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MEDICO-TOPOGRAPHICAL ACCOUNT

OF

DEOLI, RAJPUTANA,

WITH A MEDICAL HISTORY OF THE DEOLI IRREGULAR FORCE,

BY

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AGENCY SURGEON, HARAOTI AND TONK.

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PREFACE.

The Medico-Topographical account of Deoli is one of a series of which are being prepared under the authority of the Government of India Foreign Department, on the recommendation of the Agent to the Governor General in Rajputana, and of the Director General, Indian Medical Service.

With the approval of the Agent to the Governor General the book is being edited by me, because at the time I was Administrative Medical Officer in Rajputana, I suggested the preparation of the histories and had written the first one on the Jeypore State.

Accounts of the Ulwar and Bikanir States by Major Neilson, M.B., have been published, and the History of Ajmere by Major Pank, I. M. S., is now in the press.

The general account of Rajputana by me is also ready for the printer.

The Agent to the Governor General, in some instances, is unable to agree with the author in the general observations and opinions with which his account of Deoli is accompanied.

T. H. HENDLEY, *Col., I.M.S.*
Insp. Genl. of Civil Hospital

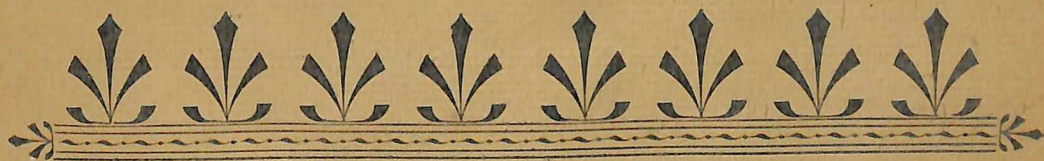


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MEDICO-TOPOGRAPHICAL ACCOUNT OF DEOLI.

DEOLI IS SITUATED in south-east Rajputana in Lat. N. $25^{\circ}45'32''$, Long. E. $75^{\circ}2'14.8''$, 71 miles by road from Ajmere, 30 from Bundi and 52 from Kotah. Its elevation is 1,122 feet above sea-level. It is approached most easily by a well metalled road from the Rajputana-Malwa Railway at Nasirabad (57 miles), the Banas river being crossed 5 miles north of Deoli. The cantonment stands on a shallow basin of transition rock which has become overlain by an extensive plain of "kankar" calcareous (carbonate of lime) conglomerate, averaging from six to eight feet in thickness, lying some two feet from the surface and which exists between the Awan ridge of hills and the Rajmahal-Toda range. The Awan ridge of hills, which runs from the east to the south-west, south of Deoli, is, near the Station, considerably broken, forming an irregular tract of low hills, chiefly composed of mica, state, and transition schistose rock, sometimes containing garnets and actinolite, copiously veined with quartz. This is the tract known as the Mina Kherar, containing some forty-two villages chiefly inhabited by the tribe of Puriar Minas, who formerly existed by carrying on predatory raids on the neighbouring districts, but now form the bulk of the Deoli Irregular Force.

Near Deoli, which is the head-quarters of the Deoli Irregular Force and also of the Haraoti Political Agency, the boundaries of the Jeypore, Udaipur and Bundi States are contiguous. The Agency, established soon after the Mutiny, at first exercised supervision over the States of Bundi, Kotah and Jhallawar, but is now only concerned with the affairs of Bundi, Tonk and the tributary State of Shahpura.

Previous to the Mutiny of 1857, Deoli was the head-quarters of the Kotah Contingent of Irregular troops raised in 1840. At that time much of the surrounding district was thick jungle, which has since been almost entirely cut down. The adjoining hills were inhabited by



Minas and other tribes of so lawless and wild a nature that they were pronounced by Sir W. Sleeman to be irreclaimable robbers.

