„ Kurkuteh, ..	4,00,000		

Total, ..	52,50,000	38,08,758-18	14,41,242
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The deficiency above shewn in the outturn in all the Agencies, the Board ascribe partly to the very unfavorable weather during the season of manufacture, and partly to the great difficulty in obtaining coolies and to some other causes.

The experiment for manufacturing Salt under the excise system has proved unsuccessful, and the Board attribute the failure to the contractors not being men of capital.

In the sales of Salt there has been an increase of 62,206 maunds in the undermentioned Divisions :—

	<i>Maunds.</i>		
Chittagong,	..	..	17,108
Bulloah,	..	..	2,567
Backergunge,	..	..	3,686
Jessore,	..	..	6,139
Baugundy,	..	..	2,512
Barripore,	..	..	9,163
Calcutta,	..	..	1,257
Western,	..	..	6,680
Midnapore,	..	..	1,735
Jellasure,	..	..	11,359

Total,	..	..	62,206
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There has also been an increase in the sales in Tumlook and in the three Agencies composing the Cuttack Divisions, aggregating 66,136 maunds 14 seers and 2½ chittacks.

The confiscations during the year as compared with the past year were as under :—

	<i>Attached.</i>			<i>Released.</i>			<i>Confiscated.</i>		
	<i>Mds.</i>	<i>Srs.</i>	<i>Cks.</i>	<i>Mds.</i>	<i>Srs.</i>	<i>Cks.</i>	<i>Mds.</i>	<i>Srs.</i>	<i>Cks.</i>
In 1854-55,	17,898	37	10½	15,101	26	4	3,985	0	6½
In 1855-56,	15,423	20	15	12,809	19	3½	30,023	20	15½

The convictions during the year under report were more numerous than the preceding year; and in Cuttack, the cases of smuggling have been fewer during the past year.

The Board subjoin the following remarks of the Controller upon the operation of the indulgent ruling of Section 27, Act XXIX :—

“The landholders generally have received the indulgence with a spirit of thankfulness which so rich a boon was well calculated to give rise to, and have by their co-operation to put

down illicit manufacture, prevented as far as I can ascertain any sacrifice to the Revenue. In addition to the Reports received from Barripore, Baugundy, Bullooah, and Western Superintendents to the effect that the Zemindars in their Divisions have strenuously endeavoured to check illicit manufacture on their respective Estates, I received during my tour credible information that Zemindars were doing all in their power to co-operate with our Preventive Establishment, and frequently took the initiative themselves in discountenancing illicit manufacture, and showing their displeasure on every occasion when it had been brought to their notice that any attempt to infringe the law had been resorted to.

“ During the past year, only two cases have been instituted by the Superintendent of Jellasore Salt Chokeys, and they are still pending in the Midnapore Judge’s file. In these cases, the Sudder Izardars were previously warned on several occasions, but to no effect. It was therefore, deemed necessary for the sake of example to prosecute them in the Civil Court.”

The Board express satisfaction at the above results, which show that the Zemindars appreciate the advantages of the indulgent reading of the Law.

The Board proceed to show the prospects of the current year. The Taidad for the current year is $52\frac{1}{2}$ lacs of maunds. From this is to be excluded the Salt manufactured in Cuttack, 4,50,000 maunds, as that will not come into the market until after the close of the year, which reduces the Taidad to 34 lacs of maunds. The Board observe, that the quantity produced in the Bengal Agencies will equal that of the last season *viz.* 22 lacs of maunds. They sum up the provision for the year thus in round numbers :—

	<i>Maunds.</i>
Salt in store on 1st October,	27,90,000
Imported during first Quarter,	12,95,000
Cuttack Salt now being imported,	10,00,000
Expected outturn exclusive of Cuttack,	22,00,000
————Imports,.. ..	22,50,000

Maunds, .. 95,35,000

The Board assume the total consumption to be what it is stated to have been in 1854-55 in Mr. Plowden’s Salt Report *viz.* 62 lacs of maunds, and there will still remain about 30 lacs of maunds in excess of the expenditure.

The importation of Madras Salt has been stopped.

MADRAS LAND REVENUE REPORT.

For Fusly $\frac{1264.}{1854-55.}$

ON 19th February, 1857 the Government of Madras record their belief that the measures adopted by Government for affording relief, and the prosecution of works of irrigation, have brought the country through a period of much difficulty. The Government notice certain remissions, and express their desire that all such should speedily be discontinued, both to secure the revenue and the ryot's independence. They notice that the supply of sugar-cane was less by 3,500 cawnies than in the preceding year. The decrease is attributed to a scarcity which caused the people to abandon luxuries for necessities. "The total demand for Fusly, 1264 was Rupees 4,63,60,842, of which 4,18,10,343, or more than 90 per cent. was collected within the Fusly; and at the end of January, 1856, Rupees 5,28,595 only remained." No great difficulty is apprehended in the way of realizing the balances. Government remark that the Tuccavee system will cease in Fusly, 1267, but the advances in this Fusly amount to Rs. 3,50,075. The salt revenue shewed an increase over last year of Rs. 3,61,594, and the net increase from all sources is Rs. 16,22,096. The Government trust the remissions to "privileged classes," if not in the nature of enams will shortly cease. Enquiry is to be made into outstanding balances, and the irrecoverable balances amounting to Rs. 45,399 are to be struck off finally, the money being owed by persons too poor to meet the demand.

"Before proceeding to describe the season under review, it is desirable to recall a few of the facts connected with that which preceded it. The season of Fusly, 1263 (A. D. 1853-54) was one of difficulty and depression, throughout the districts in the centre and on the eastern side of the Peninsula. Both the S. W. and the N. E. monsoons were seriously deficient, and the Board were obliged to give a painful picture of the state of several of the Provinces." The Land Revenue therefore fell off by Rs. 28,70,408, while the expenditure on public works undertaken to give the people food reached Rs. 17,00,000. The following table shews the revenue of the preceding ten years:—

<i>Fuslies.</i>	<i>Land Revenue.</i>	<i>Extra Sources.</i>	<i>Total.</i>
	Rs.	Rs.	Rs.
1254,	3,41,27,687	1,13,80,199	4,55,97,886
1255,	3,41,73,415	1,10,83,929	4,52,57,344
1256,	3,60,84,900	1,07,24,072	4,68,08,972
1257,	3,68,32,279	1,08,33,624	4,76,65,903

1258,	3,60,51,323	1,04,97,983	4,65,49,806
1259,	3,49,27,725	1,07,44,083	4,56,71,808
1260,	3,59,14,223	1,09,38,096	4,68,52,319
1261,	3,66,31,010	1,10,79,987	4,77,10,997
1262,	3,70,39,729	1,08,59,573	4,78,99,302
1263,	3,41,69,321	1,02,60,953	4,44,30,274

The season under review was not good, and in Bellary and Mysore there was great distress. For a time 1,00,000 persons were employed on the Public Works in Kurnool and Bellary, and in many districts the rains were deficient. The season was one well calculated to display the effects of works of irrigation. It was on the whole healthy. Its most remarkable feature was the rise in prices which amounted to 70 per cent. over the average of the preceding ten years. To meet this terrible pressure on the poorer classes Rs. 5,34,688 was expended on roads, and Rs. 9,49,160 more expended on the Railway, with Rs. 66,01,093 in Public Works greatly alleviated the distress. All duties on the import of grain were abolished, and in many places the price obtained for the crops compensated for the shortness of the harvest. The districts irrigated have most largely benefited. The revenue for the year was

	Rupees .
Land Revenue,	3,57,01,998
Extra Revenue,	1,03,37,118
Total,	4,60,39,116

The revenue therefore has recovered in spite of a season by no means favourable to the extent of Rs. 15,32,677. Five districts have slightly declined, a result produced entirely by reductions in the assessment. The total reductions amount to Rs. 11,37,491. The Board believe that the result will confirm the opinions of those most confident in the wisdom of diminishing the assessment in order to increase the area of cultivation. The Board proceed to explain the tables and add a list of persons in the Tanjore district who though ryots are wealthy. Thus 133 persons hold estates paying from Rs. 1200 to Rs. 9000, and seven landholders are named who pay from Rs. 10,475 to Rs. 25,000 a year. The advance in cultivation has been

Year.	Cawnies.
Fusly 1263,	85,42,623
„ 1264,	87,49,152
	2,06,529

"The amount of assessment on irrigated land, however, gives a lower total than in Fusly, 1263 owing chiefly to the reduction in the district of South Arcot and to the lower commutation rate in Tanjore." The following statement shews the amount cultivated with cane, cotton and indigo :—

<i>Products.</i>					<i>Fusly, 1264.</i>
					<i>Cawnies.</i>
Sugarcane,	...	..	...	...	27,457
Cotton,	...	..	...	..	6,56,584
Indigo,	...	..	...	..	1,22,309

There has been a decrease on all, chiefly on account of the scarcity which induced the ryots to cultivate necessities exclusively.* The indigo however has increased in North Arcot and Cuddapah. The Board referring to outstanding balances say that the ryots appear determined to try the existing law to the utmost, and that nothing short of a radical change will secure the punctual payment of revenue. Property to the extent of Rs. 7,071 was sold for arrears, but this statement shews much less than the truth, land having been sold subsequent to the close of the Fusly. The Board proceed to notice certain remissions, and express a hope that the system of Tuccavee or advances will soon be abolished. The charges of the year amount to Rs. 67,52,292 or Rs. 2,41,133 below those of the Fusly, 1263, but differences have been introduced in the mode of making up the accounts. The revenue from Salt has increased by Rs. 3,61,594, and from sea customs by Rs. 20,729. The following table shews all the items of Extra Revenue :—

<i>Items.</i>	<i>Fusly, 1263.</i>		<i>Fusly, 1264.</i>	
	<i>Rupees.</i>		<i>Rupees.</i>	
Salt,	46,67,316		50,28,910	
Frontier Chowkies,	2,47,360		1,64,802	
Moturpha,	11,69,466		11,15,543	
Sea Customs,	10,09,818		10,30,547	
Tobacco,	1,840		0	
Stamps,	5,76,449		5,57,338	
Abkarry,	22,61,528		21,44,230	
Sundry small Farms and Licenses,	3,27,176		2,95,747	
<hr/>				
Total,...	1,02,60,953		1,03,37,117	

The Board explain the changes, and notice that the tobacco revenue which on an average from 1255 to 1261 produced Rs.

* There has been some blunder in binding this book, owing to the practice of paging each Chapter separately.

8,47,261 now produces nothing, the monopoly having been abolished.

On 17th March, 1856, the Commissioner for the Northern Circars reports that the Circars contain 16,060 villages and hamlets of which 4717 are Government villages and 5515 proprietary villages, and 572 villages are rent free. The Government villages are thus classified :—

	<i>Villages.</i>
Ryotwar,	1,425
Joint Rents,	1,530
Cosht do.,	620
Rents for 1 year,.. .. .	217
Do. for longer periods,	231
	<hr/>
	4,023

Cosht rent is a form of joint rent. It is proposed to change the joint rent system into Ryotwar.

Ganjam and Vizagapatam are irrigated districts, and in Masulipatam, 46 per cent. of the revenue is derived from watered Land. In Rajahmundry 38 per cent. is derived from similar sources, and in Guntoor, about 17 per cent. From the reports of the Collectors it appears that the great advantage of irrigation is the certainty it produces. Disease last year caused a falling off among the cattle to the extent of

Cows, 18,045

She Buffaloes, 17,031

Sheep and goats, 80,292 but the Commis-

sioner places no confidence in the returns.

The Commissioner explains certain tables, and observes that the rains were plentiful, the average fall being 39 inches during the South West Monsoon and $5\frac{1}{2}$ during the North East Monsoon. In some of the districts there was an overplus of moisture very injurious to the crops. The Circars were more exempt from epidemic disease than during the previous year, but the mortality from fever was unusually large. The Commissioner explains some changes in the amount of receipts of little importance, and gives the following table of taxation :—

Fusly, 1264.

<i>Items.</i>	<i>Land.</i>	<i>Sist.</i>	<i>Average per Acre.</i>		
	<i>Acres.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>As.</i>	<i>P.</i>
Lands not irrigated,..	14,91,634	26,03,814	1	11	6
Depending on the Goda- very Annicut Channels,	89,553	3,12,992	3	8	0
Carried forward,	89,553	3,12,992	3	8	0

Irrigated Lands.	{	Brought forward,	89,553	3,12,992	3	8	0
		Depending on Tanks,	2,04,095	7,38,364	3	10	0
		Ditto on Channels,	1,01,125	3,81,324	3	12	4
		Ditto on Wells, ..	12,417	78,936	6	5	9
		Ditto on Rain, ...	40,820	92,681	2	4	0
		Total, ..	4,48,010	16,04,297	3	9	3
		Grand Total, ..	19,39,644	42,08,111	2	2	9

He explains the remissions which are small except in Guntoor where the season has been one of unusual disaster. The whole amount of remissions is Rs. 4,09,868, and the total of the Land Revenue is 66,75,464 being 8,754 above that of the preceding year.

Ryotwar, Cosht, and joint rents,	... Rs. 42,68,212
Rents for more than a year,	.. 1,29,136
Zemindaree and Proprietary estates,	.. 22,78,116
66,75,464	

The value of land in occupation but not cultivated amounts to Rs. 3,92,487 of this sum.

The Extra sources produced Rs. 21,94,158 or Rs. 1,58,459 more than last year. The increase has taken place chiefly in Salt. The Sevoy Jummah or extra land revenue amounted to Rs. 95,280 chiefly from interest on outstanding balances. The Commissioner explains the balances, and proceeds to state that the total collections during the year amounted to Rs. 88,87,280, being Rs. 1,96,125 in excess of last year. The revenue was collected without recourse to coercion except in 13 instances. The charges amounted to Rs. 10,96,579 or 12.34 per cent. on the amount realized. "The charges on account of irrigation, exclusive of those incurred for the Godavery and Kistnah Annicuts, amount to Rs. 1,13,758 on a revenue of Rupees 16,04,297 from irrigated lands, the expenditure being Rupees 7-9 per cent. on the revenue." Enams lapsed during the year to the amount of Rupees 22,537 a year. Thirteen thousand and eighteen English letters had to be disposed of in the Collectorates in the course of the year, together with 1,14,109 vernacular letters, and 97,868 more issued to Tehsildars. The correspondence shews a tendency to increase.

The statements appended to the Board's Report may be thus condensed :—

Villages in Madras,...		95,963
Of these ryotwar, ..		30,896
Tanks, ...		38,792
Anicuts, ...		3,320

Ploughs,	10,39,090
Cattle for agriculture,	26,48,428
Cows,	26,01,960
She buffaloes,	10,62,309
Sheep and goats,	50,46,351
Population,	2,23,01,697
Ryôts,	12,47,056
Individual leases,	14,76,320
Joint,	1,64,572
Puttahs above Rupees 1000,	408
——— above Rs. 500 but less than 750,...	1,027
——— between Rs. 50 and Rs. 100, ..	78,133
——— 10 and Rs. 50, ..	4,95,397
Extent of cane cultivation, cawnies, ..	20,269
Cotton,	5,69,050
Indigo,	1,18,514
Total Revenue from land,	Rs. 3,57,01,998
Extra sources, ..	1,03,37,117
Salt, ..	50,28,910
Sayer, ..	1,64,802
Abkarree, ..	21,44,232
Small farms, ..	3,27,176
Moturpha, ..	11,15,543
Customs, ..	10,30,547
Stamps, ...	5,76,449

The Appendix contains the separate report from each Collector with the figures, of which those given in the Report are the digest.

Vizagapatam.—The Collector explains his returns and notices the mode in which a tax is levied on clearings in the mountain jungle. The tax consists of eight annas on every knife employed.

Bellary.—The Collector furnishes tables minutely detailing the incidence of the Moturpha or trade tax.

1687	Corn merchants pay, ..	Rs. 7-10	each
526	Cloth ditto, ..	18-6	"
365	General and cloth, ..	26-13	"
4447	———, ..	9-12	"
93	Shroffs, ..	12-11	"
61	Confectioners, ..	7-15	"
183	Cotton dealers, ..	26-1	"
125	Betel and cocoanut, ..	12-13	"
75	Sugar and jaggery, ..	18-10	"
478	Betel and tobacco, ..	5-14	"
327	Oil dealers, ..	11-15	"
1123	Other dealers, ..	6-6	"

Carpenters pay Rs. 2-6, iron-founders Rs. 21-7, dyers Rs. 6-11, butchers Rs. 13-12 each. Each cloth loom pays Rs. 4-3, each carpet loom Rs. 3-8 a year.

EAST INDIA RAILWAYS.

Blue Book, dated 22nd July, 1857.

“THREE thousand six hundred and twenty-eight (3628) miles of railway have been sanctioned, and are in course of construction, viz. :—

By the East Indian Railway Company, from Calcutta to Delhi, with branches from Burdwan to Raneegunge, and from Mirzapore to Jubbulpore, 1,400 miles.

By the Madras Company, from Madras to the Western Coast at Beypore, 430 miles ; and

From Madras, *via* Cuddapah and Bellary, to meet a line from Bombay at or near the river Kristna, 810 miles.

By the Great Indian Peninsula Company, from Bombay to Callian, 33 miles, with extensions.

North East to Jubbulpore, to meet the line from Mirzapore, with a branch to Oomrawuttee and Nagpore, 818 miles ; and

South East *via* Poonah and Sholapore, to the Kristna River, to meet the line from Madras, 357 miles.

By the Sind Company, from Kurrachee to a point on the Indus, at or near to Kotree, 120 miles ; and

By the Bombay, Baroda, and Central India Company, from Surat to Baroda and Ahmedabad, 160 miles.”

These lines it is estimated will cost £30,231,000, of this sum £20,314,300 has been issued viz. £833,300 at $4\frac{1}{2}$ per cent. 1,000,000 at $4\frac{3}{4}$ per cent. and 1,84,810,000 at five per cent. of these sums.

East Indian Railway,	...	..	£8,731,000
Madras,	...	...	4,000,000
G. I. Peninsula,	...	...	6,333,300
Sind,	...	...	500,000
Bombay, Baroda and C. I. C.	...	...	750,000

20,314,300

The land required for the Railway and the termini has also been given Three hundred miles only are open, viz.

			Miles.
Calcutta to Raneegunge,	..	..	121
Bombay to Campoolie,	...	...	87
Madras to Arcot,	...	...	65

The works for the trunk lines, in accordance with Mr. Simms and Lord Dalhousie's advice, are most substantial. The gauge fixed on for all India is 5 feet 6 inches. The Bengal line has cost about £12,000 a mile, and the Madras line £5,500. In Bombay the accounts are as yet too imperfect for the mileage to be ascertained. "The line in Bengal, now open, is 10 miles longer than the London and Birmingham Railway. The latter occupied six years, the former five years in constructing. In Madras, the execution of the works has been more rapid still, 65 miles having been opened for traffic within three years after commencement, and in Bombay, also, 33 miles were completed and opened in less than four years."

In Bengal 8,95,121 passengers, and 77,685 tons of goods were carried during 1856. The receipts were £95,188-16-4. Of the passengers 8,35,204 passengers were third class. The Great Indian P. Railway was open for an average length of 59 miles, and earned £37,312-12 in six months. Of this sum £28,549 was profit.

In Madras the Railway in six months carried 71,456 passengers, and 6,14,401 maunds of goods, and earned £11,720. Minute statistics of expenses on the East Indian and Madras Railways are added, and a Railway map of India.

REPORT ON THE ABKAREE, L. P.

For 1855-56.

On the 27th January, 1857, the Officiating Junior Secretary to the Board of Revenue submits the annual Report:—

	Rs.
The total collections amounted to, ...	36,18,692
„ Balances,	88,817
„ Charges,	6,12,409
„ Net revenue,	30,06,283
Shewing increase over 1854-55, of ...	2,37,294
The number of persons arrested was 1,276	
————— imprisoned is only returned from some districts.	
The estimated revenue for 1856-57 is Rs. 26,91,791.	

The Board review each division, and refer to an attempt of the Police to interfere with the shops in Calcutta. In 1854-55 those shops numbered 152, yielding Rs. 2,11,825 a year.

REPORT ON CIVIL JUSTICE IN MADRAS.

For 1856.

THERE is no report, the record consisting of tables only. The most important statistics are as following :—

Suits instituted,	1,21,564
Value of property,	Ra. 1,11,49,999
Suits decreed,	47,043
For Plaintiffs,	40,747
Appeals decreed,	3,790
For Appellant,	1,674
Average duration of suits,	1 yr. 0 m. 16 days.
Highest—(in Honore),	2 yr. 6 m. 11 days.
Lowest—(in Guntoor),	0 1 m. 19 days.
Average duration of appealed suits,	2 yr. 8 m. 15 days.
Suits for Land rent and revenue,	4,566
„ Fixed property,	1,111
„ Debts, wages, &c.,	41,366

The same details are added as to each class of Judge, together with tables shewing the work performed by every individual Judge.