On the outbreak of the Mutiny at Nimach, the Kotah Contingent, which was composed of the same elements as the rest of the native army, marched off to that place to act against the disloyal troops. But they too drove off their officers, joined the ranks of the disaffected, and, with the Gwalior Contingent and other rebels, left Nimach for Agra. On their way the mutineers passed through Deoli, destroying the entire station. The bungalows and barracks were burnt and all the military stores as well as private property looted. Fortunately the ladies and children of the absent officers, who had been left behind in Deoli with a few old soldiers, received timely warning and left for safety at Nasirabad only a few hours before the arrival of the mutineers. To take the place of the disbanded Kotah Contingent as many as possible of the predatory Minas of the district armed with match-locks, bows and arrows, and other rude weapons were, at the suggestion of the Governor General's Agent, collected gradually, disciplined, and organised in August 1857 into the "Mina Battalion." A double purpose was served in this way; first, by the enlistment of a reliable body of men, hereditary enemies of the surrounding States, the mutiny in Kotah was made able to be grappled with, and secondly, by giving legitimate employment to the men of a tribe hitherto existing by pillage and rapine, they were soon taught to abandon their evil ways and serve as a permanent Military Force to ensure peace and protection to the neighbouring districts.

The site of the cantonment, one mile south of the village of Deoli and half a mile north of the village of Uncha, was chosen originally by a committee of officers. The situation selected has since appeared to be of questionable excellence, chiefly owing to the scanty water-supply obtainable. At that time, however, the fear of cholera infection militated against the choice of a site on the banks of the river Banas, which would otherwise probably have been selected.

In 1858 the Mina Battalion under the first commanding officer, Captain J. D. Macdonald, took part in the siege and capture of Kotah, where, as has been said, the State Troops had mutinied against the Government and the Maharao, and had murdered the Political Agent, Colonel Burton, and his two sons. The operations lasted from 30th March to 14th August, and the Minas distinguished themselves greatly by their bravery, endurance and devotion to their officers. A squadron of Sikh horse having been added, the Mina Battalion was, with this cavalry, incorporated into the Deoli Irregular Force in June 1860, and gradually disciplined into a military body on the modern system. At first punishments for military crimes were not inflicted, though the lash was unsparingly used for any thefts committed. Pay was almost daily distributed. Indeed, so little confidence was at first reposed in the men that it was not deemed expedient to entrust them with Government muskets, and they were consequently armed with swords and shields, match-locks and bows and arrows. Nor were they at first entrusted with the escort of treasure. But it was soon found that in the Minas and their kindred tribes we had secured excellent material for soldiers. The foibles and feelings of the men were judiciously studied, and their pride and vanity turned to good account. In short, military discipline was gradually introduced; but it was not until 1863 that the Force was formally inspected by Brigadier General



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Younghusband, C.B., who in his report expressed his complete satisfaction at the appearance and discipline of the men, and it is still the boast of the Deoli Irregular Force that it has never been unfavourably reported on by an inspecting officer. Soon after the Mutiny a regiment of Bengal Cavalry was cantoned at Deoli and continued there until the Afghan war, when the regiment was removed and never sent back. Since that period the Deoli Irregular Force, consisting of a battalion of infantry and a squadron of cavalry has been alone stationed at Deoli.

POPULATION.

The following table shows the population of the Station in 1897:—

	Males.	Females.	Total.
Men of the Force (present)	792	...	792
Followers, women, children, servants, etc.	280	201	481
Cantonment Bazar.	1,009	900	1,909
Agency.	704	513	1,217
TOTAL	2,785	1,614	4,399

BUILDINGS, ETC.

The infantry lines are well built, but the rows of huts have been originally constructed in too close proximity to one another, a fault now difficult of correction. The cavalry lines, now reconstructed, have more surrounding air space. The Agency buildings and pukka bungalows for officers were built soon after the Mutiny. After the departure of the Bengal Cavalry Regiment the bungalows of their officers were pulled down, so that only seven habitable houses exist at present, and of these one is used as the Mess of the Deoli Irregular Force, while another is the property of the Maharao of Kotah, and a third belongs to the United Presbyterian Mission, leaving only four houses for the accommodation of the officers of the Force. In 1863 nearly a thousand trees were planted and many more have since been added, giving the station a pleasant and well wooded appearance.

In 1872 a Dâk bungalow and new Post office building were added, and in 1873 a picturesque Church. A small one-roomed brick Magistrate's Court completes the list of public buildings.

In the Agency are the residence of the Political Agent, the houses of the various vakils and Agency subordinates, and a small bazar, and a good garden containing excellent vegetables. A similar vegetable garden exists at the north-west corner of the parade ground, supported by the officers of the Deoli Irregular Force. These gardens supply excellent fruit, oranges, mulberries, grapes, etc.



WATER-SUPPLY.

The water-supply of Deoli is derived from—

- (1) Wells in cantonments and in the Agency, and from wells just outside cantonment and Agency limits.
- (2) From two special wells sunk in islands on the Nek Chal tank.

WELLS.

There are at present yielding water—

- | | |
|--------------------|-----------|
| (1) in Cantonments | 21 wells. |
| (2) in Agency | 14 „ |

The following is an analysis of the water of two of the station wells:—

Names of wells,	Total hardness, degrees (Clark).	Chlorides, grains per gallon.	Oxidizable organic matter, grains per gallon.	Sulphates.	Nitrates.	Microscopical.
Garden well	25	12	·06	considerable quantity.	Trace.	Much vegetable débris.
Ganga Goria wel.	9	5	·04	slight trace	Nil.	Some vegetable débris.

The latter “Ganga Goria” well is situated a few hundred yards south-west of cantonment limits in Meywar territory, and is reputed to contain the best drinking water in Deoli.

The inhabitants of the Sadar Bazar chiefly use this water, and supplies from it are brought daily to the officers’ bungalows for drinking purposes.

It will be observed that the water contains an excess of saline matter and hardness. Nevertheless the water is apparently not unsuitable for drinking purposes, as is shown by the healthiness of the station. The water difficulty in Deoli has always been on account of the small quantity obtainable from the wells, especially after seasons with diminished rainfall, when the line wells sink to about 5 feet of water at the end of the year and may subsequently dry up. To remedy this the “Nek Chal” works were commenced on July 7th, 1865, which consisted in raising an embankment or bund 4,350 feet long and containing 435,000 cubic feet of embankment to enclose a lake of (originally) $41\frac{1}{2}$ acres. The work derives its name from a grant of good conduct pay awarded to the men in consequence of the part they took in the siege of Kotah, and in commemoration of which grant the works were constructed by the men of the infantry. The bund, with artistic lime and stone waste weirs, was completed in the year 1868. The “Nek Chal” has since been enlarged, improved, and surrounded by beautiful trees, and altogether forms the most picturesque feature in Deoli. There is a handsome ghât at the south-west corner, and the lake is freely used by the men for bathing purpose. The lake is filled by the surface



drainage of the cantonments. The rainfall in the seasons 1877 and 1878 was very much below the average, and the station wells were nearly exhausted by the middle of February. Much inconvenience arose and water had to be fetched from long distances, while the cavalry were sent to camp on the river banks.

In the latter year it became evident that, apart from the scarcity caused by the scanty rainfall of the previous years, the wells situated in the lines, and indeed almost all the wells in the station, were gradually drying up and would before many years cease to meet the demands made upon them for daily use. It was also judged that to attempt to deepen the wells would be an expensive undertaking, the success of which would be very questionable. In 1885, however, when the wells ran dry in summer, one infantry well was deepened ten feet.

To meet this deficiency two wells were sunk on islands on the Nek Chal tank, which fill from the filtration of the adjoining sheet of water. These are known as the "Nek Chal" and "Diggi" wells, and the water from the former, being surrounded by a wider space of filtration area, contains about the best water in the station.

ANALYSIS.

Names of wells.	Hardness.	Chlorides.	Oxidizable organic matter.	Sulphates.	Nitrates.	Microscopical.
Nek Chal well	5.6 degrees (Clark.)	3 grains per gallon.	.08 grains per gallon.	Absent .	Absent .	Very slight vegetable débris.
Diggi well .	10 degrees (Clark.)	12 grains per gallon.	1 grain per gallon.	Present .	Absent .	Much vegetable débris.

Still the supply did not seem adequate, and accordingly a conference was held on the subject and it was suggested that the "Nek Chal" well should be much deepened and enlarged so as to render it capable of meeting the requirements of the troops, and to construct a reservoir in the lines communicating by a duct with the well. This, however, was only completed in the year 1895. A covered stone and lime reservoir, provided with taps, having a capacity of 1,570 cubic feet, has been built in front of the infantry quarter-guard and connected by iron pipes with the Nek Chal well, distant about 900 yards, where the water is raised by bullocks and discharged into the pipes. The cost of the reservoir, pipes and improvements at the wells has been Rs. 3,100.