EXTERNAL COMMERCE OF BENGAL.

For 1856-57.

THE total value of the “External Commerce of Bengal (Chittagong, Balasore, and the Provinces of Arracan and Tenasserim included) has amounted, in the year 1856-57, to Rupees 31,17,63,348, being an increase over 1855-56 of Rupees 2,41,09,786, or Rupees 6,95,88,028 above the average value of the commerce of the three preceding years.”

The total value of the Imports was Rs. 15,43,22,170, and of Exports Rs. 15,74,41,178. The Import of articles of merchandise has declined principally in cotton twist, and yarn, cotton piece goods, silk goods and glass ware. Manufactured metals have increased. The Exports on the other hand have increased by Rs. 94,13,839 chiefly in saltpetre, hides, opium, sugar and grain. Sugar has increased by Rs. 48,86,049, and grain by Rs. 60,85,071. Indigo, jute, and lac, have declined.

The comparative movement of trade in 1855-56, and 1856-57 is thus shown :—

Statement showing the Aggregate Value of the Principal Articles of Import into Calcutta by Sea in 1856-57, compared with similar Imports in 1855-56.

	1855-56.	1856-57.	
Apparel,	Rs. 19,80,651	22,25,173	
Beads,	3,95,187	3,61,831	
Books and Stationery,	10,52,925	12,24,203	
Cabinet-ware,	7,70,933	8,60,655	
Chanks,	39,430	84,116	
Cigars,	2,39,793	2,26,647	
Coals,	5,86,717	3,96,860	
Coffee,	1,14,157	71,614	
Cotton Twist and Yarn,	90,02,951	81,22,578	
— Piece Goods,	8,21,10,638	8,17,15,287	
Drugs,	3,24,818	2,88,218	
Dyes,	2,05,043	3,99,202	
Fruits and Nuts,	8,21,699	11,40,169	
Glass-ware,	10,73,457	7,78,963	
Gums,	50,737	65,536	
Hides,	2,91,138	5,85,906	
Ice,	2,37,126	1,22,065	
Instruments, Musical,	1,46,849	1,67,152	
Jewellery,	6,09,930	7,13,295	
Machinery,	39,28,928	19,07,381	
Malt Liquors,	7,57,011	7,33,409	
Manufactured Metals,	67,73,770	76,12,339	
Medicine,	1,17,075	2,22,221	
METALS. {	Copper,	24,21,581	25,13,319
	Iron,	12,19,584	17,83,703
	Lead,	1,33,621	1,25,763
	Quicksilver,	69,284	1,93,568
	Spelter,	4,09,871	4,48,312
	Steel,	1,12,153	1,00,854
	Tin,	4,07,846	2,22,419
Yellow Metal,	1,04,750	2,88,178	
Military Stores,	7,888	21,060	
Naval Stores,	4,65,885	4,93,408	
Oilman's Stores,	3,11,059	3,12,687	
Paints and Colors,	8,07,158	8,60,968	
Perfumery,	2,11,574	2,12,648	
Porcelain and Earthen-ware,	1,39,911	1,80,265	
Provisions,	8,96,663	4,78,382	
Salt,	35,94,722	38,45,371	
Silk Goods,	8,95,183	5,57,686	
Spices,	7,94,778	11,54,390	
Spirits,	8,03,021	8,94,276	
Carried forward, ...	7,41,36,995	7,42,12,167	

Brought forward ...	7,44,86,995	7,42,12,167
Timber and Planks, ...	9,69,980	3,17,165
Umbrellas, ..	3,33,865	4,49,896
Wines, ...	10,66,673	10,08,737
Woollens, ...	7,67,280	6,88,156
Sundries, ...	20,96,101	22,63,606
Merchandise, ...	7,96,70,694	7,89,39,727
Treasure, ...	5,97,67,578	6,58,46,272
Total, Rupees, ...	13,94,38,272	14,47,85,999

Statement showing the Aggregate Value of the Principal Articles of Export from Calcutta by Sea in 1856-57, compared with similar Exports in 1855-56.

	1855-56.	1856-57.
Apparel, ...	Rs. 37,775	Rs. 20,757
Books, ...	20,898	3,348
Cotton Goods, ..	4,89,789	6,95,730
" Wool, ...	15,81,152	21,02,295
Cowries, ...	22,068	16,182
Drugs, ...	8,83,967	5,38,342
Dyes { Indigo, ..	1,97,84,900	1,47,66,481
{ Other sorts, ..	8,09,247	8,46,955
Grain, ...	1,16,97,691	1,77,82,762
Gunnies and Bags, ...	42,13,890	41,20,881
Hides, ...	37,15,824	49,77,136
Horns, ...	1,05,612	1,13,009
Jute, ...	32,65,748	27,49,754
Lac, ...	12,81,236	10,50,397
Naval Stores, ..	2,20,836	3,21,043
Oils, ...	4,72,029	5,55,284
Opium { Behar, ..	2,42,90,727	2,68,62,207
{ Benares, ...	1,20,98,691	1,13,25,832
Provisions, ...	1,41,293	2,38,890
Saltpetre, ...	42,35,333	54,10,742
Seeds, ..	82,52,441	58,01,124
Shawls, Cashmere, ...	5,64,792	3,44,678
Silk Piece Goods, ...	38,45,179	26,51,159
" Raw and Cocoons, ...	70,40,137	69,95,163
Spirits, Rum, ..	2,04,827	1,61,722
Sugar, ..	1,13,88,544	1,62,24,593
Tallow, ..	1,24,706	1,74,466
Tobacco, ...	1,20,644	2,12,419
Wax and Wax Candles, ...	96,497	3,63,680
Carried forward, ...	11,99,75,973	12,69,26,936

	Brought forward, ...	11,99,75,973	12,69,26,936
Sundries, ..		12,04,156	17,16,262
		<hr/>	<hr/>
Total, ...	...	12,11,80,129	12,86,43,198
Imports Re-exported, ...	...	21,12,131	48,72,030
		<hr/>	<hr/>
Total, ...	...	12,32,92,260	13,35,15,228
Treasure, ...	...	23,40,243	62,15,295
		<hr/>	<hr/>
Total, Rupees,	...	12,56,32,503	13,97,30,523

Principal Articles of Import and Export to and from Chittagong in 1856-57 compared with similar Imports and Exports in 1855-56.

IMPORTS.						1855-56.	1856-57.
Betelnuts, ..	..	..	..	..	..	Rs. 1,274	Rs. 2,715
Cocanuts, ...	...	...	...	...	...	10,473	11,884
„ Shell, ..	..	..	..	..	...	1,322	178
„ Oil, ...	...	...	...	...	...	648	1,575
Cowries, ..	...	...	...	...			8,225
Coir and Coir Rope,	..	..	..	..	...	7,738	10,815
Dammer, ...	...	...	...	..	..	1,643	3,149
Timber, ...	...	..	...	...		...	3,375
Sundries, ...	..	...	...	..	..	8,892	10,653
						<hr/>	<hr/>
Total, ...	...	...	...	...	...	31,990	52,569
Treasure, ...	..	..	...	...	...	6,000	4,000
						<hr/>	<hr/>
Total, Rupees,	...	...	...	...	...	37,990	56,569
						<hr/>	<hr/>
EXPORTS.						1855-56.	1856-57.
Grain, ...	..	..	...	...	...	Rs. 8,38,924	Rs. 4,55,738
Sugar, ..	..	..	..	...	...	4,035	2,665
Sugarcandy, ...	...	..	..	...	...	928	
Piece Goods, ...	...	...	...	...	...	15,375	7,188
Tobacco, ...	...	...	...	..	..	13,002	5,964
Twist and yarn, ...	...	...	...	...	...	2,307	1,066
Timber and Planks,	...	...	...	...	...	9,318	737
Sundries, ...	...	...	...	...	...	13,092	8,156
						<hr/>	<hr/>
Total Rupees,...	...	...	...	...	...	8,96,981	4,81,514

*Principal Articles of Import and Export to and from Balasore
in 1856-57 compared with similar Imports and Exports in
1855-56.*

IMPORTS.						1855-56.	1856-57.
Coconuts,	..	..	..	..	..		Rs. 7,540
Cowries,	...	...	...	...	...		165
Cair,	...	...	...	...	...		2,390
Cloth,	...	...	...	...	...		1,162
Grain,	...	...	...	...	...		3,793
Timber,	...	...	...	...	...	929	
Sundries,	..	...	...	...	...		3,883
Treasure,	...	...	...	...	...	20,000	10,500
Total, Rupees,						20,929	29,483
EXPORTS.						1855-56.	1856-57.
Grain,	...	...	...	...	...	Rs. 91,628	1,48,187
Timber,	...	..	...	..	...	929	
Sundries,	...	..	...	...	...	417	293
Total, Rupees,						92,974	1,48,479

*Principal Articles of Import and Export to and from Arracan
in 1856-57 compared with similar Imports and Exports
in 1855-56.*

IMPORTS.						1855-56.	1856-57.
Apparel,	...	..	...	...	...	Rs. 4,320	Rs. 415
Ale—Beer,	...	..	..	..	...	6,648	7,448
Brandy and Gin,	...	...	...	...	...	4,240	2,790
Cotton Piece Goods,	...	...	...	...	...	30,126	7,537
China-ware,	...	...	...	...	...	9,916	
Metal—Iron,	..	...	...	...	...		5,980
Rattans,	...	...	...	..	...	7,548	
Timbers,	...	..	...	...	...	13,543	9,526
Wines,	...	...	...	...	..	6,221	4,046
Sundries,	...	...	...	...	...	85,723	67,246
Treasure,	..	...	...	..	...	1,60,136	3,21,554
Total, Rupees,.....						3,28,421	4,26,542
EXPORTS.						1855-56.	1856-57.
Cutch,	...	..	...	...	...	1,820	
Gunnies,	...	...	...	...	...	20,500	
Carried forward,						22,320	

						Brought forward,	...	22,320	
Grain,	...	...	...	...	Rs.	1,06,76,444	Rs.	29,85,078	
Jute,	...	...	...	...	...	...	...	1,000	
Hides,	...	...	...	...	...	2,898	...	...	
Rattans,	...	...	...	...	...	3,976	...	728	
Pepper,	..	...	...	...	...	...	...	5 678	
Tobacco,	...	...	...	...	...	20,255	...	56,544	
Sundries,	...	..	...	...	...	3,319	...	4,201	
Treasure,	...	...	...	...	...	...	...	2,66,369	
Total, Rupees,...						1,07,29,212	33,19,598		

Principal Articles of Import and Export to and from the Tenasserim Provinces in 1856-57 compared with similar Imports and Exports in 1855-56.

IMPORTS.					1855-56.	1856-57.
Arms and Ammunition, ..	...	...	...	...	Rs. 5,821	Rs. 28,791
Cutch,	..	...	..	..	22,238	16,176
Earthen Ware,	...	...	..	...	28,679	...
Grain,	..	...	..	..	60,812	1,08,636
Malt Liquors, ...	...	...	..	...	95 179	24,051
Metal,—Iron, ..	..	...	..	..	8,780	24,052
Piece Goods,—Cotton, ...	...	...	...	...	6,55,944	7,99,065
Tobacco,	...	...	..	..	86,186	81,427
Twist and Yarn, ..	..	...	..	...	1,78,198	1,60,649
Wines,	...	...	...	...	20,226	8,005
Sundries,	...	...	...	..	8,82,912	12,58,050
Treasure,	...	...	...	...	1,58,543	4,24,122
Total, Rupees, ..					21,48,518	28,83,024

EXPORTS.					1855-56.	1856-57.
Betelnuts,	...	...	..	...	Rs. ...	Rs. 82,504
Cutch,	..	...	..	...	41,028	5,744
Grain,	..	...	..	...	6,12,652	9,27,692
Fishmaw,	...	...	..	...	551	3,041
Hides,	...	...	..	...	3,088	...
Horns,	...	...	..	...	566	189
Piece Goods—Cotton, ..	..	...	..	...	26 275	5,04,598
Stick Lac,	..	...	..	...	2,568	15,616
Twist and Yarn,	...	...	..	...	...	2,12,607
Timber,	...	...	..	...	10,66,462	20,63 966
Sundries, ..	...	...	...	...	65,684	6,53,772
Treasure;	...	...	..	...	2,13,370	1,47,910
Total, Rupees, ...					20,32,244	46,17,639

The largest trade is with Great Britain amounting to

Imports—merchandise,	..	..	...	Rs. 6,46,34,569
Treasure,	..	..	..	3,87,10,796
Total,	..	..	..	10,33,45,365
Exports—merchandise,	..	...	...	4,47,30,708
Treasure,	...	...	...	300
				4,47,36,008
Total,	..	...	Rs. 14,80,81,373	

France sends Rs. 17,67,308 of merchandize and Rs. 70,41,270 of treasure, and takes Rs. 88,67,714 of merchandise but no treasure. China sends Rs. 16,48,933 of merchandise and Rs. 75,17,485 of treasure, and takes Rs. 3,69,42,598 of merchandise, of which Rs. 3,27,67,507 consists of opium, and Rs. 20,58,726 of treasure.

The tonnage of Calcutta during the year was 1,014 vessels inwards with an aggregate of 5,72,127 tons, and outwards 1,113 vessels of 6,66,416 tons. More than a clear half each way carried British colours.

The Imports of specie into Calcutta were as follows :—

SPECIE AND BULLION.

IMPORTS.				1856-57.
United Kingdom,	...	...	...	Rs. 3,87,10,796
Aden,	..	..	..	51,300
America, North,	...	...	...	48,375
Arabian Gulf,	...	..	...	66,725
Bourbon,	...	..	...	8,92,989
Cape of Good Hope,	...	...	...	
Ceylon,	..	...	..	1,58 150
China. { Hongkong,	..	...	...	15,08,615
{ Other Ports,	...	...	...	60,09,870
France,	...	...	...	70,41,270
Malta,	..	..	...	80,600
Mauritius,	..	..	..	5,17,530
New South Wales,	...	...	...	28,78,111
Penang, Singapore and Malacca,	..	..	..	41,22,985
Carried forward,	...	...	...	6,20,87,816

Brought forward,	...	...	6,20,87,316
Persian Gulf,	...	...	80,000
Suez,	..	...	16,55,161
Bombay,	..	...	15,765
Bimlipatam,...	..	...	
Madras,	...	...	11,56,345
Rangoon,	...	...	7,98,685
Pondicherry,	...	...	58,000

Total, Rupees, 6,58,46,272

And the Exports Rs. 62,15,295, of which Rs. 13,35,902 was sent to the Cape, Rs. 17,44,500 to China, and Rs. 7,05,618 to Rangoon.

AREA AND POPULATION OF INDIA.

Blue Book, 27th July, 1857.

BRITISH STATES.

DISTRICT.	AREA.	POP.
	<i>Sq. Miles.</i>	
Lahore,	2,826	591,683
Umritsur,	2,024	884,429
Goordaspoor,	1,675	787,417
Goojranwalla,...	3,752	553,383
Sealkote,	1,350	641,782
Rawul Pindee,	5,996	553,750
Jhelum,	5,850	429,420
Goojrat,	1,916	517,626
Shahpore,	3,500	261,692
Mooltan,	5,634	411,386
Jhung, ..	5,718	251,769
Googaira,	4,142	308,020
Leia, ...	6,122	309,696
Khangurh, ..	1,027	211,920
Dehra Gaze Khan,	4,000	238,964
—— Ismael Khan,	4,123	362,041
Peshawur,	2,324	450,099
Hazarah,	2,424	296,364
Kohat, ...	2,840	101,232
Jullundur, ...	1,381	708,728
Hoshyarpoor,	2,204	845,354
Carried forward, ...	70,328	97,16,755

DISTRICT.					AREA.	POP.
		Brought forward,	Sq. Miles.		70,328	97,16,755
Kangra,	...	..	...	...	8,207	718,955
		Total,	...	...	73,535	10,435,710
Umballah,	...	...	...	...	1,832	782,017
Thaneysur,	...	...	...	...	2,336	496,748
Loodiana,	..	...	..	...	1,377	527,722
Ferozepore,	...	..	...	...	2,545	475,624
		Total,	...	...	8,090	2,282,111
Oude,	...	..	...	...	25,000	5,000,000
Nagpore or Berar,	...	...	...	...	76,432	4,650,000
Rangoon,	..	...	...	...	9,800	137,130
Bassein,	..	...	..	...	8,900	128,189
Prome,	...	...	...	...	5,500	100,000
Henzada,	...	...	...	...	2,200	103,775
Toungoo,	...	...	...	...	3,950	34,957
Tharawaddy,	...	...	...	...	1,950	66,129
		Total,	...	...	32,250	570,180
Amherst,	...	...	...	}	29,168	115,431
Tavoy,	...	...	...			
Ye,	..	...	...			
Mergui,	...	...	...			
EASTERN STRAITS SETTLEMENTS.						
Penang,	...	...	...	...	160	
Prov. Wellesley,	...	...	...	...	140	
		Total,	...	...	300	91,098
Singapore,	...	..	...	...	275	57,421
Malacca,	...	...	...	...	1,000	54,021
		Total,	...	...	1,575	202,540
Total under the direct administration of the Governor-General of India in Council.					246,050	23,255,972

BENGAL.

Patna,	..	...	...	...	1,828	1,200,000
Shahabad,	...	...	...	...	4,403	1,600,000
Behar,	...	...	...	...	5,694	2,500,000
Saran with Chumparun,	...	...	...	...	6,394	1,700,000
Total,					18,319	7,000,000

DISTRICT.						AREA.	POP.
Bhaugulpore,...	...				<i>Sq. Miles.</i>	7,803	2,000,000
Dinajpore,	...	...	...	...	...	3,820	1,200,000
Monghyr,	...	...	...	...	...	3,592	800,000
Poorneah,	...	...	...	...	...	5,712	1,600,000
Tirhoot,	...	...	...	...	...	6,114	2,400,000
Maldah,	...	...	...	...	...	1,288	431,000
Total,						28,329	8,431,000
Moorshedabad,	...	...	...	...	...	1,856	1,045,000
Bagoorah,	...	...	...	...	...	2,160	900,000
Rungpore,	...	...	...	...	...	4,130	2,559,000
Rajahahye,	...	...	...	...	...	2,084	671,000
Pubna...	...	...	...	...	...	2,606	600,000
Beerbhoom,	...	...	...	...	...	3,114	1,040,876
Total,						15,950	6,815,876
Dacca,	...	...	...	...	...	1,960	600,000
Furreedpore,	...	...	...	...	...	2,052	855,000
Mymensing,	...	...	...	...	...	4,712	1,487,000
Sylhet, including Jyntea,	...	...	...	...	...	8,424	380,000
Backergunge,	...	...	...	...	...	3,794	783,800
Total,						20,942	4,055,800
Jessore,	...	...	...	...	...	3,512	881,744
Twenty-four Pergunnahs, including City of }	...	...	...	...	...	2,277	701,182
Calcutta, ... }	...	...	...	...	...	2,224	1,854,152
Burdwan,	...	...	...	...	...	2,007	1,520,840
Hooghly,	...	...	...	...	...	2,942	298,736
Nuddea,	...	...	...	...	...	1,476	480,000
Bancoorah,	...	...	...	...	...	1,424	522,000
Baraset,	...	...	...	...	...		
Total,						15,862	5,758,654
From Sangu Island on the West, to the }	...	...	...	...	...	6,500	not known.
Ramnabad Channel on the East,	...	...	...	...	...	2,717	1,000,000
Chittagong, ... }	...	...	...	...	...	4,850	806,950
Tipperah and Bulloah,	...	...	...	...	...		600,000
Total, ...						7,567	2,406,950

DISTRICT.	AREA.	POP.
Cuttack, and Pooree, <i>Sq. Miles.</i>	4,829	1,000,000
Balasore,	1,876	556,395
Koordah,	930	571,160
Midnapore with Hidgellee,	5,029	666,328
<hr/>		<hr/>
Total,	12,664	2,793,883
<hr/>		<hr/>
Grand Total,	126,133	37,262,163

NON-REGULATION PROVINCES.