This arrangement, though a great convenience, far from solves the water difficulty at Deoli. Even were it always desirable, from a sanitary point of view, to continue in future years to supply the water for a whole station from two wells receiving the filtration from an adjoining tank, it would hardly be considered expedient that the supply should be drawn at the expense of the tank itself, and this leads to a consideration of the second aspect of the question, *vis.*, whether other measures cannot be devised for ensuring a sufficient water-supply in the future. It is even more obvious now than in 1879 that the station wells



are drying up year by year, and the construction of a tank half a mile away at Uncha is accelerating the process.

Two suggestions were made as early as 1866 by Dr. F. W. A. de Fabeck, the medical officer of the regiment, himself a skilled engineer and architect. He suggested the construction of a bund from the south-east angle of the Agency Bazar to the nearest point adjoining the hills known as the Mina Kherar, three quarters of a mile away, where the conditions are favourable for the collection of a considerable body of water of much larger area than the Nek Chal tank. The plot of land referred to is traversed by two water-courses flowing northward from the hills to fill the tank at the village of Kuchalwara. The average section of the bund, allowing 30 feet for the base, 10 feet for the top and 10 feet in height, having an average section of 200 feet and total contents of 188,000 cubic feet of earthwork, was estimated to cost Rs. 3,564-0-0. Doubtless a body of water in that situation would materially influence the water level of station wells. Moreover, its situation in the south-east angle of the station is a peculiarly favourable one in reference to the direction of the prevailing winds, which blow for most of the year from the west or south-west.

The second suggestion refers to the possibility of rendering the perennial waters of the river Banas available for the wants of the station. In a direct line westward the distance from the station to the river is not more than $3\frac{1}{2}$ miles. The water is clear and good, and there are no topographical difficulties which the most elementary engineering experience could not overcome. To say, therefore, that the cantonment of Deoli is situated only $3\frac{1}{2}$ miles from the banks of an important river whose water never entirely disappears, and that it yet suffers from what threatens to be a water famine, seems almost like an anomaly in these days of progressive irrigation. The water is here, and were the means of utilizing it adopted, we should never again hear of scarcity of water at Deoli.

Analysis of water from regimental cistern, Deoli Irregular Force brought, from Nek Chal well in pipes—

Total solids, grains per gallon.	Chlorides, grains per gallon.	Total hardness, degrees (Clark).	Fixed hardness, degrees (Clark).	Free ammonia, parts per million.	Albuminoid ammonia, parts per million.	REMARKS.
28.00	3.50	5.6	3.5	Nil.	.09	Potable.

Analysis of water from well in cavalry lines, Deoli Irregular Force—

Total solids, grains per gallon.	Chlorides, grains per gallon.	Total hardness, degrees (Clark).	Fixed hardness, degrees (Clark).	Free ammonia, parts per million.	Albuminoid ammonia, parts per million.	REMARKS.
70.0	11.9	7.7	20.8	.16	.07	Not potable.



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Average depth of station wells, Deoli, from P. W. D. Examination.

Name of well.	Total depth of the well.	Depth of the water before rains.	Depth of the water after rains.
Nek Chal well	43 feet.	20 feet.	35 feet
Garden „	55 „	30 „	40 „
Cavalry „	70 „	10 „	20 „
Wells in the Infantry lines	70 „	Nil	20 „
Mission compound well	80 „	2 „	15 „
Gunga Gorla „	45 „	15 „	35 „

DRAINAGE.

The drainage of the Agency and Sadar Bazar flows into the nullahs, which converge south-westwards to a small shallow sheet of water half a mile away below the village of Uncha, known as the small Uncha tank.

The drainage of the rest of the cantonment and lines is conducted by a system of well kept ditches to a main ditch which runs northwards from the lines into the south-east corner of the Nek Chal tank. A fall of one inch of rain causes these ditches to run freely, and a five inch continuous fall is sufficient to fill the entire Nek Chal tank to overflow point. By this process, assisted by the porosity of the kankar soil, the Cantonment is well drained.

CONSERVANCY.