UPPER.	{	Joorhat, or Seebpoor,	...	...	...	2,825	200,000
		Luckimpoor,	...	...	...	2,950	30,000
		Sudiya, including Muttruck,	...	...	...	6,942	30,000
LOWER.	{	Kamroop,	...	...	...	2,788	300,000
		Nowgong,	...	...	...	4,160	70,000
		Durrung,	...	...	...	2,000	80,000
Goalpara,		...	...	...	...	2,166	39,835
Total,...						24,531	749,835
Cachar,		...	...	...	...	4,000	60,000
Territory resumed from Toola Ram Senahputtee,						2,160	5,015
Ramgurh,		...	...	...	...	8,524	372,216
Palamow,		...	...	...	...	3,468	} 482,900
Chota Nagpore,		...	...	...	...	5,808	
Pachete,		...	...	...	...	4,792	
Barabhoom,		...	...	...	...	860	} 772,340
Singbhoom,		...	...	...	...	2,944	
Sumbulpore,		...	...	...	...	4,693	274,000
Odeypore,		...	...	...	...	2,306	133,748
Total,						32,895	2,235,204
Akyab,		...	...	...	}	32,250	540,180
Sandoway,		...	...	...			
Ramree,		...	...	...			
Total under the administration of the } Lieutenant Governor of Bengal, ... }						221,969	40,852,397

NORTH-WESTERN PROVINCES.

Paneeput,	1,270	389,085
Hissar,	3,294	330,852
Delhi,	790	435,744
Rhotuck,	1,340	377,013
Georgaon,	1,939	662,486
<hr/>		<hr/>
Total,	8,633	2,195,180

DISTRICT.				AREA.	POP.
				<i>Sq. Miles.</i>	
Suharunpore, ...	...	...	...	2,162	801,325
Mozuffernuggur, ...	...	...	...	1,646	672,861
Meerut, ...	...	...	...	2,200	1,135,072
Bolundshuhur, ...	...	...	...	1,824	778,342
Allyghur, ...	...	...	...	2,153	1,134,565
Total, ...				9,985	4,522,165
Bijnor, ...	...	...	...	1,900	695,521
Moradabad, ...	...	...	...	2,699	1,138,461
Budson, ...	...	...	...	2,402	1,019,161
Bareilly, ...	...	...	...	3,119	1,378,268
Shahjahanpore, ...	...	...	...	2,308	986,096
Total, ...				12,428	5,217,507
Muttra, ...	...	...	...	1,613	862,909
Agra, ...	...	...	...	1,865	1,001,961
Farruckabad, ...	...	...	...	2,123	1,064,607
Mynpoorie, ...	...	...	...	2,020	832,714
Etawah, ...	...	...	...	1,677	610,965
Total, ...				9,298	4,873,156
Cawnpore, ...	...	...	...	2,348	1,174,556
Futtehpore, ...	...	...	...	1,583	679,787
Humeerpore, ...	...	...	...	2,242	548,604
Banda, ...	...	...	...	3,010	743,872
Allahabad, ...	...	...	...	2,788	1,379,788
Total, ...				11,971	4,526,607
Goruckpore, ...	...	...	...	7,840	3,087,874
Azimgurh, ...	...	...	...	2,516	1,653,251
Jounpoor, ...	...	...	...	1,552	1,143,749
Mirzapore, ...	...	...	...	51,52	1,104,815
Benares, ...	...	...	...	996	851,757
Ghazeepore, ...	...	...	...	2,181	1,596,324
Total, ...				19,737	9,437,270
Grand Total, ...				72,052	30,271,885

NON-REGULATION PRO- VINCES.

Kumaon, including Ghurwal, ...	...	6,962	605,910
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DISTRICT.			AREA.	POP.
Jaunsar and Bawar, ...		<i>Sq. Miles.</i>	579	24,684
Dehra Dhoon, ...	...	...	673	32,083
Khote Kasim, ...	...	...	70	13,767
Bhutti Territory, ...	...	...	3,017	112,974
Jaloun and Jansi, ...	...	...	4,405	376,297
Ajmera, ...	...	...	2,029	224,891
British Mhairwarrah, ...	...	...	282	37,715
Saugor, ...	...	...	1,857	305,594
Jubbulpore, ...	...	...	6,237	442,771
Hoshungabad, ...	...	...	1,916	242,611
Seonee, ...	...	...	1,459	227,070
Dumoh, ...	...	...	2,428	363,584
Nursingpore, ...	...	...	501	254,486
Baitool, ...	...	...	990	93,441
Total, ...			15,388	1,929,587
British Nimaur, ...	...	...	802	25,400
Total under Lieut.-Governor of the North Western Pro- vinces, ...			105,759	83,655,193

MADRAS.

Rajahmundry, ...	...	...	4,501	1,012,036
Masulipatam, ...	...	...	4,711	520,866
Guntoor, ...	...	...	4,752	570,083
Kurnool, ...	...	...	3,278	273,190
Cuddapah, ...	...	...	13,298	1,451,921
Nellore, ...	...	...	7,959	985,690
Bellary, ...	...	...	12,101	1,229,599
Arcot, N., ...	...	...	6,580	1,485,873
—, S. ...	...	...	5,020	1,006,005
Chingleput, ...	...	...	2,717	583,462
Madras City, ...	...	...	27	720,000
Salem, ...	...	...	7,499	1,195,377
Coimbatore, ...	...	...	8,151	1,153,862
Canara, ...	...	...	7,152	1,056,333
Malabar, ...	...	...	6,050	1,514,909
Trichinopoly, ...	...	...	2,922	709,196
Tanjore, ...	...	...	3,781	1,676,086
Madura, ...	...	...	13,545	1,756,791
Tinnevelly, ...	...	...	5,482	1,269,216
Total, ...			119,526	20,120,495

DISTRICT.

AREA.

POP.

NON-REGULATION DISTRICTS.

Ganjam,	Sq. Miles.	5,758	926,930
Vizagapatam,	...	4,690	1,254,272
Coorg,	...	2,116	135,600
Total,	...	12,564	2,316,802

Total under Madras Government, ... 132,090 22,437,297

BOMBAY.

Ahmedabad,	...	4,356	650,223
Kaira,	...	1,869	580,631
Broach,	...	1,319	290,984
Surat,	...	1,629	492,684
Tannah,	...	5,795	874,570
Candeish,	...	9,311	778,112
Bombay and Colaba Islands, including City } of Bombay, }	...	18	566,119
Poonah,	...	5,298	666,006
Ahmednuggur,	...	9,931	995,585
Sholapore,	...	4,991	675,115
Rutnagerri,	...	3,964	665,288
Belgaum,	...	5,405	1,025,882
Dharwar,	...	3,837	754,385
Total,	...	57,723	9,015,534

NON-REGULATION PROVINCES.

Sattara,	...	10,222	
Sinde,	...		1,005,771
Shikarpoor,	...	11,532	
Frontier District,	...	2,147	
Hydrabad,	...	26,760	
Kurrachee,	...	19,240	
Thur and Packur,	...	3,920	
Total,	...	63,599	1,768,737

Total under Bombay Government, ... 131,544 11,790,042

			AREA.	POP.
The Native States in Bengal, ...	Sq. Miles.	515,533	38,702,206	
" " Madras, ...	...	51,802	5,213,671	
" " Bombay, ...	...	60,575	4,460,370	
	Total, ...	627,910	48,376,247	
Foreign States French, ...	...	188	203,887	
" Portuguese, ...	...	1,066	313,262	
	Total,...	1,254	517,149	
Total of all India,...		1,466,576*	180,884,297	

THE FOSSILS OF THE EASTERN PORTION OF THE GREAT BASALTIC DISTRICT OF INDIA.

Geological Papers on Western India.

THE great basaltic district of India extends for more than two hundred thousand square miles, and owes its formation to volcanic action. It is difficult to conceive of the grandeur that must have attended the appearing of this vast region, which was effected by eruptions separated from each other by various intervals of time. The fossils of such a district are therefore peculiarly valuable as affording guides by which the age of the great trap formation may be ascertained, and for connecting the great sandstone formations of the North and South of India. The basaltic district situated in two provinces, the Deccan, including all the country south of the Nerbudda, and that watered by the Southern branches of the Ganges, may be considered to be geologically connected by an elevated tract to the North West of Bundelcund. From the north of this station a number of rivers descend over sandstone escarpments into the valley of the Ganges and the Jumna. From the East and South of the same tract the Mahanuddy collects a great body of water, and after flowing through a country but very little known but containing the diamond mines of Sumbulpore flows into the Bay of Bengal. The Nerbudda flows in an opposite direction, and taking its rise to the west of Amercantack traverses a country of granite, sandstone and basalt abounding in iron, and the finest marbles, and finally debouches into the Indian Ocean through the alluvial plains of Guzerat.

All the other great rivers of the Peninsula, including the Godave-

* The area of Europe deducting Russia is 1,686,117 square miles, and its population, also deducting Russia, 189,476,968.

ry, Kistnah, Pennar and Cauvery, issue from the Western Ghâts from the summits of which the country slopes generally to the east, except to the extreme south, where the descent is precipitous. Of these rivers, the Pennar though comparatively a small stream, is of the greatest geological interest. The greater portion of its waters are derived from the district in which the diamond, sandstones and argillaceous limestones are exhibited in their most characteristic forms. The most remarkable phenomenon, however, in the district watered by this river is the horizontal summits of many of the ranges, and the distinct manner in which the continuity of the strata can be traced from one hill to another, although extensive plains intervene, while at no great distance the sandstone which forms the summits of these hills is seen on the same level as the surrounding plains. This succession of strata is nowhere more conspicuous than in the diamond mines of Bangnapilly.*

The plains at the foot of this table land consist of a rich black alluvium containing fragments of basalt and jasper, and its basis is a blue limestone abounding with springs. On ascending the limestone becomes paler and above Bangnapilly contains the diamond breccia.

On emerging from the Nulla Mulla range the Pennar enters the plains of the Carnatic, and flows through low hills of laterite resting upon the ordinary granite of the Carnatic with its associated hornblende schist, quartz rock and mica slate. It is in a rock composed of the last two minerals that the copper mines of the Nellore district are situated. Between the Godavery and Kistnah rivers is a granitic platform intersected by numerous greenstone dikes, which are composed of a crystalline compound of hornblende and felspar. The greenstone generally known in India as black marble, is difficult to work but is susceptible of a most beautiful polish as in the mausoleums of Golconda, the tombs of Hyder Ali and Tippoo Sultan at Seringapatam, and in many of the sculptures of the Carnatic pagodas. When these dikes were formed it is probable that the granite was in a fluid state.

In the granitic platform between Hyderabad and Nirmul several small basaltic hills are insulated. Their flat summits and steep sides correspond with the hills of the great trap district. The lower part of the hills is composed of laminæ of a sonorous trap and the upper of globular concentric basalt, themselves friable and soapy to the feel but their nuclei of a deep black colour and containing large crystals of olivine and small kernels of calcedony.

On approaching the Godavery the granite changes its appearance and contains large and beautiful crystals of red felspar imbedded

* Woodcut given in the Report.

occasionally in veins of transparent quartz, clouded with spots of a milky colour. The river flows over granite and its bed is covered by numerous fragments of calcedonies and zeolites. The banks are composed of a black basaltic soil from the lower part of which thin slabs of kunkur project. About twenty miles to the east of Nirmul hornblende slate occurs. From this schist the magnetic iron ore, employed for ages in the manufacture of the damask steel, is obtained. The mines are mere holes dug through the thin granitic soil, and the ore is detached by means of crow bars. It is then collected, broken and washed. The ore is then smelted with charcoal and apparently no flux is used. The iron thus made is obtained at once perfectly malleable and tough and is equal to the best descriptions of Swedish. The mines, which afford a boundless supply of ore, are situated in the neighbourhood of vast forests and near a river navigable for boats during a period of the year. The iron ore thus found in the great sandstone formation, affords an additional argument in favour of the opinion of those who consider this rock and the subjacent schists as equivalent to the older European sedimentary formations rather than to those of the supermedial order.

On approaching the Sichel hills the granite becomes softer and decomposes rapidly, and the soil changes to the basaltic mould known in India by the name of cotton ground, mixed with calcedonies, zeolites, &c. In the bed of a torrent some very perfect specimens of the *Paludina Deccanensis** have been discovered and fragments of other shells. The hills themselves extend from the junction of the Wurdah with the Godavery in a W. N. W. direction, and are arranged in terraces with steep sides and projecting spurs. Their extreme breadth from the Nirmul Pass to Yedlabad is forty miles. They enclose narrow valleys abounding in streams or support table lands covered with black soil. The water is nowhere far from the surface. Granite not only forms part of the base of the hills but part of the mountains themselves. To the north of the Koorm river extensive fossil beds have been discovered consisting generally of gyrogonites, unios and individuals belonging to the *Paludina Physa* and *Limnea*. On descending towards Hutnoor granite presenting a concentric ligniform surface appears, but with this exception the basalt continues as before and *Paludina* are found. There is much calcareous matter mixed with the soil and at Elchoda seams of a pure white pulverulent lime were found between layers of basalt. At Hutnoor fragments of blue limestone not dissimilar to that occurring in the diamond district are common. On the second terrace the surface rock is changed to a white limestone composed of large

* See Plate III. Figure 20.

bivalve shells, the edges of which are decomposing rapidly. The continuation of the stratum is buried under an accumulation of basaltic debris from an overhanging spur. Towards the foot of the Pass the rock changes from nodular basalt to amygdaloid and a little further on the granite reappears. The country surrounding Yedlabad is covered by a deep basaltic soil, and the bed of the stream near the town is strewn with fragments of blue limestone. At Zynad argillaceous limestone appears on the surface and between the strata, which are generally horizontal, rock crystal and calcareous spar are distributed in thin seams. On the surface kunkur is very abundant, and since along the vertical partings of the strata there are rows of circular cavities it is probable that the stuff was the deposit of limestone held in solution by water and gaseous fluids issuing from the lines of fissure.

To the east of the village of Zynad there is a gentle elevation composed of limestone extending for three miles, and terminating in a small conical summit composed of basalt which has broken through the limestone. To the north of this place as far as the Payne-Gunga river the country is flat, covered with basaltic soil connected with trap hills and intermixed with jaspers. To the north of the river limestone is seen, and masses of white kunkur. Still further towards the Pindee hills sandstone appears on the south bank of a ravine, and on the opposite side at a lower level argillaceous limestone, through which hot springs with a temperature of 87° force their way up. On the other side of the Pindee hills at Kair other hot springs of the same temperature whose water is remarkably agreeable to the taste occur. There kunkur is exhibited in all stages of formation; so quickly is the deposit of kunkur formed that shells are entombed whilst adhering to the surface of the rock and tufts of grass are encrusted whilst their roots are still alive.

Sandstone forms the surface rock over the surrounding country its junction with the limestone being concealed by basaltic soil. In this sandstone, at the hill of Won, a fossil having a compact structure and of a deep black colour was discovered. The fact is of considerable interest as but few if any other fossils have been discovered in the sandstone of Southern India. To the north at Hingan Ghat considerable fragments of silicified palms and other plants have been found embedded in the chert lying on the basalt.

From Hingan Ghât to Nagpore the country presents no organic remains, the whole country being covered with a rich black soil from which insulated basaltic hills with flattened summits rise abruptly.

Mr. Malcolmson after describing the geological structure of the country between the Kistnah and Nagpore passes

on to the consideration of the origin of minerals in trap rocks. In this paper he endeavours to shew that Dr. Turner and others are entirely wrong in their supposition that all calcedonies, rock crystals, &c. when occurring in volcanic rocks are the result of infiltration. If such a supposition were correct he shews that since under every layer of basaltic soil in India calcareous matter is found deposited, such matter would appear in the cavities of trap rocks rather than such intractable substances, which is not the case. He therefore considers that the existence of minerals in trap rocks is owing to the play of the molecular attraction existing between similar particles of matter. Mr. Faraday by an ingenious experiment has shewn that retention of carbonic acid depends upon the absence of moisture, and not upon its subjectivity to pressure. Thus, admitting the igneous origin of trap rocks, the presence or absence of moisture during the various degrees of heat to which the rocks were exposed in the progress of eruption and of cooling accounts sufficiently for the phenomenon that the fossils of the basaltic district sometimes retain their carbonic acid, whilst the rock in which they occur has been fused by the surrounding basalt. Considering that the truth of the theory as to the origin of minerals in trap rocks has been established the report discusses the era of the great basalt formation, and considers that it was posterior to the deposition of the sandstones. With regard to the diamond sandstone and argillaceous limestone, Mr. Malcolmson considers that they belong to the more ancient secondary or even transition rocks. The fossils embedded by the basalt all belong to fresh water genera and to species which apparently no longer exist. Most of the specimens have however only been found in recent or tertiary formation, and it is therefore extremely probable that the basalt in which they are imbedded belongs to the tertiary epoch; with regard to the relative age of the laterite and trap it is probable that the trap has been protruded from below since the laterite assumed its present form.

SECUNDERABAD TO BEEDER.

Being Dr. Voysey's Notes on the Country.

THE journal was commenced in January, 1819. The first objects of interest visited on the road were the tombs of Golconda. They consist of large cupolas supported on square pilasters of granite of an extraordinary length, some of them being one solid

mass of at least 20 feet in height. The tomb is in the centre of the hall formed by the cupola and is made of greenstone. Of this greenstone a vein was discovered of about ten feet in width running east by south. Dr. Voysey minutely details the appearance of the country, and narrates how granite succeeded to trap and trap succeeds to granite. In many parts of his journey particularly between Secunderabad and Puttuncheroo the characteristics of the country were striking. Loggan stones and tors of the most grotesque appearance generally smaller than their pediment and piled three together, with tanks of some 25 miles in circumference, formed remarkable features. A vein of greenstone was discovered. It affected rhomboidal blocks and was penetrated with veins of quartz.

The river Manjira was crossed and the bund upon its banks, which were lined with granite, was observed to be full of magnetic iron sand. In all the streams passed in the journey which empty themselves in the Manjira carbonate of potash was observed.

The approach to the Godavery was over waving land entirely of trap and alluvium, and the height of the river two years before Dr. Voysey's visit was observed to have been thirty feet above its then present level. Near Oudeghir, the trap still continuing, iron clay very much resembling that of the Cape of Good Hope was seen. The route then led to Chillelah, Beeder being distant only about five coss.

Beeder is itself situated on a hill and is built upon a species of iron clay here found at the great elevation of 2000 feet above the level of the sea. The fort at Beeder was in a ruinous state for the builders finding the rock upon which it stood easily worked had cut it down level with the wall. The rock had subsequently mouldered, and the wall had been precipitated with it. At Beeder Dr. Voysey visited a button manufactory. After leaving Beeder the iron clay disappeared and was succeeded by trap soil interspersed with large masses of granite. Such continued to be the character of the country until Secunderabad was reached. In another part of the record Dr. Voysey remarks on some petrified shells found in the Gawilgerh range of hills.

MASULIPATAM TO GOA.

MASULIPATAM stands on the sea coast in nearly 16° N. latitude and is about 28 miles to the north of the principal embouchure of the Kistnah. The adjacent country is a plain which it is believed once formed the bottom of a lagoon. The

channel of the Kistnah, since altered, is supposed to have supplied much of the water. Towards Bezwarah gneiss makes its appearance, and there rises into a ridge six hundred feet in height. To the north east of Bezwarah are the diamond mines of Mallavelly where the gneiss is covered in some places by a conglomerate of sandstone. The diamonds are dug from a bed of gravel. The gneiss and granite continue to Hyderabad, and beyond to the village of Moonopilly, where they are covered by the great overlying trap formation. Near Beeder and sixteen miles east south east from that city the trap is overlain by an extensive laterite bed, two hundred feet thick, and extending to the west north west for twenty-eight miles. The laterite is a purply or brick red porous rock, filled with tubular cavities, empty, or containing white clay or blue tinted lithomargic earth. The sides of the cavities are ferruginous. The rock when not exposed to the air may be cut by a spade but hardens by exposure. Veins of manganese associated with oxide of iron sometimes occur in the laterite. On the side of those veins the laterite is so hard as to stand out in relief from the weathered portions of the rock. The laterite of Beeder is used for building walls and for the revetments of ditches. At Calliany a bazar has been excavated in the laterite cliffs. Beyond Murbi the laterite disappears, and trap with its associated wacke, amygdaloids and kunkur are alone met with. At the town ferruginous nodules existing in the laterite are collected, and after being roasted and coarsely ground are smelted. About ten miles to the south of Gulburgah beds of limestone outcrop from the trap and form the bed of the Bhima at Firozabad. At a little distance from the right bank of the river the trap again covers the limestone and continues to Inglisswara, where laterite appears. Trap then continues and is replaced by gneiss, which towards the junction of the Kistnah and Gutpurba is capped by limestone. To the west of the falls of Gokauk there is a limestone and sandstone formation succeeded by granitic rocks capped towards Goa by laterite.

THE GEOLOGY OF A PORTION OF THE DECCAN.

ON the 23rd of January, 1839 Colonel W. H. Sykes, F. R. S. F. G. S. F. L. S. read a paper before the Geological Society on the Geology of that portion of India lying between the parallels of 15° 45' and 19° 27' north latitude and 73° 30' and 75° 53' east longitude. The tract thus comprised extended over a district of 26,000 square miles and was remarkable for the

amazing extent of the trap region and the horizontal position of its stratified beds. But there were other prominent geological features besides the extent of the trap formation. The whole country had a granitic basis; trap veins occurred in granite; peculiar nodular limestone and laterite formations were widely extended; pulverulent limestone occurred in seams, and negatively, the country was remarkable for the absence of that uniform series of rocks which constitute the formations of Europe, and for the non-discovery of any fossil remains of extinct animals.

GEOLOGY OF THE ISLAND OF BOMBAY:

THERE are two papers on the Geology of the Island of Bombay printed in the Government records. One is by Mr. H. J. Carter and the other by Dr. G. Buist.

The Island of Bombay is one of a multitude of islands on the north-western coast of Hindostan. The group to which it belongs consist of about twenty islands, of which fourteen are well known. The principal rocks throughout this group are volcanic, and it is probable that the islands are all of the same age. In the formation of Bombay there have been four distinct periods:—1st. That of the primary volcanic or trappean effusions. 2nd. That of the deposit of fresh water strata. 3rd. That of the secondary or subsequent volcanic effusions, and 4th. The deposit of the marine strata. The fresh-water formation, as is proved by the absence of marine fossils, was deposited in a lake or river. The upper part of this formation, for 36 feet below the igneous rock that overlies it, is seen entire. Below this its strata have been broken up by igneous rocks. It is certain that this lake extended over the whole of the Island of Bombay, and it is probable that it extended as far as Ghora Bunder in the northern extremity of Salsette. In this formation there are the remains of wood, fruit and leaves. These appear to have been brought from a distance. It also appears that plants like large bulrushes grew in the lake and that it swarmed with cypridæ. The waters of the lake it is probable were dried up or diverted by a stream of molten larva. This was the first of the secondary volcanic effusions. The third period commences at this period. The irruption at present measures ninety feet thick on the eastern side, fifty-one feet thick on the western side of the Island. Thus immediately after this effusion it is probable that Bombay was black arid plain. After this effusion had hardened there was a second from below. The second effusion it is apparent could not find a ready outlet; it therefore followed the course of the

fresh water strata before it. These it intercalated and broke up into fragments. This effusion and the third effusion, it is probable, took a prominent part in raising up the longitudinal ridges running north east and south west which border the eastern and western sides of the Island. To these trappito basaltic and amygdaloidal effusions succeeded a third, which Mr. Carpenter styles the volcanic breccia. The interval that succeeded between the second and third effusions cannot be estimated. It is known however that the volcanic breccia succeeded to the amygdaloidal, for fragments of the latter are found amongst those fragments of heterogeneous rocks that compose the former. The principal characters of this effusion are, that it is composed chiefly of angular fragments of the fresh water formation which vary in size from particles that are invisible to the eye to pieces of ton's weight. These fragments form a continuous tract from Carnac Bunder to Sion. Mr. Carpenter considers this effusion to be contemporaneous with the lateritic formation, and is satisfied that it forced its way through the crusts of the previous rocks. There was yet another effusion. It is proved to have taken place by the existence of dikes of volcanic breccia.

The 4th period, it is believed, is not of a very ancient date. The marine deposit seems to belong to the post and newer pliocene formations. Bombay could never have been very long under water or very deeply immersed as the beaches scarcely exceed twenty feet in thickness. Mr. Carpenter here proceeds to describe those details from which the before mentioned inferences have been drawn.

As the report on the Geology of Bombay by Mr. Carpenter is thus speculative that by Dr. Buist treats of economic Geology. From Malabar Point to Mahaluximee there is a fine continuous ridge of black basalt which continues with more or less interruption to Bassein. From the light-house at the extreme end of Colaba to Sion and on the eastern side of the Island there is a mass of trap. It is irregular, sometimes it sinks to the level of the sea, and at other times rises into knolls. Between these two ridges, the basaltic ridge from Malabar Point to Bassein and the greenstone and tuffaceous ridges last mentioned the Island is flat and for the most part below the level of the sea. This fact seems to prove that the Island has undergone elevation since the period of volcanic action ceased. Evidences of an upheaval and depression are further evident from the alluvium amid Bombay. The record here proceeds to give the surface formations described as 1. Lagoon formation. 2. Littoral concrete or raised sea beaches. 3. Blue clay or submerged and reclaimed silt. 4. Lower alluvium or old marine clay. 5. Red earth. The last formation is of a peculiar character. It is as its name indicates of a

bright red colour and is found lying immediately over greenstone or some similar variety of friable trap.* On first being exposed to the air it refuses to sustain vegetable life and it remains without vegetation during the wettest season. With moderate manuring it changes entirely its character and becomes a fine uniform unctuous soil remarkable for its fertility.

The marine and fresh water formations form natural reservoirs for water, the volcanic rocks preventing any exit. The basalt is nearly destitute of water but it is readily obtained in the sedimentary beds beneath the volcanic rocks. The greenstone affords abundance of wells and in the littoral concrete water may be obtained every where. The water there found usually rises and falls with the tide. Along the line of the sea shore water can be obtained at a depth of some ten feet. In the clay nearly all the wells are brackish, the clay around being impregnated with salt. From Matoonga to Sion water can be obtained at a depth of from ten to twenty-five feet. The report here enumerates the papers that have been written upon the Geology of Bombay.

THE TRAP FORMATION OF THE SAGAR DISTRICT.

CAPTAIN S. Coulthard submitted this paper to the Asiatic Society in 1829. The trap formation of Sagar is comprised within a district bounded on the north at Hirapur by a primitive range; on the south, to the south of the Narmada, by a primitive range, on the west by the longitude of Mayapur and on the east by a granite range crossing the Narmada at Jebelpoor and running in a northerly direction. This basin elongated east and west has in its bottom the sandstone deposit rising through the trap formation covered with a coating of lias or on the surface. It appears on the surface for one hundred and ten miles in a line drawn directly from Jebelpore to Sagar. From the western limits to the central part, that is from Mayapur to Sagar trap rocks darken the surface. At Sagar they rest on sandstone, which does not appear to have much between it and the proximate primitive rocks. The sandstone rock of this district itself contains more than 54,000 square miles, and may be considered as a continuation and a sort of north eastern bend, from Baroda as a point, of the rock of the Malabar Coast. The appearance of the trap militates on the whole against its being considered to have an igneous origin. In the limestone

* This must be received with caution.

of the trap no fossils had been found by Captain Coulthard but fresh-water shells and silicified wood have since been discovered in abundance.

ON THE GEOLOGY OF MALWA.

CAPTAIN Dangerfield's report on the Geology of Malwa, appeared first in Sir John Malcolm's Memoir of Central India. It has since been reprinted in a separate form.

Malwa is an elevated plain with its slope to the north. It constitutes the northern termination of an extensive trap formation. Malwa though bounded on all sides by hilly tracts contains none but table crowned hills varying from one hundred to three hundred feet in height. These mountains are distinctly stratified, and consist of alternate beds of basalt or trap and amygdaloid, from the great difference in the resistance made to decomposition by these strata their exposed ends acquire a very distinct character. The amygdaloid forms the great slope and the trap retains its original perpendicularity. This circumstance facilitates the construction of the forts so numerous in this part of the country. Below the Jaum Ghât in the Vindhya range about a mile from the Nerbudda between Mundleysir and Mhysir there is a cluster of basaltic columns. They rise from a small basaltic ridge. Their diameters vary from a foot to a foot and a half. Their general form is a prism of four or six sides. The basalt of which they are composed is of a brilliant black. The columns are both vertical and inclined. They dip to no particular point. The bed of the Nerbudda consists for a considerable portion of its course of basaltic rocks. These form numerous shallows and rapids. Below Chiculda until its entrance into Goozeerat the river is not navigable. Its bed is contracted by two hilly ranges and its course interrupted by elevated rocky ridges. The principal falls are three in number. They occur at Deyree, Sansadarah and at Hurrin Pall or Deer's Leap.

Between Mundleysir and Chiculda the banks of the Nerbudda are about 70 feet in height. They consist of a thin upper layer of rich vegetable mould, and two distinct strata of alluvium, from the upper of which muriate of soda is extracted by the natives. The lower stratum is impregnated with carbonate of soda. The soda is not extracted like the common salt but its efflorescence on the banks is collected. Above Mundleysir the northern bank becomes rocky and precipitous and consists of gently inclined beds, chiefly of greenstone slate with small in-

terspersed grains of mica, but the island of Mundatta consists of hornstone slate. Above this the banks are wooded and consist of low hills and deep ravines and water tanks. Iron ore abounds, but it is only smelted at Khautcote and Chandghur for the country is almost desolate. The ore is of good quality. This hilly tract corresponds to that below Chiculdah which however is better peopled. It is inhabited chiefly by wild Bheel tribes and the Rajpeeply hills near Broach are inhabited by the coolies. In these hills there are several cornelian mines. In the upper plains of Malwa there is but little diversity, trap rocks alternating with amygdaloid. In the plain the vegetable soil, a rich black loam, varies in depth from three to ten feet. Near Sultanpoor beyond Dhar there is a large bed of jasper and in the neighbouring hills a great variety of crystallized siliceous minerals abound.

Along the whole bed of the Chumbul is a broad bed of horizontally stratified tabular basalt. It is probably connected with the basaltic columns in Nemaaur. To the east of the Chumbul and extending the whole length of the province there is a narrow bed of cellular clay iron ore. It constitutes a low ridge of which the higher parts rest on sandstone. The ore is poor and is not worked. The northern portion of Malwa is chiefly occupied by sandstone and sandstone slates. The sandstones are generally very fine grained. The sandstones begin at a short distance south of Jowra and extend down the western boundary of Malwa.

At Cheetakairee iron ore is found in reniform or mammillated masses and is worked. To the west a compact greyish limestone appears. This rock again rises to the surface at Dewlia. From Bheindur to Kairoda the country gradually rises, but between Kairoda and the foot of the range that encloses the city of Oodeypoor the country is flat and swampy. The range itself is about 500 feet in height and is composed of either massive or columnar hornstone. Near the Oodeypoor valley a little to the southward of Deybaree is a fine lake. It is formed by a dam being thrown across the bed of the river Bedus which here flows through a chasm about one hundred feet in width. The dam is thirty-seven feet above the level of the lake, is 334 yards long and 110 yards broad at the top. This lake is however far inferior in its proportions to that at Oodeypoor which is supplied by the Goomety. The boundaries on either side of this lake are two mountains 700 feet in height. The dam closing the opening in the range through which the river burst is of marble. The height of this dam to the water's edge is fifty-four feet, its length is three furlongs and its breadth one hundred and ten yards. The lake is about eight miles long and four miles broad.

At Oodeypoor copper and lead are said to abound, and the mines to the northward and southward formerly produced a considerable revenue. At Oodeypoor there occurs a largely granular red limestone containing crystals of rather dark green serpentine and a very little mica. Granite again occurs at Jubboogaum. On the borders of Guzerat a coarse millstone is quarried and sent to Baroda and the neighbouring towns.

Of the geological character of the eastern and north eastern boundary of Malwa little knowledge had in 1823 been obtained. The country however consists of a broad hilly belt leading down to the lower plains of Bundelcund by the second range of the Vindhya.

GEOLOGY OF NAGPUR.

THIS paper only refers to the western part of Nagpur. It includes an area of twenty-four thousand square miles. "Its northern side is formed by the table-land stretching from the Mahadewa Hills on the north-west to the northern extremity of the Lánji Hills on the north-east; the south-eastern side is constituted partly by the chain last mentioned, and partly by a line drawn from its southern base to the junction of the Wein Gunga and Wardha, which latter river marks out nearly the whole of the south-western side." The district presents a water's bed from north to south. The most important rivers that flow through it are the Kanhan from the Mahadewa Hills, which at Kampti "receives the Pech from the same upland tract, and the Kolar,—the Wardhá, which is joined by the Wanna from the hills west of Nagpur, and by the Pain Ganga from the Nizam's country,—and the Wein Ganga, the largest of all, which on its left bank, is increased by the united streams of the Wagh, the Son and the Dewa, and by the Chulband, and on the right by the Kanhan, and Wardha, after its confluence with the latter of which it takes the name of the Pranhita, and ere long discharges its waters into the Godavari."

The geological structure of the territory whose extent we have mentioned has for sometime engaged the attention of scientific men. The first who examined it were unsuccessful in their search for fossils. In 1833, however, Dr. Malcolmson discovered *Unio Deccanensis*, *Physa Prinsepia*, *Paludina Deccanensis* and specimens of silicified wood, and since his time several productive sites for sandstone organisms have been met with. The paleontology of the district is in fact both varied and important. It is however the juxtaposition of trap sand-

stone and granite that invests the geology of Nagpore with special importance.

The greater part of the trap lies on the west in the shape of a parallelogram. Its greatest length is 120 miles and its breadth from fifty to sixty. Its south-western side is formed by the Wardhá, its south eastern side commences from Suit on the Wardhá to the north-west of Bhisi where its north-east side begins, and continues up the right bank of the Kanhán to the ancient Gond Fortress of Dewajad. At Dewajad the upland tract of Multai forms the north-west side and completes the parallelogram. In addition to this the main body of trap there is a development of it to the north.

The plutonic and metamorphic formation occurs principally to the north. This formation may be considered to form a parallelogram stretching between Nagpur and the Lanji hills of the same size as the trappean parallelogram and applied perpendicularly to it. A large outburst of granitic rocks occurs moreover in the upper portion of the Wagh river. In both the districts the general strike of the strata is north and south.

The sandstone formation exists in the central part of Nagpur and laterite occurs at various parts within the area. The report then goes on to describe "in a descending order" the thickness, nature and contents of the formations within the area whose boundaries have been previously assigned.

SUPERFICIAL FORMATION.

1. *Black Soil*.—It seldom exceeds twenty feet in depth and contains no organic remains of any antiquity.

2. *Red Soil*.—Is frequently fifty feet in depth and is for the most part unfossiliferous.

3. *Brown Clay*.—Both the red and black soils rest in this formation, which seldom exceeds twenty feet in depth and is not known to be fossiliferous. In its conglomerate however the tusks of a large mammal have been found.

4. *Laterite*.—This formation seldom exceeds 10 feet in depth. No fossils have been discovered in it, but to the east of Nagpur it contains diamond.

5, 6, 7.—The next rock to laterite is trap. This formation naturally divides itself into three heads, namely, overlying trap, aqueous formation and underlying trap. For the sake of perspicuity they are all considered under one head, trap.

The overlying trap is extremely varied, is of all tints, substance and structure. Its average depth is about 20 feet. The depth of the underlying trap is not known.

The fossils found in the fresh-water formation between the two are :—

" Small bones, probably reptilian.

Remains of a fresh-water tortoise.

Fish scales, both Cycloid and Ganoid, in great numbers.

Insects, found at Takli : Mr. Hunter enumerates about ten species of *Coleoptera*.

Entomostracans ; five or six species of *Cypris*.

Mollusca, land and fresh-water, in great numbers. The following genera are enumerated :—

Bulimus,

Melania,

Limnæus.

Succinea,

Paludina,

Unio.

Physa,

Valvata,

Plant remains : Mr. Hunter enumerates :—

Fruits and seeds, about fifty species.

Leaves, exogenous, six forms.

„ endogenous, three or four.

Stems, exogenous, few species ; some specimens six feet in girth.

„ endogenous.

Roots, six or seven kinds.

Chara, seed vessels."

The relation which the underlying and overlying trap bear to each other is thus described in the report. " Before either of the volcanic rocks was poured out in our area, there had been deposited on the sandstone a stratum which must have been at least six feet thick. Over this there was spread a molten mass of lava, which hardened the surface of the stratum, and itself cooled into a flat sheet of globular basalt about 20 feet thick. After a period of repose the internal fires again became active, and discharged another effusion, which insinuate itself between the sandstone and the superior deposit ; and, accumulating in some parts more than in others, through force of tension, ruptured the superincumbent mass, tilting up the stratum and scattering the overlying trap, or, raising both stratum and trap above the level of the plain, either left it a flat-topped hill, or, with boiling surge, pushed up its summit gradually or by fitful efforts. In these convulsions, the more recent trap, where it has not tilted up the deposit altogether, has generally encroached upon it, entangling some of its fragments, converting the greater portion of it into a crumbling vesicular rock, or producing miniature outliers of amygdaloid from materials susceptible of the change."

8. *The Sandstone Formation*.—The report considers this under four heads :—1st. Coarse ferruginous sandstone, averaging a thickness of 25 feet. 2nd. A fine sandstone containing specks of mica, fossiliferous and with a thickness of perhaps 300 feet.

3rd. Red shale with a thickness of 30 feet and 4th, Limestone. The thickness of the limestone is perhaps 100 feet.

9. *Plutonic and metamorphic Rocks*.—In Nagpur the usual combinations of gneiss and quartz rock, mica and hornblende schist with massive granite occur but perhaps the most common rock is gneiss. The quartz rock yields gold but the principal ore that it yields is iron. This ore may be obtained in immense quantities in the district of Chanda “both on the east and west of the Wein Gangá. Near Dewalgaum, only three miles from the east bank of this navigable stream, which communicates by the Godávári with the Bay of Bengal, in the midst of a level country covered with jungle, there is a hill named Khandeswar, consisting of strata tilted up at an angle of 60, or 70, the dip being to the north. The summit of the hill is about 250 feet above the level of the plain, 100 feet being gradual ascent through jungle, and the remainder an abrupt wall of naked rock. The iron ore is for the most part specular though many specimens possess polarity, and seem to be magnetic. It is on the surface of the slope that it is most valuable; but the whole mass, from an unknown depth under ground to the highest peak above it, is richly laden with metal. This single hill might furnish iron for the construction of all the railroads that shall ever be made in India, and with its abundance of fuel and cheapness of labour, and convenience of situation, it is admirably adapted for an export trade to every part of the country. But besides this locality, there are others in the neighbourhood which could each contribute an unlimited supply of the same indispensable metal. Among these may be mentioned Lohará, Ogalpet, and Metápár, Bhánápur Mendá, and Gunjáwahi, which are all on the W. of the Wein Gangá; and at all of which places the ore seems to occur in quartz, and is sometimes granular, but for the most part compact.” The report proceeds to trace the geological history of the district.

Amongst the fossils discovered by Messrs. Hislop and Hunter in Central India was a cranium of a reptile that was submitted to Professor Owen. The fossil was found in the sandstone series of Mangali about sixty miles to the south of Nagpur. Professor Owen designates the species represented by this fossil “*Brachyops Laticeps*” and submits that it is closely allied to “*Labyriuthodont Batrachia*.” In a subsequent paper Mr. Hislop modified his views with regard to the Indian fresh water formation and divides them thus:—1. Upper sandstone series. 2. Laminated series embracing (i) arenaceous, carbonaceous and bituminous strata (ii) argillaceous shales and (iii) limestone. 3. Lower sandstone series.

FOSSIL FISH FROM THE TABLE LAND OF THE DECCAN.

THE author of this paper is Colonel Sykes. He says "considering the enormous development of trap covering some 200,000 square miles in the Deccan—the granitic basis of the whole peninsula of India,—the area occupied by laterite—the want of sedimentary rocks, and the hitherto total absence of organic marine fossils in the Deccan (for a few shells brought to notice by the late Dr. Malcolmson were either fluviatile or lacustrine),—the discovery of fossil fish on the margin of the trap region was a novelty necessarily of great interest, as indicative of the former submerged state of the peninsula of India." It is proposed to call the new specimen *Lepidotus Deccanensis*. It is remarkable for the slender proportions of the anterior part of the trunk and the thickness of the posterior part between the oval fin and the tail. The scales are perfectly smooth and the teeth are conical. Sir Philip Egerton thinks from specimens of this fish being generally found associated with terrestrial vegetable remains that it was an inshore fish.

THE GEOLOGY OF KOTAH.

THE village of Kotah is situated on a plain, on the left bank of the Pranheetah river twelve miles above its junction with the Godavery. It was from this locality that Dr. Walker obtained his specimens of fossil fish (*Lepidotus Deccanensis*.) At the station Dr. Walker conducted the experiment of boring for coal. No coal was however found. The surface formation in the immediate neighbourhood of Kotah consists of black regur or cotton soil, through this sandstone crops up, rising in ridges of hills to the height of some forty feet to the south of the station argillaceous limestone makes its appearance extending for about 150 yards. The layers of this rock vary in thickness from one eighth of an inch to a foot and are frequently separated from each other by seams of fibrous carbonate of lime. The report goes on to describe the deposits, succeeding each other from above downwards, as they were exhibited in boring for coal. To the report is appended a Note by Professor Owen on the Crocodilian remains of Kotah.

GEOLOGICAL NOTES ON TRACT BETWEEN BELLARY AND BIJAPPOOR.