The entire native population of Deoli, with the exception of sick persons and “pardah-nashins,” repairs to the fields to the south, south-east, and west for the purposes of nature. Orders are issued that they have to proceed to a distance of five hundred yards from station limits, and sentries are posted on each side of the cantonments to see that this order is properly carried out. High crops, too, are forbidden in the neighbourhood of the station. In the purdah compounds and in the case of sick persons, the ordure is removed by sweepers and deposited, with ashes and rubbish, in certain selected spots and removed early every morning by buffaloes to the adjacent fields beyond a distance of five hundred yards. Pukka latrines exist in the hospitals, in the compounds of the bungalows and in the cavalry married quarters, where a special latrine arrangement exists, devised by Surgeon-Major H. V. Harrington of the Deoli Irregular Force. The principle of the arrangement consists in a raised mud platform for the individual with a small cavity below for the gumlah, which can be thus shut off by a lid when not in use, and there is a further arrangement for removing the gumlah from the exterior by a special aperture in the wall of the compound, a stone being removed from the outside. The refuse from the hospitals and bungalows is removed daily by a tared cart kept at the hospital.



The Agency and Sadar Bazars have each a staff of four sweepers, and sufficient special sweepers are kept in the lines, hospitals and private houses.

The system of repairing to the fields has the advantage of economy, and the fact remains that in this small station it appears to work well, the sickness being remarkably little, while no nuisances or offensive smells are observable in the station and environs, except, perhaps, on occasions in the rainy season. The lands drained by the Nek Chal tank are not allowed to be used for the purposes of nature.*

The disadvantages of absence of public latrines for the men of the Force and for the inhabitants of the bazar are, that these people do not go any distance for the purpose of micturition only, and that in times of epidemics great danger of the diffusion of the germs of disease would exist from infected ordure being deposited on the surface in the environs of the station. Indeed, in a threatening epidemic it would be advisable to erect trench latrines in suitable positions for the men of the Force and for the civil population. The trench system of latrines was ordered to be used in cantonments early in the year 1870. In September of the same year cholera visited the station, forty men being attacked in the Infantry alone. The trench latrine system was continued for about four years and then discontinued as inconvenient and expensive.

DISPOSAL OF THE DEAD.

The Hindus are cremated at convenient distances from the station. There is a Mohammedan grave-yard at the north-east corner of the cantonment, close to the Christian cemetery. The latter is a well kept and tastefully arranged garden. It speaks well for the healthiness of the station that it only contains the graves of three officers, one European civilian, who died at the age of 73, two ladies and three European children. The oldest tombstone dates from 1863.†

LIGHTING AND FUEL.

Lamp posts lighted with kerosine lamps have recently been erected in the bazars. Oil and kerosine lamps and candles only are used in the houses. For fuel the solid excreta of horses, cows, etc., are pressed into cakes with straw and used by the poorer people. The wood of the dhau tree is principally used for burning.

FOOD.

The inhabitants of the district eat little rice, preferring bread, *dál*, sweetmeats, and among the meat-eating classes mutton and goat's flesh. Wheaten bread is eaten only by the better classes.

* The ground near the lines in some places is much defiled by urine. Urinals should be constructed and latrines for night use, if nothing more can be done. It is certainly not pleasant to think of large quantities of excreta being deposited on such a dry and hard soil as that on which Deoli stands. I have heard that, although the lines are healthy, the adjacent villages are not so by any means.—T. H. H.

† If the true mortality per mille were worked out, I am not sure whether this statement would prove correct.



ACCOUNT OF DEOLI.

Bajra bread is cheaper, jowar bread is still cheaper, while the poorest make bread from a mixture of barley and channa flour or from flour of Indian corn (makka). The dough is made into flat cakes, which, if fried in ghee or oil, are called "puris," and if baked on plates over a fire are called "chapaties." "Bati" is the same mixture made into balls cooked in cinders. They are eaten plain or smeared with ghee and sugar.

All these varieties of bread are eaten with hot condiments made of brinjals or other vegetables, red pepper, etc.

The other food-stuffs, etc., sold in the bazar of Deoli are *dāl*, grown locally and also imported from Nasirabad, the price of both qualities being identical, *chakar* (bran) and *khal*, oil-cake after expressing the oil from til and sarson seeds (*brassica campestris*), used for animals.