THESE notes were taken by Captain Newbold, F. R. S. during a survey of the line of road connecting Bombay and Madras which lies between Bellary and the ancient Mohamedan capital Bijapoor. "They commence from Bellary, comprising a line of 164 miles, extending in a north-westerly direction through part of the Ceded Districts, the Nizam's dominions, and the Southern Muratha Country, crossing at right angles the courses of the Tumbuddra and Kistnah rivers as they hasten across the Peninsula from west to east, to add their tribute to the Indian Ocean." Between Bellary and Yailbenchi a distance of 15 miles, the plain is supported on granite and gneiss, and for the last 4 miles is covered to the depth of 18 feet with cotton soil. This soil in some instances rests on "kunker" which is burnt by the natives for lime. The "kunker" resembles the travertine of Italy. The "regur" or cotton soil continues, as far as Devasamudrum and derives additional fertility from being watered by numerous rivulets running from the bank at Daroji. The soil produces rice, wheat and sugar-cane. In some places it is impregnated with muriate of soda, and there are established a few salt manufactories. Beyond Devasamudrum to the Tumbuddra which, is crossed by basket boats to Mustoor, gneiss is the prevailing rock.

At Mustoor, the plain rises towards Umaluti, a walled village about 25 miles distant. Beyond Umaluti, the regur is succeeded by the debris of granitic rocks. The country is indifferently watered and the majority of the springs are brackish.

At Tawurghirry occurs a range of hills called "Caradi Guddi" from being infested by a number of bears which are attracted by the dwarf date that luxuriate in the neighbourhood.

Beyond Tawurghirry chlorite slate occurs, and at Idlapur large masses of kunker embedding hematitic iron ore are seen. The chloritic slate is in this neighbourhood replaced by quartz until it again appears near Cundigul. Beyond Cundigul gneiss again makes its appearance and is succeeded by granite. The report here goes on to describe the Kistnah which Captain Newbold crossed in the usual wicker baskets. After leaving the Kistnah, the plain rises to the north and on the rising ground on which stands the little fort of Berylhal the road is literally paved with *boules* of trap. From Umblanur the trap is observed to undergo many changes in texture and colour. In some case the rock is divided into rectangular and rhomboidal prisms which by the mysterious law of crystallization manifested

in both ancient and modern trappean rocks, from the microscopic atoms of augite and hornblende to the prodigious pillars of Staffa and the Giant's Causeway, often assume a pentagonal and hexagonal shape. From Bagwari to Mangoli, $15\frac{1}{2}$ miles south of Bijapore, the trap continues, but is at times overlaid with laterite, before however reaching Bijapore the trap is again a surface rock. That city stands on an immense sheet of overlying trap. The report here contains further notes on the route to Bellary from Bijapore by Kannighirry, and concludes with a notice of the great overlying trap formation of Central and Western India.

GEOLOGY OF THE SOUTHERN MAHRATTA COUNTRY.

THERE are two reports on the Geology of the Southern Mahratta Country, one by Dr. A Christie and the second by Captain Newbold.

Dr. A. Christie observes that the "geognostical arrangement" of the rocks of the Indian peninsula is every where simple, the same formation being sometimes continuous for several hundred miles. The principle rocks are granite, transition rocks, old sea sandstone, trap rocks, and, superior to all this, a ferruginous claystone.

Granite is by far the most abundant rock in the Peninsula of India. It stretches from Cape Comorin to beyond Nagpore and Ellichpore, occupying a great part of the Carnatic, Malabar and Mysore, nearly the whole of the Nizam's dominions and a large part of Berar. It is also found in Malwa, Bundelcund, in the neighbourhood of Delhi, and some of the highest peaks of the Himalayas are composed of it; all the eastern portion of the Southern Mahratta Doab from Sungum to the British frontier consists of granite, but west of that it only occurs occasionally. Upon a superficial examination the granite of India might be pronounced to have several distinct structure but they all may be referred to the *lœminar*. The *lœmina* are often divided by natural seams; these seams becoming widened by the action of the weather account for the columnar and other appearances of the granite.

Granite is not generally employed in India as a building stone, it is used however for paving, and is hewn into handmills, two or four of which are a load for a bullock. These are the primeval mills of Scripture. The Hindoo temples at Anagoondy are built of granite. In one of the principle buildings is an extensive "colonnade, the columns

of which are light, with small pedestals and capitals and approaching somewhat in their proportions to the Grecian. Some of the pillars are tastefully carved with flowers. A few are in the form of caryatides. They support immense slabs of granite, which are carved on their under surface, so as to form an ornamental roof. The largest of these slabs, which are in the central part of the building are at least 30 feet long." The natives of India have a way of polishing granite, which communicates to it a black colour. They polish all kinds of stones by a mixture of powdered corundums and melted lac. The mixture being allowed to cool the stone is polished by being sprinkled with water and rubbed with these oblong masses.

The transition rocks occupy a large part of the Darwar and Canara districts and of the territory of Goa.

In the Southern Mahratta Country many varieties of clay slate are met with. Its principal colour are grey blue, greenish red and white. The grey variety is the most common. It occurs at Kulladghee, Darwar, Hoolgoor and Soonda.

Chlorite slate and talc slate have a wide distribution ; both are met with throughout the whole of the central and southern parts of the Darwar district and in the western Ghâts.

Limestone occurs only in the north east part of the Darwar district, it is associated with clay slates and grey wacke, with the latter at Kulladghee.

Gneiss occurs in large quantities at Dummul and beds of it are met with at Nurgoond.

Beds of quartz are found among all the other transition rocks in this district.

Old red sandstone is one of the most extensive formations in India. In the Southern Mahratta Country it extends from Gudjunderghur to the north and north-east, as far as the Kistnah, some way into the Hyderabad country and from thence beyond Gokauk. It forms the summits of three insulated hills, those of Noulgoond, Nurgoond and Chick Nurgoond.

At Badamy, the hills, composed to their very bases of sandstone, have perfectly even summits, and are surrounded on all sides by vertical precipices. The hills have a height of probably 200 feet. The two small forts of Badamy are built upon these sandstone hills. The only ascent to them is by means of steps cut in the solid rock, the passage to which is between immense walls of rock 200 feet high.

Trap rocks occur extensively in different parts of India. In the Darwar district they do not occur in great abundances. In the neighbourhood of Belgaum the trap forms rounded hills.. The most common rocks that occur in the trap formation are a loose greenstone, basalt and amygdaloid.

Ferruginous claystone, the laterite of Buchanan, occurs in great abundance in the Deccan, in Mysore, in the district of Cuddapah and Orissa. It extends all along the Western Coast from Fort Victoria to the Southern extremity of the Peninsula. It is met with in Ceylon and is almost the only rock of Malacca. In some places it contains numerous small nodules of clay iron stone. These are picked up by the natives and smelted in a rude furnace blown by the hand bellows, such as is used in Europe by the Gypsies.

Immense deposits of a black alluvial clay are met with in various parts of India. "It is denominated cotton ground, from the circumstance of that plant being always cultivated upon it. It is the regur soil of the ryuts. It forms large plains throughout the whole of the Deccan; some of them sufficiently extensive to bring to mind the descriptions given by travellers of the Pampas of South America, or the steppes of Russia." Dr. Christie considers the soil to have originated from the disintegration of the trap rocks.

Captain Newbold proceeded westerly across the Mahratta Country, following the right bank of the Gutpurba to the falls of Gokauk having the Kolapore territory to the right. He does not consider regur to be the detritus of trap rocks, nor to have a "fluvatile origin." Its appearance in the Ceded Districts watered by the Tumbuddra, Pennaur and Hogri rivers, none of which touch the trap formation, militates against the first, and the fact that it is seen covering vast flat plains like seas, hundreds of miles from the banks of great rivers, is conclusive against the second.

On the south bank of the Gutpurba are some low hills running E. S. E. composed of breccia, and from these hills to the Sitadonga hills a plain covered with regur extends. The hills at Badamy and Gujunderghur are composed of sandstone. Beyond these hills through which the Gutpurba finds its way occurs the plain of Bagulcotta. It continues west to Kulladghi. At Bagulcotta a pale buff-coloured limestone occurs that might be applied to lithographic purposes. Talicotta is the most promising locality for lithographic limestone. About a mile from Kulladghi are slate quarries. They yield hones, roofing slates, slate pencils, and huge blocks for pillars of temples, Hindoo idols, &c.

At Hirasillaky five miles from Kulladghi are iron mines. The metal sells at from two to two and a half rupees the pukka maund of forty-eight seers. Land carriage is readily procurable.

The report here describes the geological formation of the country between Kulladghi and the falls of Gokauk.

The Gokauk and Cotabanghy hills form the eastern flank of the Western Ghats and run in a parallel direction. They are entered from the east by a picturesque gorge through which the Gutpurba emerges. The falls are about three miles and a half to the east of Gokauk. The road lies along the bottom and side of this defile on the right bank of the river which here varies in breadth from ninety to three hundred yards. "The Gutpurba, a little above the fall, is apparently about 250 yards across, but contracts to 80 as the brink of the chasm is approached; consequently, the density and velocity of the watery mass is much increased; and it hurries down the shelving tables of rock with frightful rapidity to its fall.

The fall over the face of the precipice seems slow and sullen from the velocity of the surface water of this rapid, and from the great denseness of the body; and it plunges heavily down with a deep thundering sound."

The falls are 178 feet in depth on the cliffs near the falls; on the right bank of the river is a small group of Hindoo temples, dedicated to Siva.

From the falls of Gokauk to the cantonment of Belgaum about $34\frac{1}{2}$ miles, the route is nearly south west across an elevated table-land sloping to the eastward, covered with alternate bands of red and black soil and intersected at Padshahpoor, which is about $11\frac{1}{2}$ miles from the falls, by curvilinear spurs and outlying hills. About a mile to the north east of Belgaum another sheet of trap is entered upon, it continues unto Baugwari, where the edge of the trap is seen reposing on the hypogene schists at the base of the trap hills close to the village.

From the banks of the Malpurba to Darwar, a direct distance of twenty-three miles, the country is hilly and picturesque. The soil covering this tract of country is usually reddish, and the result of the decay and washing of the neighbouring rocks. The rocks composing the hills are schists passing into slates and shales.

South of Darwar to the Mysore frontier near Bunwassi and Chundergooty the face of the country presents a plain diversified with a few smooth conoidal hills. The soil is reddish and alluvial, and is in some directions intersected by belts of cotton soil. Towards Bunwassi quartz rock prevails with greenstone dikes. A little to the south of Bunwassi the lofty rock of Chundergooty in Mysore, a mass of granitoidal gneiss divided by vertical and almost horizontal fissures rises from the schists. From Bunwassi E. N. E. to Savanoor the schists continue. They are intersected by dikes of greenstone accompanied by positions of "kunker." Near the dikes crystals of liver and

brass coloured iron pyrites are scattered throughout the structure of the schists, and cotton soil alternates on these strips with red clayey alluvial soil.

Near Lackmaisir occurs a calcareous rock similar to the breccia di verde of Egypt which is susceptible of a high polish. From Gudduck east to the Ceded Districts the formations consist of gneiss, hornblendes, slate and granite. The Kupput hills are principally composed of hornblende and chloritic schists and mica slate. The beds of the Dhoni rivulet which rises in these hills contain gravel and sand in which gold dust is found, associated with magnetic iron sand, menaccanite iron ore, grains of platinum, &c. Manganese is also found in considerable quantities. Tippoo here excavated pits for gun flints.

The report concludes with stating the geographical position and extent of the various rocks of the South Mahratta Country. It is mainly the same as that by Dr. Christie, already summarised.

GEOLOGICAL REPORT ON THE BAGULKOT AND THE ADJOINING TALOOKS.

THE district described by Lieutenant Aytoun is included between the rivers Kistnah and Mulpurba on the north, south and east, and a line drawn through Gulguleh, Kulladghee and Badamy on the west. Its outline is nearly triangular, the two rivers forming the sides and the line drawn through Kulladghee the base. Its greatest length north and south is 50 miles, and its greatest breadth east and west 45.

In the district are four sandstone ranges which bend in the direction of the dominant strike of all the rocks from W. N. W. to E. S. E.

The ranges, extending 16 miles to the south of Kutteegeeree, are separated by valleys, in which limestone and schistose rocks are developed, in general covered with black cotton soil.

The first sandstone range extends from Beelgee to Gulguleh and rises to the height of 100 feet. The sandstone rests on grits and conglomerates and these last on granite. About three miles from Beelgee on the road to Gulguleh, trap makes its appearance.

The second sandstone range is about 180 feet high and is composed of sandstone and conglomerate.

The third sandstone range is composed of a jasper conglomerate and a quartzose sandstone. The limestones in the

immediate vicinity of the range are impure, but become purer near the fourth sandstone range.

At Guddunkeeree there occurs an uncommon variety of breccia composed of schists and limestones in a base of calc spar.

In the valley of Kulladghee the rocks are extremely confused. The report however proceeds to describe them and mentions that at Alyoondoe are some fine coloured marbles, coloured green principally with chlorite, and in the vicinity a fine-grained lithographic stone.

THE BASIN OF THE MULPURBA.

LIEUTENANT Aytoun in a second paper describes the basin of the Mulpurba in Belgaum. He mentions that it is bounded on the west by the last "ridge of the great overlying trap formation of the Deccan. On the north by the sandstone hills of the Gokauk belt, which here sends an offset to the south, meeting an elevated belt of schistose rocks which forms the eastern boundary.

The river Mulpurba in its course to the north-east has forced a passage through the sandhills near Pursgurb.

The trap range on the west is about 400 feet high." The rocks met with are the hypogene schists principally. They have all been subject to the disturbing and metamorphic effect of igneous agency, and trap and sienite are developed in many places through the basin.

The report conclude with a description of the Kupputgood hills or gold district. The nucleus of the hills in the immediate neighbourhood of Dumul is granite. The main range is there about 1000 feet high. The gold is found amongst the chlorite slate hills to the west of Dumul.

The chlorite is highly quartzose and indurated. The development of iron pyrites is exceedingly great, and it might be imagined that the small quantity of gold now found in the nullahs was derived from this source. Pepites of gold of a pear shape have occasionally been found. The gold in Australia, when found in small pieces, has sometimes this appearance.

GEOLOGY OF CUTCH.

THE province of Cutch is situated between the 22° and 24° of north latitude and 68° and 70° of east longitude. It con-

tains about 6,500 square miles independently of the Grand Runn which bounds it on the north. The province is hilly and rocky, with the exception of the southern coast which is a "dead flat covered with a fine rich soil." There are no constant streams, the river courses being merely channels for conveying the periodical floods to the seas. They contain at other times only detached pools.

Mr. Grant divides the country into eight distinct formations:—
1. Sienite and quartz rock. 2. Sandstone and clay with beds of coal. 3. Red sandstone. 4. Upper secondary formation. 5. Nummulitic limestone and marl. 6. Tertiary strata. 7. Alluvial deposits. 8. Volcanic and trappean rocks.

The only good example of sienite occurs at a hill called Calunja near the town of Nuggur in Parkur. Quartz rock is principally developed near the town of Mhurr.

Sandstone and clay occupies a considerable portion of the country as may be seen from the map that accompanies the report. The centre of the province is dotted with hills, the smaller of these are composed of a very ferruginous sandstone. Iron ore is principally extracted near the town of Doodye. In extracting the metal, "layers of very small pieces are disposed alternately with others of charcoal, in a rude open furnace, and exposed to the blast of two small bellows made of sheepskins. The metal, when fused, falls into a hole at the bottom of the furnace, whence it is transferred to an enclosed furnace, and subjected to similar blasts, until brought to a white heat, when it is taken out and beaten into a bar. No flux of any kind is used."

Coal is found in this formation and at Bhooj a stratum has been discovered eighteen inches thick. This bed was worked for some time, but the quality of coal extracted was bad. Near Seesaghud boring operations have been conducted but no coal was found. Near Mhurr occur beds of variegated marl and blue clay. From both of those alum is extracted. The manner in which the alum is prepared is simple. The earth in which it is discovered is quarried and exposed in heaps to the sun and air for about five months, "during which it burns spontaneously. It is next laid out in little beds similar to those of a field prepared for irrigation, and it is watered by a small stream for ten or fifteen days, by which time the aluminous matter accumulates into semicrystalline plates. This substance is boiled in water for about seven hours; after which, a third, or one half, by weight, of potash is added, and it is again boiled for a few hours, according to the strength of the ley. It is then poured into large open vessels, where, after settling for some time, it is washed, and the liquid drawn off, leaving an impure crystalline sediment. This is once more boiled, and when it arrives at a proper state,

which is learned by practice, it is poured into large earthen vessels with a small mouth, and sunk into the ground to prevent their breaking. After a time, the vessels are dug out, broken to pieces, and a lump of pure alum extracted. Six or eight measures by weight of alum are produced from ten measures of the substance from the irrigated beds, and four or five measures of potash. It is not so much esteemed in the Bombay market as that brought from China, on account of its yellow tinge."

The red sandstone formation occurs to the south of the coal series, and is separated from it by a low range of hills about six miles broad, composed of basaltic rocks and porphyry; associated with the red sandstone are beds of clay. One of these beds is aluminous and has been burning spontaneously for a long time. This bed has never been worked.

The most characteristic fossils found in the "upper secondary formation," which occupies hollows in the sandstone and coal formation, are ammonites. Eleven species have been collected.

Nummulitic limestone and marl extends from Luckput to a plain between the villages of Wage-ke-Pudda and Eyerai, about 30 miles to the southward. The stone has the appearance of chalk and the surface soil is composed entirely of small fossils lying loose, called Luckput sixpences. The most characteristic fossils are nummulites, fascicolites, echini, galerites, clypeasters and spatangi.

By the tertiary strata of Cutch is meant all that portion of the province that contains fossils of the tertiary period. They consist chiefly of a hard argillaceous grit covered by beds of pebbles or conglomerate. The principal deposit of fossil shells is at the village of Soomrow. The tertiary beds reach, in one place, to the town of Mhurr, a distance of 30 miles from the sea, and extend in a belt of a third of that breadth throughout the whole southern coast of the province. The alluvial deposits consist entirely of detritus washed from the hills, or of land recovered from the sea by the blowing up of sand. At *Mandavee*, an old ruin formerly the quay is now about three miles inland, and even now a considerable space composed of loose sand intervenes between the town and the sea. This space is continually increasing. "The same operation is in progress at places separated from the main waters of the gulf by small creeks.

Some of these inlets penetrate six or seven miles from the coast through a tract covered for miles in extent with shrubs. At low water these plants are exposed to their roots; but at high tides merely their upper branches are visible, so that the boats sail through a marine forest, the sails and yards frequently brushing against the boughs of the trees."

The district composed of volcanic and trappean rocks is one of the principal features of the geology of Cutch. The principal mass of igneous rocks lies towards the southern department of the province and forms a group of hills called the Doura range. The northern parts of the "range have, for the greater part, a flat, smooth outline; but in the interior of the group are many clusters of small, conical hills, arranged round a circular space enclosing a kind of hollow." Of the detached hills of volcanic origin, the principal is called the Denodur. It is situated near the shores of the Runn and is the largest and highest hill in the country. An irregular crater which is still visible leaves no doubt of its igneous origin.

The report contains other examples of the elevatory effects of volcanic action and mentions some igneous outbursts of apparently a very recent period at Wage-ke-Pudda and in the neighbourhood of Mhurr. The first view of that at Wage-ke-Pudda is very striking. It includes a space of about two square miles "blown out into a flat basin, the sides being broken into fissures with craters, ravines, and hollows; and the interior, or bed of the basin, interspersed with hillocks and cones of every variety of colour, black, red, yellow, and white, and with patches of cinders, similar to the refuse of a furnace." The whole looks as fresh as if the igneous agents were still in operation.

The paper concludes with a description of the Runn, which Capt. Grant considers to have been once covered with salt water.

To the report is appended a systematic list of organic remains.

THE GEOLOGY OF THE COUNTRY BETWEEN HOSHUNGABAD AND NAGPOOR.

THIS paper is merely a summary, it was written by Lieutenant John Finnis in 1829.

The formations between Nagpoor and Hoshungabad "are trappean, primitive, transition, and secondary, and much intersected by veins of greenstone and trap."

The formations may be divided into five principal divisions.

The first division includes "the tract of country lying between Nagpoor and Baitool to the south bank of the Machna river.

An unvaried formation of trap occurs during the whole of this distance, and the face of the country is covered with round waken boulders."

The second division comprises the space within the Southern and Northern Gháts in the Machna. On the north bank of the

Machna trap no longer appears; it is followed by strata of quartz and mica schist. .

The third division includes the country between the Machna river and the nulla, one and a half miles south of Keeslah. Here all traces of granite are lost and sandstone becomes general. The sandstone extends to Keeslah. About four miles from the Machna and three miles from the Bhora Nuddee seams of coal are displayed.

The fourth division comprises the low range of hills between Keeslah and Putroda. These hills form a part of the great range of Mahadeo hills. Kunkurs, and a mica schist formation occur in this division.

The fifth division extends from Putroda to the Nerbudda at Hoshungabad. After passing through the hills a rich field of cultivation opens to view, and the rocks are lost under the deep alluvial soil of the valley of the Nerbudda. The report closes with a list of specimens collected in the several districts.

PERIM ISLAND.

PERIM island is situated in the Gulf of Cambay nearly opposite the estuary of the Nerbudda river. It is separated from the coast of Guzerat by a channel about 75 fathoms deep and 500 yards in width. The island, which is surrounded by an extensive rock reef steep on all sides but the south, is three miles in circumference. The highest point of the island is not above 60 feet above the level of the sea. The "Perim light" is about 102 feet above water mark. The island is composed of tertiary strata; the south south east end terminates in a cliff which exposes horizontal beds of puddingstone separated by a sandy clay.

In an experimental boring at the town of Gogah, of the 369 feet gone through, the uppermost 74 consisted of sand and gravel, "11 feet, stiff black clay; 6 feet, sand and clay; 10 feet, soft sandstone alternating with thin seams of different coloured clays; sand and gravel 13 feet, and, lowermost, a very hard siliceous sandstone 9 feet thick. The inferior portion of the section is composed of a great bed of dark clay, which has been penetrated down to 246 feet, containing pyrites and broken shells." The fossils that have been discovered at Perim are a species of dino-therium, giraffe, and boamatherium, besides other forms which prove that the clay conglomerates of the gulf of Cambay contain in them the remains of a very extensive and varied fauna. The fossils mentioned are described at length in the report.

THE CORNELIAN MINES OF BAROACH.

THIS paper was written in 1815 by Mr. John Copland of the Bombay Medical Establishment. The mines are in the wildest part of the jungle and no human habitations are within seven miles, on account of the tigers with which the country abounds. The miners reside at Neemoodra, where alone the stones are burnt. The mines are shafts working perpendicularly downward, about four feet wide and some 50 feet in depth. The soil is gravelly and consists chiefly of quartz sand reddened by iron and a little clay. The cornelian nodules weigh from a few ounces to two or even three pounds, and are scattered in the greatest abundance. Their colour is blackish olive, others somewhat lighter and others lighter still. A native informed Mr. Copland that the first would be black when burnt, the second red and the third white. The stones after they are collected are brought to the village of Neemoodra every evening, spread on the ground, exposed to the sun and turned every fifteenth day until the time of burning, which is only once a year, one month before the commencement of the monsoon. They are then put into round earthen pots about 14 inches in diameter "the bottoms of which having been taken out, and the pots inverted (mouth downward), the pieces taken from the bottoms are put inside, and placed over the mouths to prevent the stones falling out; in this state the pots are placed side by side in a trench of indefinite length, but of which the depth and breadth are about two feet, having a layer of five or six inches of dry goat's dung below, and the same above the pots. This is set on fire about eight o'clock in the evening, all the fuel is consumed before day break, when the pots are removed from the trench to the open air for the stones to cool, which requires about three hours; after this they are taken out of the pots, piled into heaps and chipped, as when taken from the mines, to discover their quality, and are finally thrown into a pit, where they remain till called for (more to be out of the way of thieves than as constituting any part of the operation.) From Neemoodra the cornelians are carried to Cambay by the merchants who come from thence, where they are cut, and formed into the beautiful and much sought after ornaments peculiar to the place."

GEOLOGY OF PARTS OF SINDE.

THE notes were written by Captain N. Vicary in a journey between Kurrachee and Sukkur.

The harbour of Kurrachee is protected by two rocky islets and Minora Point. Minora Point is connected with the Hala range, which exhibit in descending order conglomerate, clay and sandstone, upper bone bed, sandstone fossils, lower bone bed, coarse arenaceo-calcareous rock with spatangi; pale arenaceous limestone with hipponyces, nummulites and charoidæ, nummulitic limestone and black slates.

At present no river discharges itself into the harbour at Kurrachee, but there is every reason to think that at one time a branch of the Indus discharged itself there. The sea breeze is continually drifting dry sand into the harbour and filling it up, and on the land side the harbour is gradually filling up from the quantity of detritus carried into it by every flood of rain.

At Munga Peer, which is a basin enclosed by hills, there are two hot springs. The springs are about half a mile apart. The water is sweet. The northernmost is 124° Fahr. the other is 99°. At Luckee hot springs again occur, in one of these the water is highly mineral, and contains sulphur combined with calcareous matter and some salt. A dense scum is constantly rising to the surface of the pond over the spring and some Sindees, constantly in attendance, skim it off, and take it away in order to obtain the sulphur that it contains. The water from this spring has a great reputation amongst the natives as a remedy in cutaneous diseases. Near the spring in a perpendicular face of rock is a hole about three inches in diameter. Some years since an inflammable gas issued from this, it became ignited and was known by the Sindees under the name of Puri-ka-Chiragh or the Peris Lamp.

Near Peeth at the centre of the Hala range is another hot spring. The water smells of sulphuretted hydrogen. On the left bank of the Gauj fossil bones were discovered in vast abundance. They were crocodilian.

THE BELOCHISTAN HILLS.

THE hill country, the subject of this paper by Captain Vicary, extends from Shahpoor on the western side to Goojeroo on the east a distance of 90 miles, and from the sandstone ridge bordering the desert to the Murray Hills in a northerly direction about 50 miles.

The strike and direction of the ranges and of the valleys is nearly east and west and the mean dip southerly.

From the low sandstone range bordering the desert to the Murray Hills there are seven parallel ranges of mountains.

In the second sandstone range which extends to an unknown distance in an easterly direction the Jullock, Gundava and other passes are situated. The lower ranges of mountains nearest the Murray Hills and parallel with it are formed of a nummulitic limestone. The Murray hills rise to about 3,500 feet above the level of the sea. They present a precipitous escarpment to the southward and the stratification is nearly horizontal. The report closes with a description of the fossils from the nummulitic limestone of Beloochistan. It is followed by a notice by Dr. Fleming of the Geology of the Sooliman range.

THE GEOLOGY OF SINDE.

THERE are two papers on the geology of this province, one is by Mr. H. B. E. Frere and the second by Mr. H. J. Carter. The first is merely a letter addressed to Colonel Sykes announcing the despatch of certain tertiary fossils, chiefly bones of mammalia from the hills south west of the Munchar lake, and the other is more particularly on the larger forms of fossilised foraminifera in Sinde.

The description of the foraminifera passes from the "simple nautiloid form of Operculina, in which the spire and septa are all visible exteriorly, to Assilina, where they are more or less obscured in the centre; thence to *Nummulina* where there is an addition of compressed chambers on each side the central plane, expanding above and below into the globular form of *N. obtusa*; and elongating in *Alveolina*. Returning to the subgenus of *Nummulina*, which presents the 'reticulated structure' above and below the central plane, we pass on to *Orbitoides*, where the characteristic spiro-central plane of the nautiloid forms of Foraminifera is beginning to disappear, and then to Orbitolites, where it is entirely lost; ending with *Cyclolina*, which bears the same relation, in the simplicity of its structure to *Orbitolites*, that *Operculina* bears to it."

Plates accompany the report.

GEOLOGY OF THE SOUTH EAST COAST OF ARABIA.

THE information continues in this Memoir by Mr. H. Carter was compiled chiefly from information obtained by Captain Sanders and Lieutenant Grieve.

The report although it only mentions the south east coast of Arabia commences at the straits of the Persian gulf, from thence proceeds to Ras el Had, then follows the south eastern coast and its islands to the straits of Bab-el-Mandeb, and crossing over to Berbera pursues the African coast as far as Socotra. The report commences with a geographical description of the coast.

The mountains which form the promontory of Ras Massandam on the western side of the Persian gulf suddenly rise from four hundred feet, the height of a small island called Massandam, to two and three thousand, and as they progress south eastward to six thousand feet above the level of the sea. They are this height at Maskat where they are called the Jibal Fallah. They terminate at the "Devil's Gap," and are there 6228 feet high. Between the mountains and the coast is a plain called Batana, which extends to within 14 miles of Maskat. From the southern boundary of the Devil's Gap, the outlet of the great valley that ramifies up among the mountains of Oman, a group of mountains extends towards Ras el Had.

The eastern extremity of Arabia is truncated and presents a coast facing due east of about 20 miles in extent, with a sea cliff about 100 feet above the level of the sea.

The sea-cliff ceases after the eastern extremity is turned and the land sinks to the level of the sea.

"After Masira, the mainland begins to rise again, and a sea-cliff first commences at a Cape called Ras Kabret in 19° 57' N. lat. and 57° 48' E. long. The land, however, on the western side of the bay, called Ghobat Hasish which is a little to the north of Ras Kabret, is 80 feet above the sea, and goes on increasing in height, until it attains an altitude of 480 feet at Ras Markas, which is close to Ras Jazirah. On account of the coast here running north and south for 100 miles, and therefore obliquely to its general direction, which is NE. and SW., we not only see that the land rises towards the SW., but that it rises also towards the south.

From Ras Jazirah, where the cliff, from its height and whiteness, very much resembles that of the south-east of England between the North Foreland and Beachy Head, the coast gradually increases in elevation to 800 feet which is its height about the centre of Curiyah Muriyah Bay; but as we approach the south-western horn of this bay, its outline and horizontality become disturbed, and suddenly it attains an elevation of 4,000 feet, which it preserves, more or less, on to the Yaffai mountains, at the Straits of Bab el Mandeb.

Opposite Curiyah Muriyah Bay are five small islands, which, in point of size, are hardly more than the tops of so many mountains; they are about twenty miles off shore, and the largest and

highest, which is Hallaniyah, has a point 1,645 feet above the level of the sea. There are also two or three still smaller, much further on towards Aden, viz. opposite Hisn Ghorab, about sixty miles south-west of Makalla. These are all the islands on this coast.

The chief features of the land between Curiyah Murivah Bay and the Straits of Bab el Mandeb are, that here and there it is more or less tabular in its outlines; here and there more or less broken into mountainous peaks; here and there more or less interrupted by ravines; five times by great valleys; and once (in the Bay of El Kammar) by a tract of low land forty to fifty miles in breadth, which, running SW. and NE. between the mountainous ridges of which this elevated coast is composed, thus separates them longitudinally as far as the eye can reach.

Throughout, the high land is more or less scarped upon the sea or the maritime plain, and the latter seldom more than ten miles in breadth. Its colour is for the most part white, particularly where it is weatherworn, but here and there black or brown, where it is confronted by, or mixed with, rocks of an igneous origin."

With regard to the geology of the south east coast of Arabia the first thing that strikes the enquirer is the continuity of the limestone formation, which extends a distance of 1125 miles. The next point of interest is the eruption by elevation and outpouring of igneous rocks along the great line of fracture that forms the coast, and lastly the elevation of the land from 4000 to 6000 feet above the level of the sea that half brought to light other formations lying beneath the white limestones.

The igneous rocks comprise all the principal kinds and most of the varieties, by far the greater part of them are hypogene, the rest volcanic. The presence of gneissic strata in the granite at Marbat shows that some "of this rock is at least secondary; and being mixed up with limestone in the same neighbourhood, identical, but for the changes which such formations undergo when similarly situated, with some of the white limestone series above, further shows that there is granite here, which may be of still later date even than that enveloping the gneiss." The gneiss itself was not seen by Mr. Carter in situ.

On the north eastern part of the coast dioritic and euphotide rocks prevail. These at Masira and Ras Jibsh envelope jaspideous strata. At Maskat, Masira, Marbat, and perhaps Makalla, jaspideous strata are overlain by nummulitic strata, but are never covered by granite or dioritic rocks.

On the south eastern part of the coast there occurs a chain of volcanic rents up to and including Aden, these extend through every-

thing and from them extends an issue of black basalt and other volcanic rocks which cover in different places the maritime plain.

Throughout the coast the original localities of the eruption of igneous rocks appear to have been the principal ones of the subsequent eruptions and outpourings, with the exception of the volcanic rocks, which have come to the earth's surface, where the older igneous rocks do not appear.

The igneous formation Mr. Carter considers to admit of three groups:—1st. The strata of which the highest scarps are composed. 2nd. The nummulitic or compact littoral deposit on the shores especially of Dofar. 3rd. The miliolitic or loose littoral deposit and 4th, the recent littoral deposit.

The first group admits of three divisions. The first or uppermost includes the white limestone series, which extends from the summit of the table land to the commencement of the coloured argillaceous strata. It consists of white calcareous strata of different degrees of hardness and fineness, and is more shelly above than below, and throughout is more or less charged with thin foraminifera. In some parts flints are imbedded. Towards the summit *Cyclolina* and *Alveolina* abound, with bivalves and univalves. Mr. Carter regrets that he cannot state more of the middle part of these strata. The lower most are more or less magnesian and in some parts dolomitic.

The second division comprises the coloured argillaceous series, estimated at 300 feet at Marbat, 175 feet at Ras Sejar and 1,000 feet at Ras Fartak. It consists of red, blue, green and yellow argillaceous strata, sandy shales, and impure limestone in which a red colour is predominant. It contains "in addition to *Orbitolina*, throughout, but most numerous in the lower part, species of *Echinodermata*, *Isocardium*, *Pecten*, *Plagiotoma*, *Exogyra*, *Ostrea*, and *Ammonites*, probably all of the Cretaceous Period."

The third and last division of this group is the micaceous sandstone of which Mr. Carter saw so little that he can only state that it is of great thickness, and though laminated in some places is for the most part massive throughout.

At Marbat it is usually of a "ferruginous yellow ochreous colour" and at Ras Sejar its upper part, the only part exposed, is of a light greenish blue colour, veined here and there with white quartz.

The nummulitic series is seen best at Maskat, on the island of Masira, between Marbat and Ras Resat and at Makalla. At Maskat and Masira it rests on dioritic rocks and euphodite, at Marbat and Masira on the same kind of rocks with granite, presenting at all these places gypsums, and between Marbat and Resat on compact limestone without gypsum.

At Maskat and Masira it consists above of a yellowish compact limestone, pregnant with small foraminifera, below this shells abound and below this corals, then arenaceous limestone, pure sand and conglomerate.

As another part of Masira, on the island of Hammar el Nafur and at Ras Kariat it rests on clays.

Between Marbat and Ras Resat it consists of compact shelly limestone, with coralline limestone below followed by limestone conglomerate.

Mr. Carter was unable to detect *Alveolina* in these deposits.

The third group is chiefly characterised by its loose structure. It is not only met with on this coast but extends to the peninsular of Kattywar.

From the foregoing data Mr. Carter tabulates the aqueous strata at Maskat and on the south east coast of Arabia.

SUMMARY OF THE GEOLOGY OF INDIA.

THIS summary was written by Mr. Carter in 1853, and is reprinted from the Journal of the Royal Asiatic Society. It professes to give a short summary of all the principal facts and conclusions at which an attentive study of the observations of others, and his own experience have enabled him to arrive.

The portion of India summarised in this paper "is comprised within the Ganges and Jumna on the N. E. the Indus and Sutlej on the N. W. the Bay of Bengal and Arabian Sea respectively on the E. and W., and Cape Comorin on the S.; cutting off, however, that angular portion which is N. E. of a line extending from Delhi to Ferozepore, as this would entail a description of the Geology of the Sub-Himalayan range."

Within this tract are representatives of all the Geological series of Europe from the Oolitic period down to the present time, with metamorphic strata and plutonic and volcanic rocks in abundance.

The Oolitic deposits are the most interesting. They contain the coal beds of India iron ore, and a very fair lithographic limestone. In their metamorphic state they appear to afford the white marble of India, which together with the red coloured sandstone another part of the series, form the Taj Mahal at Agra and the sandstone, the material of all the principal buildings of the towns on the Jumna, from Mirzapore to Delhi.

"At Ajmeer and elsewhere the same sandstone, apparently metamorphosed, yields lead and copper; copper is found in the shales also of this series; serpentine in Behar; steatite (potstone) in

many places ; magnesite near Jubbulpore, &c. and the researches of Captain Franklin and Jacquemont in Bundelkund, and Voysey in Southern India would seem to show that the original conglomerate, if not the real bed of the diamond, almost invariably accompanies the Oolitic series ; while the late discoveries of the Rev. Messrs. Hislop and Hunter in the neighbourhood of Nagpore have shown that these deposits abound in by far the most interesting fossils that the interior of India has yet afforded.

The so-called cornelian mines, again, at Rattanpore, about forty-two miles inland from the mouth of the Nerbudda, would appear to be in an old beach, chiefly formed of rounded flints from amygdaloidal rocks."

The report here goes on to enumerate the different formations with the districts in which they occur.

The sedimentary and igneous rocks of India may be thus tabularised :—

PROVISIONAL TABLE OF THE IGNEOUS AND SEDIMENTARY ROCKS OF INDIA.

POST-TERTIARY,	XIII. RECENT.		Deposits now taking place.		
		XII. { Post-Pliocene. { Marine, ... { Fresh-water, {	{ Sands, Shells, and Conglomerates. Upper Blue Clay. Kunkur (Traverin.) Regur. Kunkur.		
	XI. { Pliocene, {	{ Marine, ... { Fresh-water, {	{ Semi-consolidated or loose calcareous or siliceous Sands, Grits, Shells, and Conglomerates. River Conglomerates. Old Kunkur.		
		{ Marine, ... { Fresh-water, {	{ Solid, coarse, shelly Limestone. Oyster beds, Calcareous, argillaceous, quartzose or sandy Conglomerates. Lower Blue Clay. Ossiferous Conglomerate.		
TERTIARY, ...	IX. { Miocene, { Fresh-water, {		Intertrappean Lacustrine Formation.		
	VII. { Eocene, {		Nummulitic Beds and White Marl.		
	VI. { Cretaceous, { Marine, ... {		{ White Limestone, Arabia and Sind (1,400 feet ?) Upper Greensand and Gault, (Albien, D'Orbigny), Trichinopoly and Verdachellum. Lower Greensand (Neocomien, D'Orbigny) Pondicherry.		
	V. { Oolitic, { Fresh-water, {		{ Diamond Conglomerate ? Punna Sandstone. Katra Shales, ... { Fresh-water ? { Shales. Limestone. Coal. Marine, ... { Pondicherry.		
PRIMARY, ...	IV. { Cambrian and Silurian (McClelland.) {		{ Tara Sandstone. (Old Red ? McClelland.) Transition Gneiss, with micaceous and hornblende Schistose Beds. Newer Clay Slate, with quartzose and steatitic Sandstone Beds.		
	II. { Metamorphic Strata {		{ Gneiss. Mica Schiste. Hornblende Schiste. Clay-slate. Granular Limestone.		

X.

Trappean Effusions, 2nd Series.

VIII.

Trappean Effusions, 1st Series.

(Trappean Effusions ?)

Eruption of Felspathic and Hornblende Rocks.

III.

Eruption of Felspathic Rocks.

I.

Primitive Plutonic Rocks.

The report contains a diagram in explanation of the table.

The theory of the geological formation of India is the following :—

“1st. That the Oolitic series, which appears to contain the coal beds of India, was deposited by rivers flowing from the north.

2nd. That the marine beds of this series (indicated by their shelly nature), at the southern extremity of India, and in Cutch, seem to point to the outskirts of this delta, or the margin of pure salt water during this period.

3rd. That this delta, viz. the greater part of India, was raised above the level of the sea before the Cretaceous and Nummulitic Periods commenced, while its eastern and western borders, extending to the Himalayas on one side, and in the direction of Sind and Beloochistan on the other, still remained under water.

4th. That the deposits of the Cretaceous and Nummulitic Periods, which now form part of the subranges of the Himalaya mountains, and the Hala range of Sind, &c. were formed and raised above the level of the sea, leaving a gulf on each side, one in the present course of the Ganges, and the other in the course of the Indus rivers.

5th. That the Miocene and Pliocene deposits were formed in these gulfs, and were also raised above the level of the sea, causing the latter to retreat almost to its present margin.

6th. That the alluvia of the Ganges and Indus were deposited.

With reference to the advent of the trappean effusions, it would seem—if the coal formation resting on ‘secondary trap’ in the Rajmahal hills should hereafter prove to be a part of the Oolitic deposits, as Dr. M’Clelland supposes, and also to have been deposit on this trap,—that the Trappean Period extended from the deposit of the Oolitic series down to the breaking up of the Miocene and Pliocene deposits, inclusively.

The diamond conglomerate would, then, have been formed after the commencement of the trappean effusions; as it rests upon the Oolitic series the deposits of the Intertrappean Lacustrine formation seem to indicate a long interval of volcanic cessation previous to the outpouring of the basalt, which overlies them in the great trappean district.”

With regard to the coal of the Oolitic period Mr. Carter quotes the opinions of Mr. Ritchie to shew that it will beat the English coal of the carboniferous period out of the market. Mr. Ritchie states :—“ I consider that it will be a valuable coal for steam purposes. At the mint, and also at this company’s workshops in Calcutta, it has been converted into coke nearly equal to that from England, and costing considerably less.”

The summary concludes with a list of authorities from which the information contained in it has been derived.

POLICE IN BENGAL.

Blue Book, dated 20th July, 1857.

On 14th May, 1857, the Government of India submit to the Court of Directors their views on the reform of the Police. They are of opinion that each Lieutenant Governorship should be treated on its own merits, and that reform is most urgently needed in the Lower Provinces. They therefore confine their views to the Lieutenant Governorship of Bengal. They are unanimously of opinion that the appointment of one Police Commissioner for the whole of the Lower Provinces is not expedient, and that the Commissioners should exercise authority over the Police as well as other branches of the Executive. Mr. Peacock alone is of opinion that the Revenue Commissioners are unnecessary, and therefore proposes to abolish seven out of eight Commissionerships, and to appoint two or three Divisional Commissioners of Police. They consider also that a moveable corps of Military Police should be attached to each division, usually employed in station and escort duties, and ready to assist the civil police in case of need. They agree in the proposal to increase the pay of the Police, are unanimous as to the necessity of increasing the number of Deputy Magistrates, and submit the papers to the Court before taking any further steps.

On 28th April, 1854 the Governor of Bengal submits to the Government of India his views on the Police. The first error has been the separation of the offices of Magistrate and Collector, which has left one class of officers, the Collectors, of mature standing, highly paid and with very little work, and another class, the Magistrates, inadequately paid, with very heavy work, and without sufficient experience. "Those who are acquainted with the details of the system are aware that some explanation may be given of what appears, to many, a total want of all training throughout its different branches. But when people, not acquainted with the details, are told that a young civil officer, after being for some time an Assistant, when he is nothing in particular, is made a Magistrate; that after a few years, quitting the Magistracy for the revenue branch, he becomes a Collector; that after a few more years his next step of promotion takes him from revenue duties, and makes him a Judge; that if he be a

man of ability he will probably, from a Judgeship, be moved to the office of Commissioner of Revenue; and that the same ability will, in all probability, next promote him from a Revenue Commissionership back to the judicial bench in the Sudder Court,—when people hear that a civil officer thus oscillates through his whole career between executive and judicial duties, and that each step he gains is one which does not tend to fit him for the step that follows after—when people hear all this, what wonder can there be that the administrative system is condemned off-hand and that all the evidence given in explanation before Committees of Parliament, and then buried deep in folio blue books, wholly fails to remove the ill-impression that has been produced?” His Lordship considers that the true theory of government in India is the entire subjection of every executive officer in a district to a Commissioner at its head. “Even as regards judicial officers, His Lordship is inclined to think that a great advantage is gained by placing them in all matters of an executive nature directly under the Commissioner, just as the Sudder Court in its executive capacity is subordinate to the local Government and by leaving them independent only as regards their judicial decisions.” Applying this view his Lordship would equalize the salaries of the chief executive and chief judicial officer of every district, thus placing in each one Collector-Magistrate with control over the whole executive, and one Judge. “In every district there would be one or more covenanted Assistants (including Joint Magistrates and Deputy Collectors) who would be at the disposal of the executive chief, but available for employment under the Judge for some portion, say two days of the week, either as Assessors, or Assistant Judges, in the trial of cases before a full mofussil bench, or in the trial of small original suits, within the jurisdiction of a Moonsiff. The Assistants would thus gain experience in every department both judicial and executive; they would rise as they became qualified to the superior grade equivalent to that of Joint Magistrate and Deputy Collector; and at the end of ten or twelve years’ apprenticeship, they would be eligible for independent and responsible employment as either judicial or executive head of a district.” There would then be no further shifting from office to office, the best executive officer being usually appointed Commissioner, and the best judicial officer promoted to the Sudder. The standard of pay should be that of the Collector-Magistrate in the North-west. The present establishment is as follows :—

26 Judges,	...	...	...	at Rs. 30,000	Rs. 7,80,000
3 Magistrates and Collectors,	...	...	...	" 28,000	" 84,000
23 Collectors,	...	...	...	" 23,00	" 5,29,000
3 Collectors,	...	...	...	" 18,000	" 54,000
1 Magistrate,	...	...	...	" 28,000	" 28,000
25 Magistrates,	...	...	...	" 10,800	" 2,70,000
4 Joint Magistrates and Deputy Collectors,	...	...	...	" 18,000	" 72,000
4 Joint Magistrates and Deputy Collectors,	...	...	...	" 12,000	" 48,000
11 Joint Magistrates and Deputy Collectors,	...	...	...	" 8,400	" 92,400
100					Rs. 19,57,400

The future establishment would be

26 Judges,	...	...	...	" 27,000	" 7,02,000
30 Magistrates and Collectors,	...	...	...	" 27,000	" 8,10,000
22 Joint Magistrates and Deputy Collectors,	...	...	...	" 12,000	" 2,64,000
21 Joint Magistrates and Deputy Collectors,	...	...	...	" 8,400	" 1,76,400

19,52,400

With a special allowance of Rs. 3,000 a year for the Judge, and the Magistrate and Collector of the 24-Pergunnahs, on account of the expence of a residence at the Presidency, 6,000

Rs. 19,58,400

His Lordship explains the effect of this measure on the prospects of the service, and observes, that every man raised to high office will have had about seven years independent executive or judicial charge of a district.

A Note is added to the Minute, dated 3rd December, 1853. In 1836 a Committee recommended that the offices of Magistrate and Collector should be separated. 1st, because all energy was thrown into the revenue work. 2nd, because as Government could not wait for its revenue attention was given to that, to the neglect of police work. 3rd, because men of sufficient standing to be Collector-Magistrates were not active enough for police work. 4th, that the Collector in a permanently settled province has no connection with the agriculturists but such as renders him unpopular. 5th, that the Collectors are apt to call in the police to aid fiscal operations, and 6th, that if the offices are separated each officer will attend to his own work undistracted. Both Lord Auckland and the Court of Directors were opposed to the separation, but it went on gradually, till in 1845, "matters stood as at present, that is to say, the magisterial and fiscal offices were disunited every where except in the three districts of Cuttack, and in the independent Joint Magistracies of Pubna, Malda, Bogra, Bulloah, Fureedpore, Bancoora, Baraset and Chumparun." The result of fifteen years' experience has been unfavourable. There has been a grievous loss of power in maintaining a class of officers with little to do, but prohibited from rendering assistance in police matters, while the Magistrates have

been so inexperienced as frequently not to command the confidence either of the European or native community. "Under the present system, our Magistrates vary from eleven to five years' standing in the service. During that period, when between twenty-five and thirty-one years of age, they are charged with the preservation of peace and order, and with the security of life and property throughout large districts, the real representatives of the character and authority of Government in the eyes of the people, without any official superior at hand to control and guide them, or any but private and irresponsible advice to depend upon; and when at the age of thirty-one their experience is matured, and they have arrived at a period of life when the physical and intellectual powers are together in full vigour, they are transferred to another department of the service, for the special duties of which they have had little training, and that almost forgotten, and where their time is insufficiently occupied, and their energies rust until their turn comes for promotion to the judicial bench." The Secretary further remarks that it is impossible in a permanently settled for a Collector-Magistrate to call in the police to aid him in fiscal matters. He suggests that the opportunity should be taken to revise the arrangements of the service, and proposes the plan accepted and described by the Most Noble the Governor. A table is appended shewing the salaries of Civil officers in each district of Lower Bengal.

On 23rd November, 1854, Mr. Grant records his opinion on the proposed changes. Mr. Grant contends that the system of uniting the offices of Magistrate and Collector is not old, but new. They were united in 1830 or '31 and the experiment pronounced a failure in 1836. The old system was the union of Judge and Magistrate, which was only objectionable in principle so far as it combined the offices of prosecutor and Judge. That objection still continued to exist under the system of 1830, and will not be removed by the system proposed now.

"In 1836, with the offices of Collector and Magistrate united, the police of Bengal was felt to be amiss. Instead of 'any administrative reform,' which, going to the real root of the evil, would have corrected or alleviated it, what was done was, to place the two offices each in separate hands; after which change of system, of course, the police remained much what it was before. But because the disunion of the offices has done no good or little good to the police, have we any warrant for presuming that the reunion of the offices would do it any good? It is very true that we are pressed with the sense of police affairs in Bengal being amiss now. But what is the root of the evil? No one denies that police affairs in Bengal will continue

amiss, till an adequate constabulary force and trusty native officials in the Thannas are provided for it; till Bengal shall be put on an equal footing in this respect with the rest of India. Now no change of names, no shifting of offices will have any tendency to increase the constabulary force, or to give Bengal trusty native officials in the Thannas." What guarantee therefore is there that a Committee sitting six years hence may not undo all again? Mr. Grant does not deny that there is an objection to the inexperience of Magistrates. He only denies that the objection consists in the disunion of the offices. It sprung from the objectionable manner in which Government performed that task. They allotted the light task to a man on high pay, and the heavy task to the man on low pay. Mr. Grant had never heard "a practical objection to the present system which would not be avoided immediately and certainly, by the simple process of transposing the salaries of the two offices, of course with due regard to the public interests in making the appointments to each class of office." The arguments adduced in favour of the scheme from the analogy of other parts of India are unsound. In Bengal the Collector neither has nor ought to have any influence by reason of his office, moreover the wealth of Bengal makes a style of protection necessary which is not required in any other province, and as a simple matter of fact the Magistrates in Bengal, call them boy Magistrates or what you will are more zealous, often more capable, than the Collector-Magistrates pronounced inefficient twenty years ago. There seems no reason to expect a better result now. One-fourth certainly of the gentlemen who make decent Collectors would make very bad Magistrates, and would have been totally incompetent to the double office. Are one-fourth the districts to be entrusted to incapable men? "or are we to have in so many districts the old man and the young man, both in one and the same line of official subordination, the young man at the top, and the old man, until the expiration of his 35th year of service at the bottom?" For these reasons Mr. Grant would oppose the reunion of the offices.

Further though recognizing the excellence of the Governor's scheme, and especially that portion of it which contemplates the creation of provincial Judges, he still disapproves portions of the plan. Mr. Grant holds that the first object should be to dissociate the office of thief catcher and prosecutor from that of criminal Judge; when this end is accomplished the Magistrate and Collector will be found to have been raised too high. Even as it is the power of a Judge is five times as great as that of the Magistrate. "We ought, in my opinion, to attract the soundest heads we can get to this office of Judge, on which in Bengal,

as in all other wealthy and highly civilized countries, the prosperity of agriculture and commerce depends more than on any other single office. In thinking of this subject, we should think not merely of the fact of the wealth and civilisation of Bengal, but also of the cause of it,—the institution of private property in land. The reasons which have induced the wise English people to make their courts all in all, to convert their Exchequer into an ordinary tribunal of justice, and to make their ‘Collectors’ mere taxgatherers, have already operated to a notable extent in Bengal. I am all for progress in this direction. I protest against going backwards.” In a few years judging from experience under the new scheme it would be rare to see a Judge of capacity. It would be so difficult to get officers to work the Magistracy and Collectorate, and a bad officer in that position would be so troublesome that the refuse of the service only would be made Judges. The Government looks to the Magistrate and Collector, the people look to the Judge. Mr. Grant is unable to “support that part of the scheme which would place the Judge under the revenue and police Commissioner.” The Judge should be independent, but he is not independent while his decisions are subject to the control of the Commissioner in any respect. The remark applies still more strongly to the subordinate Judges. The Sudder Court alone is competent to superintend all interior judicial officers.

Mr. Grant proceeds to submit his own scheme. He believes the evil of modern reforms in Bengal to be the accumulation of officers at the Sudder station. He would therefore give every Moonsiff criminal powers up to the extent of three months’ imprisonment. The thannas should be reduced in size, and over every few a head thannadar placed. Over every few head thannadars, there should be a Deputy Magistrate selected from among the thannadars. The Sudder Ameens should be sent into the district with criminal powers say up to one year’s imprisonment, and the officer now called Magistrate, deprived of all judicial powers whatever, should remain at the Sudder station and watch over the whole of the police. Mr. Grant would adapt the arrangements of the service to this system. “I would make the Assistants work at first in the departments of revenue minor criminal justice, and *minor civil justice*. In these departments they would gain their first increase to 500 rupees. Afterwards they might either take charge of a subdivision or work on at the station, with higher powers in those three departments. At every station I would have an officer on 700 rupees of the grade now called a 2d grade Joint Magistrate, and Deputy Collector, as the Lieutenant of the Magistrate, and of the Collector; working

under both, and ready to assume temporarily the place of either." From thence he would rise either to a chiefship of Police or to a Magistracy. There should be three grades of pay Rs. 1000, Rs. 1500, and Rs. 2500 promotion being by merit. Men incapable of high office but capable of Collectorate work, would then be left on either of the two higher grades, and incapable men would not be made Judges. From both these offices good men should be selected to be Judges. "From both these offices I would promote the good men, and none others to be Judges. If any one objects that I make men Judges who have never been Judges before, I reply, that so must all Judges be first made. But if any one objects that I make men Judges who have not had the opportunities of acquiring in the course of their previous training the knowledge and practice best adapted to form a good Judge in India, I affirm the contrary and I join issue on that question. As the affirmative has been demonstrated over and over again by the greatest authorities on Indian subjects, I will not stop to argue it here. The real fact is that whatever mofussil office an Indian civil servant is in, he begins doing essentially the work of a Judge when he first quits College; and he never leaves off doing it till he takes his annuity." From a Judgeship the promotion would be to a provincial Judgeship or a Commissionership, and thence in the regular line. This Mr. Grant believes would prove a working plan.

On 26th October, 1854, the Secretary to the Government of Bengal submits an application for permission to unite the offices of Collectors and Magistrate in Bengal, as vacancies may occur. On 3rd January, 1855 the Governor General in Council advises that the whole question of the Police in Bengal should be submitted to the Lieutenant Governor of Bengal, as his office has come into existence during the discussion of the question. The permission requested is declined pending a decision of the question.

On 1st March, 1855, the Lieut. Governor of Bengal records his opinion on the objections to the reunion of Magistrate and Collector offered by Mr. Grant. His Honour considers that the measure may be taken alone, that it has no necessary connection with the other measures of reform, though proposed at the same time.

"I suppose that every body will agree with the Honourable Member of Council in desiring that the constabulary force should be as large, and the pay of the police as high as the nature of the service requires, and the Government finances can afford. But I do not see why this expensive improvement, whenever the Government may be in a condition to make it, should not be made just as easily under Collector-Magistrates as

under separate Magistrates; or what the change in the superior functionary has to do with the pay and numbers of the subordinates."

Even if the measure were contrary to sound principle it is all over India successful in practice. In Bengal especially no unsoundness in principle can exist, for the revenue is fixed, and the work of collection almost a mechanical routine.

"The question of the introduction or non introduction of the proposed measure seems to me mainly one of economy of power. We have Collectors whose duties are of a nature involving heavy responsibility, and requiring a certain maturity of discretion. They must, therefore, be persons of sufficient experience, and must be paid in proportion. Yet it is certain that their time is only partially occupied by the duties of their offices, and there is nothing in the nature of their duties which forms a reasonable objection to their employment as Magistrates. On the other hand, we have Magistrates overworked, and of immature experience, who, though they require naturally the immediate control of more experienced seniors, are practically very much left to themselves; and who nevertheless exercise functions upon the punctual and discreet discharge of which more of the happiness of the people depends than upon the conduct of any other civil officers of the Government. To give these duties, or (as is proposed) a large portion of them, to the older and more experienced functionary, for whom occupation is declaredly wanting, and to place the junior in immediate subordination to the senior, seems to me a proposition most obviously and necessarily arising out of the circumstances—most sound, expedient, and right."

The objection that a fourth of the service are incompetent to perform the double duties, is an objection to the constitution of the service. There will always be a certain number of incompetents and the only remedy is to supersede them. The Lieut. Governor is therefore heartily in favour of the proposed union.

As to the other changes His Honour assents to the proposal for a grade of chief provincial Judges, and objects to the equalization of the salaries of the Judge and Collector. He also objects to the plan by which the Judge would in certain portions of his work be responsible to the Commissioner. His Honour considers the plan proposed by Mr. Grant for the redistribution of the service too expensive. "My plan would involve scarce any change in the number of officers now employed, or in the amount expended but would slightly reduce both. I would make all the present larger Collectorships, 22 in number, Collector-Magistracies on 24,000 per annum. I would make all the smaller Collectorships, such as Monghyr or Beerbhoom and all the independent Joint Magistracies and Deputy Col-

lectorships such as Pubna or Malda, Collector-Magistracies on 18,000. The total number of these would be eleven. (This would accord with the principle of the Honourable Member's plan of gradations of Magistrates and Collectors.) The Cuttack Collector-Magistracies, which are also Salt Agencies, I would have as at present, viz., 3 on 28,000. I would have 22 Joint Magistrates and Deputy Collectors on the present salaries of Magistrates, viz., 10,800, and, as at present 11 such officers on the lower salary of 8400. My total of officers employed would be 96, and the expense 19,20,000." He agrees that the zillah officers should be scattered, and fully concurs in the expediency of increasing the pay of the Police. On 8th May the Hon'ble J. P. Grant corrects certain misapprehensions as to his meaning, and affirms that his plan would not be expensive, considers that the Darogahs are as a class bad, and that their pay ought to be increased.

On 8th May, 1855, the Honorable J. Dorin observes :—" With projects for fresh outlay constantly before us, and these appeals for the correction of the general administration of the country that can hardly be resisted, we find ourselves with an excess of expenditure over income largely increasing, and which in the present year, or rather I should say the year just past, is estimated to amount to no less a sum than two millions and three quarters sterling."

On 19th May, the Honorable General Low believes either plan would work well, provided Government in the event of the continued division of the offices can afford to give adequate salaries to both.

On 15th May, 1856, the Honorable B. Peacock records his opinion that the reunion of the officers of Collector and Magistrate would be inexpedient, as the principle is obviously unsound.

On 30th April, 1856, the Honorable F. J. Halliday, Lieutenant Governor of Bengal, gives his opinion on Police and Criminal Justice in Bengal. For a long series of years, "complaints have been handed down from administration to administration regarding the badness of the mofussil police under the Government of Bengal, and as yet very little has been done to improve it." For although the pay of Darogahs has been increased, and the enormous size of certain Magistracies reduced, still the "establishments do not comprise more than seventy Executive Magistrates, Covenanted and Uncovenanted, over four hundred and eighty-four Thannahs, being at the average rate of about seven and a quarter Thannahs to each Magistrate, a proportion much below what is requisite; and the distribution of even this number of Magistrates is extremely irregular." The

village police though always believed to be the basis of a good Police Administration, "are kept in a permanent state of starvation, and though in former days Magistrates battled for them with unwilling Zemindars and villagers and were encouraged by Government to do so, it has been discovered in later times that this is all against the Law; and Magistrates, contrary to the doctrine of earlier times, have been actually prohibited from interfering in favour of village watchmen, it being ruled that this is altogether an affair of the people themselves, who may pay watchmen or not, just as they think fit. Village watchmen are now declared to have no legal right to remuneration for service, and (the help of the Magistrate being withdrawn,) they have no power to enforce their rights even if they had any rights to enforce. Hence they are all thieves or robbers or leagued with thieves and robbers, insomuch that when any one is robbed in a village, it is most probable that the first person suspected will be the village watchmen." In 1842, Mr. Millet was of opinion that it was optional with the villagers to pay the village watchmen, and though the Sudder Court have since decided that the Zemindar is bound to fill up the vacancy, they are still divided as to whether they are competent to enforce fulfilment of the obligation by a fine. Mr. Bethune on 27th May, 1851, adduced some strong figures to prove the corrupt state of the village Police, "it appears that the whole number of Chowkeedars, (with the exception of six districts from which accounts had not been received when the table was compiled,) was 1,30,305, and, therefore, were they no worse than the rest of the population, the number of persons among them guilty of every kind of offence known to the calendar, at the rate of one in 1,219, would be under 107 annually, or 321 in the three years included in the return. What were the facts? The whole number of Chowkeedars dismissed for misbehaviour in those three years, instead of 321, is 1,130.

Of whom, for Murder and Thuggee, ...	...	...	19
Burglary, ...	...	...	39
Robbery and Theft, ...	...	...	357
<hr/>			
Total, ...	...	...	415

that is to say:—

• Nearly one-fourth more, in proportion to their number, for these heinous crimes, than were convicted in all the Lower Provinces of Bengal for all offences of every kind." On 11th July, 1853, the Marquis of Dalhousie suggested a bill which extended the system now applicable to towns in which a Covenanted Magistrate is stationed over the whole country. Mr. Peacock proved that such a measure would be an infringement

of the perpetual settlement; but observed that the villages were evidently by their constitution bound to support their watchmen. "With this view he suggested that a local investigation should be made in every village, throughout every zillah, of the liabilities to which the village is subject in respect of the maintenance of village police, in order to found thereon a legislative measure for the improvement of that institution. That investigation has now been completed."

The means of trying criminals however require as much improvement as the Police which "certainly do not command the confidence of the people." The people are singularly unwilling to prosecute partly perhaps from apathy but chiefly from dread of the police, and of the uncertainty of the proceeding in our Courts. This fear is well founded as it appears from the returns that of 14 burglaries committed only one is punished, and even in thefts the average of convictions to offences is three to eight. In more heinous cases which come before the Judges' Courts, the average of convictions is two to three of acquittals. And this although a very small proportion of heinous offenders are ever brought to trial.

One great cause of this evil is the inexperience of our Magistrates "whereas in 1850 the average standing of Magistrates was nine years and eight months, it had sunk in 1854 to eight years and five months, and is now, in 1856, so low as six years and ten months. 'In 1850,' says Mr. Grey, 'there were only two Magistrates below the standing of seven years. Now there are 15 such. The youngest officer officiating as a Magistrate in 1850 was of five years' standing. The youngest officer now officiating as Magistrate is of less than three years' standing.'" This evil is increasing. For these reasons the Lieutenant Governor would propose the following measures of reform:—

Chowkeedars.—The following important table shews how the village Chowkeedars are appointed throughout Bengal:—

Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chowkeedars.	Number of Houses to each Chowkeedar.	HOW APPOINTED.	HOW PAID.
PATNA.	Chumparun,...	3,578	1,81,881	3,809	48	By Gomastahs and head villagers.	Annually by grain ; some have from 5 cottahs to 20 beegahs of land each.
	Sarun,	4,347	2,10,425	5,926	36	Zemindars.	Ditto by cash, from 4 annas to 36 rupees, a few having cloths given them ; by grain from 2 to 24 maunds ; by land from 10 cottahs to 11 beegahs each.
	Patna,	3,908	1,32,122	4,380	30	Zemindars and villagers, confirmed by Magistrate.	Ditto by cash, from 8 annas to 36 rupees each ; by grain from 2 to 21 maunds each ; by land from 4 cottahs to 12 beegahs.
	Shahabad, ...	4,948	2,19,949	6,283	35	Zemindars or head villagers, or both.	Ditto cash, 4 annas to 36 ; grain 20 seers to 30 maunds ; land 10 cottahs to 24 beegahs each.
	Behar,	4,343	1,42,229	4,582	31	Landholder's omlah and the villagers.	Ditto cash, 12 annas to 36 rupees ; grain 2 to 25 maunds ; land 1 beegah to 5 beegahs each.
	Total,	21,124	8,86,606	24,980	—		

Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chow-keedars.	Number of Houses to each Chow-keedar.	HOW APPOINTED.	HOW PAID.
BHAGULPORE.	Tirhoot, ...	5,473	3,33,485	7,895	42	Zemindars and some by villagers.	Annually by cash, 1 rupee 4 annas to 45 rupees, or land 1 cottah to 2 beegahs each, and a few receive a little grain.
	Purneah, ...	5,267	2,45,181	7,841	31	Landholders or villagers.	Ditto cash, 12 annas to 36 rupees each; some receive a little grain.
	Monghyr, ...	2,642	1,32,514	3,086	43	Zemindars.	Ditto cash, 1 rupee 2 annas to 36 rupees; land 8 cottahs to 15 beegahs each.
	Bhaugulpore, ..	3,740	1,71,482	3,687	47	Ditto.	Ditto cash, from 8 annas to 57 rupees; land from 1 beegah to 20 beegahs each.
	Total. ..	17,122	8,82,662	22,509	—		

Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chow-keedars.	Number of Houses to each Chow-keedar.	HOW APPOINTED.	HOW PAID.
RAJSHAHYE.	Maldah, ...	1,950	91,817	1,568	58	By the head villagers.	Annually cash, 1 to 48 rupees each, some have grain.
	Dinapore, ...	8,517	2,05,051	5,592	37	Zemindars or head villagers.	Ditto cash, from 4 annas to 42 rupees each.
	Rungpore, ...	3,383	2,17,471	5,077	43	Some by headman, generally by zemindar's omiah, confirmed by the Magistrate.	Ditto cash, from 2 to 36 rupees each; in one thannah a little paddy is added.
	Bograh, ...	4,964	1,23,982	3,100	40	Head villagers, a few by the zemindars.	Ditto cash, from 1 to 36 rupees each.
	Pubnah, ...	3,526	1,81,811	3,611	50	Headmen.	Ditto ditto, 3 to 52 rupees each; a little grain given to some.
RAJSHAHYE.	Rajshahye, ...	3,416	1,41,913	3,839	37	Ditto.	Ditto ditto, 6 to 48 rupees each; one man has 15 beghas of Chakeran.
	Total, ...	25,756	9,62,045	22,787	—		

Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chowkeedars.	Number of Houses to each Chowkeedar.	HOW APPOINTED.	HOW PAID.
Dacca.	Mymensing,	13,162	3,06,133	4,080	75	Head Villagers or police.	Annually cash, from 3 to 54 rupees each.
	Sylhet, ...	6,937	2,24,386	3,259	69	Landholders and villagers.	Ditto ditto, 1 to 30 rupees.
	Dacca, ...	3,163	2,32,023	4,026	58	Head villagers.	Ditto ditto, 6 to 36 rupees each, and a few are said to be paid monthly from 1 to 3 rupees each.
Furzedpore,	Backergunge,	2,857	1,78,104	3,051	58	Landholders.	Ditto cash, from 7 to 42 rupees each.
		1,987	1,27,972	1,773	72	Headmen.	Ditto 1 to 52 rupees each ; some have grain.
Total, ...		27,608	10,68,618	16,189	—		

Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chowkeedars.	Number of Houses to each Chowkeedar.	HOW APPOINTED.	HOW PAID.
CHITTAGONG.	Tipperah, ...	5,884	2,37,733	2,768	86	Headmen.	Annually cash, from 2 rupees 8 annas 9 pie to 57 rupees 8 annas each.
	Noacolly, ...	977	90,833	1,867	49	Ditto and police.	Cash, each Chowkeedar receives 12 annas per house monthly.
	Chittagong, ...	944	1,79,763	2,431	74	Head villagers.	Annually cash, from 6 to 30 rupees, some get grain too; and a few monthly at 2 rupees 8 annas each.
	Total, ...	7,805	5,08,329	7,066	—		
CUTTACK.	Pooree, ...	4,584	1,10,814	2,822	39	By Gomastahs and headmen.	Annually, by cash from 1 to 48 rupees; land 1 beegah to 65 beegahs each.
	Cuttack, ...	6,630	2,13,207	5,072	42	Zemindars, confirmed by the Magistrate.	Ditto cash, 1 to 55 rupees; land from 1 beegah to 40 beegahs each.
	Balasore, ...	4,317	96,457	1,978	49	Zemindars.	Ditto cash, 4 annas to 25 rupees; land 1 beegah to 25 beegahs each.
	Total, ...	15,531	4,20,478	9,872	—		

Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chowkeedars.	Number of Houses Chowkeedar.	HOW APPOINTED.	HOW PAID.
Burdwan.	Midnapore,	11,198	2,95,145	9,123	32	Headmen or the Magistrate.	Annually cash, 2 to 61 rupees; land from 4 beegahs to 143 beegahs each.
	Howrah, ...	1,412	98,756	1,465	67	Zemindars.	Ditto cash, from 19 rupees 4 annas to 39 rupees 12 annas, with some grain each.
	Hooghly, ...	3,168	2,80,493	5,194	54	Zemindar and Magistrate.	Ditto cash, 3 to 60 rupees; land 1 beegah to 36 beegahs.
	Burdwan, ...	2,873	2,13,036	8,848	24	Ditto.	Ditto cash, from 12 annas to 72 rupees, some have some land.
	Beerbhoom,	6,928	1,88,182	10,850	17	Ditto, and some by Sirdar Ghatwals.	Ditto cash, from 12 annas to 136 rupees each; or land from 3 cottahs to 228 beegahs each; or land and grain, producing an estimated income from 25 to 42 rupees each.
Bancoorah.	The Ckowitzkeedars and the Ghatwals (who in Beerbhoom hold of the zemindar, but in Bancoorah of the Government) should have been distinguished.						
	{ Villages,	2,879	1,35,618	3,934	32	Zemindars or villagers, confirmed by the Magistrate.	Ditto, from 8 annas to 71 rupees, and also in kind.
	{ Ghats, ...	1,127	28,388	4,825	7	By the Magistrate.	By land held of Government under engagements with the old Rajah of Bishenpore, at from 2½ beegahs to 4.152 beegahs per man,
Total,		20,555	12,20,619	43,739	—		

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Division.	DISTRICT.	Number of Villages.	Number of Houses.	Number of Chowkedars.	Number of Houses to each Chowkedar.	HOW APPOINTED.	HOW PAID.
NUDDA.	24-Pergunahs.	2,605	1,53,905	2,788	55	Headmen.	Annually cash, from 3 to 220 rupees 11 annas, also in kind.
	Nuddea, ...	3,054	2,13,576	4,134	52	Ditto.	Ditto cash, from 1 rupee 8 annas to 60 rupees; grain added in some parts.
	Jessore, ...	4,126	2,16,256	4,189	52	Ditto.	Ditto cash, 1 rupee 8 annas to 48 rupees, and ditto ditto.
	Moorsheadabad	3,014	1,89,871	4,467	43	Zemindars or villagers, or both.	Ditto cash, from 1 to 48 rupees each, and must have some land or grain added.
	Baraset, ...	1,981	96,901	2,157	45	Headmen.	Ditto cash, from 11 rupees to 60 rupees each.
Total, ...		14,780	8,70,509	17,735	—		
Grand Total, ..		1,59,309	6,28,686	1,64,877	—		

Usually then, particularly in Bengal Proper, the Chowkeedar is appointed by the Zemindar. The average receipts of each man will be understated at Rs. 2 per month, and one rupee for presents. That is we have "a total for the annual receipts of 59,35,572 rupees; and calculating at five for each house in these returns, the population would be 3,41,44,330, upon whom the above amount of taxation would fall at the rate of $2\frac{1}{2}$ pie per head per annum, which is certainly a very light taxation, even at the high rate of receipts above assumed."

It is however necessary to enable the Magistrate to fill up a vacancy in the office of a Chowkeedar or to compel payment of his wages. "It has been objected by some very competent advisers on such subjects, that even when all this shall have been done, we shall be as far as ever from our object; that the village Chowkeedars, at the best, are an untrustworthy, unorganised rabble, and that no real improvement will be effected unless we get rid of them altogether, and organise a rural police according to the newest forms of occidental civilisation. And it is common with those who advocate this method of reform to point to the 34,000,000 or 36,000,000 of the population, and to urge how easily a sum might be raised from them, not greater than they now pay for their imperfect village watchmen which, in the hands of a skilful organiser, might be made to provide for the establishment in each zillah of a well-paid, dressed, and disciplined force, inferior in numbers to the present rural police, but far superior in trustworthiness and efficiency." Some such plan may one day be carried out, but at present it is impracticable. The pay of the Police must also be increased, some 10 or 15 Darogahs being rewarded by places of Rs. 150 each, and ten more with Rs. 200 each. The salaries of the lower grades must also be increased a measure which according to a plan previously submitted will cost Rs. 3,38,609 a year.

The inexperience of Magistrates can best be corrected by the union of the Collectorate and Magistracy, but all improvement is vain unless we can increase the number of the Magistrates. Their paucity is admitted. The proper extent of a Deputy Magistracy is about three thannahs. There are in practice 400 thannahs in Bengal requiring 133 Deputy Magistrates. There are already 33, so that 100 more are required who on a proper scale of remuneration would cost Rs. 4,60,801, or with establishment six lakhs. Even then, with the necessary increase of pay to the Police costing Rs. 3,38,609, the Police charges of Bengal would be little more than those of the North West.

Further says the Lieutenant Governor:—"I am very sure that our mofussil administration will, *ceteris paribus*, be generally efficient, while it is certain to be also acceptable to the

people according to the degree in which it conforms to the simple or Oriental, in preference to the complex or European model. The European idea of Provincial Government is by a minute division of functions and offices, and this is the system which we have introduced into our older territories. The Oriental idea is to unite all powers into one centre. The European may be able to comprehend and appreciate how and why he should go to one functionary for justice of one kind and to another for justice of another kind. The Asiatic is confused and aggrieved by hearing that this tribunal can only redress a particular sort of injury, but that, if his complaint be of another nature, he must go to another authority, and to a third or a fourth kind of judicature, if his case be, in a manner incomprehensible to himself, distinguishable into some other kinds of wrong or injury. He is unable to understand why there should be more than one hakim, and why the hakim to whom he goes, according to his own expression, as to a father for justice, should be incapable of rendering him justice, whatever be the nature of his grievance, or whatever be the position of his adversary." To this principle he would steadily adhere in all arrangements. As to arranging that the Deputy Magistrate should commit cases to the Moonsiff, who should be invested with criminal judicial powers, it is impracticable. There is antagonism often enough between the Judge and the Magistrate "conceive this local antagonism not merely at each zillah station, but all over every district, and the antagonism in each case, not of two liberally-educated Englishmen, but of two half-educated and Orientally-civilised natives, and let those who know the country and people declare what would be the practical result. Conceive every Darogah opposed perhaps to an antagonist local Moonsiff, and every native Deputy Magistrate to a native Sudder Ameen at an out-station ; imagine the bickerings, the criminations and recriminations that would ensue. For, though under the greatest provocation, corruption is the last thing which a native ever imputes to an English Judge or Magistrate, it is the first imputation which a native casts on a native, on great provocation, slight provocation, or no provocation at all."

The Lieutenant Governor approves the suggestions of the Law Commission, but would extend trial by Jury to all heinous cases in the interior, would diminish the practice of appeal, and enable the Appellate Court to enhance sentences, and would reduce generally the right of criminal appeal. His Honour considers some other doubtful recommendations of the Law Commission, notices the important bearing of roads on criminal justice, and recommends the institution of a Civil Order of

Merit. Finally the Lieutenant Governor notices a plan for the creation of honorary Magistrates, a plan which has much to recommend it, but to which he is not fully prepared to give his adhesion. Notes by the Secretaries are added, but they contain only the details, the results from which have already been given.

On 18th February, 1857 the Right Hon'ble the Governor General recapitulates the correspondence, and with reference to a general Police Reform for all India observes:—"We shall, therefore, in my opinion, be far more likely to arrive at a sound practical result, and to provide effectually for the protection of life and property throughout India, if we treat each Presidency and Lieutenant-Governorship separately, according to its own wants, of course bearing in mind certain leading principles which must necessarily be common to all, than if we postpone consideration of the Bengal question until replies are received from the other Presidencies, and endeavour to frame one scheme which, with minor modifications, shall be equally applicable to all." His Lordship is decidedly of opinion that the appointment of a single Superintendent of Police is inexpedient, and observes as to a semi Military Police "the nucleus of a semi-military force, sufficient for the occasional support of the ordinary police, as well as for other duties, already exists in the Patna Station Guards, the Bhagulpore Hill Rangers, and the corps which has recently been raised for police service in the Sontal Pergunnahs. The Patna Guards have been organised on their present footing since 1848. They supply personal guards to the Commissioner of the division and the Judges of the districts. They also furnish jail, treasury, and opium guards for these districts, and escort for treasure and prisoners." If the Bhagulpore Hill Rangers were burned into a purely Military Corps, and two more police corps organized the existing force is sufficient for Bengal. The scheme proposed by the Lieutenant Governor of Bengal for increasing the salaries of the Civil Police should at once be sanctioned, as also the creation of ten prize appointments of Rs. 150 a month, and 10 more of Rs. 200 a month for specially qualified Darogahs. His Lordship also believes the appointment of additional Deputy Magistrates as to raise the total number to 200 absolutely necessary. He would divide them thus:—

" First Class,	..	10	at 700,	..	..	Rs. 7,000
Second Class,	..	15	at 600,	..	..	9,000
Third Class,	..	25	at 500,	..	..	12,500
Fourth Class,	..	40	at 400,	..	..	16,000
Fifth Class,	..	50	at 300,	..	..	15,000
Sixth Class,	..	60	at 200,	..	..	12,000
<hr/>						
Total,		200				71,500
<hr/>						12

Rs. 8,58,000"

His Lordship is of opinion that reason no less than experience points to the expediency of uniting the executive offices of a district, and therefore approves the reunion of the Collectorate and Magistracy. "I do not think that the case would be met by raising the salaries of the Magistrates and reducing those of the Collectors, or by putting them upon an equality. An inexperienced Collector may be as mischevous as an inexperienced Magistrate, and it is not desirable that any man should exercise independent authority of any kind over a whole district until he is ripe for it. And even if experience could be secured in both offices, the division of authority is to be avoided rather than sought. As regards the people, I fully believe that what has been called the patriarchal form of Government is, in their present condition, most congenial to them; and best understood by them: and as regards the governing power, the concentration of all responsibility upon one officer cannot fail to keep his attention alive, and to stimulate his energy in every department to the utmost, whilst it will preclude the growth of those obstructions to good Government which are apt to spring up where two co-ordinate officers divide the authority." The Joint Magistrate in each district should however, be charged with the immediate control of the Police. "I incline strongly to the opinion that the proceedings of the subordinate criminal court should be of the simplest possible description. I am also of opinion that there should be no appeal of right from the sentence of a subordinate court in criminal matters; but that the Magistrate should have authority to revise or modify the decision of every Assistant or officer exercising the powers of Assistant within his jurisdiction, and that the Judge should in like manner, have authority to revise or modify the decision of every Magistrate or officer exercising the powers of a Magistrate. The review would take place as a matter of course, and any person would be competent to call the attention of the Magistrate or Judge to any point upon which the decision had

done wrong to any one." His Lordship is in favour of the creation of an honorary Magistracy and "should be disposed to authorise the Lieutenant-Governor to vest with the powers of an Assistant Magistrate, under Act No. XV. of 1843, scarcely equivalent to those of a Justice of the Peace under the English law, any persons of respectability whom he may consider fit to be entrusted with such power." The Hon'ble J. A. Dorin, and the Hon'ble Genl. Low, on 21st and 23rd February generally concur.

On 9th April, 1857, the Honourable J. P. Grant concurs generally but observes:—"I feel doubtful whether two additional police corps, as proposed, would quite suffice to protect Bengal as it should be protected, considering the remarkably small number of regular troops which are now or hereafter are likely to be cantoned within its limits. I fear one corps at Dacca will be an insufficient provision for Eastern Bengal. The Sontal side of Bengal is now amply provided for. There is no reason to suppose that because the last outbreak was there, the next will be there also. I look upon the Sontal Pergunnahs as quieted for ever; but I regard the Ferazy population of Eastern Bengal, filling extensive and populous districts now wholly unprotected, as a source of very serious danger, though a danger which requires only the securities provided in every part of India except Bengal, in order to be fully guarded against." Mr. Grant would rely wholly on the semi-Military Police for the work now performed by Burkundazes. He considers the expense to be incurred for new Deputy Magistrates too great, and would in preference grant criminal powers to civil subordinate Judges. Mr. Grant considers that the result of the Torture Commission strengthens the case against the union of the Collectorate and Magistracy. As to the general question of the union of all executive powers in one hand. "One has only to read a native or English newspaper with a mofussil circulation, to see that those for whom such mental food is provided have no filial regard for Government officers. They are past the patriarchal epoch. What they ask for are good laws, well administered by as many functionaries as the country can fairly claim with reference to its general circumstances, and the taxes it pays. These classes want nothing from Government more paternal than this; less than this they will not accept, and all this they have a right to have. My mature conviction is, that they never can have this, unless incongruous functions are kept in separate hands, and every functionary is required to mind his own proper business." As to the example of the Punjab. "The Punjab has been fortunate in the selection of its work-

men ; but its peculiar good fortune has consisted in this, that its workmen have not been required to make bricks without straw.

For 19 districts of moderate size, containing a population of something upwards of 10,000,000, 7 police battalions of foot, and 27 troops of mounted police, have been provided, at a cost of about 16½ lakhs of rupees a year. Altogether, for the civil duties of this territory, 8½ battalions and 38 troops, consisting of 12,000 men in organised bodies, are set apart. Besides these, for the same territory, there are about 10,000 men called detective policemen, maintained at a cost of about 8½ lakhs of rupees a year, and all this is besides the old village Chowkeedars, or watchmen of the country. Knowing this, I was prepared to hear that the extinction of dacoity, and of all crimes of organised violence, in the central districts of the Punjab, may be pronounced complete." On 30th April, 1857, the Honorable B. Peacock records his general assent, but would deprive the Deputy Magistrates of all judicial powers leaving them to the Moonsiffs.

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