Tobacco from Bareilly.

Condiments such as coriander (dhania), cardamoms, chilies, turmeric.

Potatoes from Nasirabad.

Sugar made locally costs $3\frac{1}{2}$ seers for the rupee.

Vegetables are scarce, the paucity of these articles of diet being a cause of ill health among the inhabitants. Many of the men of the Deoli Irregular Force suffer from spongy gums, with tartar and exposed roots of the teeth. The Europeans, native officers and vakils, however, obtain an excellent supply of vegetables and fruit from the Agency and Regimental gardens.

In the bazar are only found :—

Carrots and turnips sold at 8lb for an anna.

Brinjals, palak (spinach), fennel (soya), onions, a few beans and cress. All these are brought in from the neighbouring villages in small quantities, and are consequently very dear, averaging an anna or an anna and a half per seer. Onions, garlic and sweet potatoes are also sold.

Fruit is also scarce and dear. Oranges, limes and sweet-limes are brought in from Rajmahal. An orange costs one anna.

Inferior bananas, custard-apples, guavas, ber fruit (*Zizyphus jujuba*), cocoanuts, monkey nuts, dried dates and sugarcane are also sold.

Pipal fruit is used to relieve pains, etc., after child-birth.

There is also a large export trade in linseed and cotton.

The cotton seeds are used as food for cows, etc.



Prices of grain current at Deoli for the period 1876—1897.

YEARS.	SPRING (Rabi).			AUTUMN (Kharif).			
	Wheat.	Barley.	Bajra.	Wheat.	Barley.	Bajra.	
	Seers.	Seers.	Seers.	Seers.	Seers.	Seers.	
1876	Not	available		22	3 ²	23	Famine year.
1877	22 ¹ / ₂	3 ¹	18	11	13 ¹ / ₂	17 ³ / ₄	
1878	11	16 ¹ / ₂	17 ¹ / ₂	13 ³ / ₈	17 ⁵ / ₈	17 ¹ / ₂	
1879	12 ¹ / ₂	16 ¹ / ₂	15	11 ³ / ₈	20 ³ / ₄	17 ¹ / ₂	
1880	15	25 ³ / ₄	20	18	28	23	
1881	19 ¹ / ₂	32 ¹ / ₂	23	19 ¹ / ₂	24 ³ / ₄	22 ¹ / ₂	
1882	18	23	19 ³ / ₄	17 ¹ / ₂	22 ³ / ₄	20 ³ / ₄	
1883	17	24 ¹ / ₂	19 ¹ / ₂	20 ¹ / ₂	30	19 ³ / ₄	
1884	21	30 ³ / ₄	22	26 ¹ / ₂	37 ¹ / ₂	31 ¹ / ₂	
1885	26 ¹ / ₂	43 ¹ / ₂	35	23 ¹ / ₂	37 ¹ / ₂	32	
1886	23 ¹ / ₂	38	31	20	33 ¹ / ₂	28 ¹ / ₂	
1887	14	22 ¹ / ₂	21	13	16 ¹ / ₂	16	
1888	14 ¹ / ₂	20 ¹ / ₂	15 ³ / ₄	12	15 ¹ / ₂	12 ¹ / ₂	
1889	17 ¹ / ₂	24	17 ³ / ₄	17	26 ³ / ₄	20 ¹ / ₂	
1890	17	26 ³ / ₄	17	15 ¹ / ₂	21 ¹ / ₂	19 ¹ / ₂	
1891	15	21 ¹ / ₂	10 ¹ / ₂	12	15	13 ¹ / ₂	Famine year.
1892	18 ¹ / ₂	20 ¹ / ₂	17	15	17 ¹ / ₂	16 ¹ / ₂	
1893	12 ³ / ₄	25	22 ¹ / ₂	16 ¹ / ₂	39 ¹ / ₂	22 ¹ / ₂	
1894	16 ¹ / ₂	40	29	17	39 ¹ / ₂	31 ³ / ₄	
1895	15 ¹ / ₂	33 ¹ / ₂	28	14	20 ³ / ₄	20 ¹ / ₂	
1896	11 ¹ / ₂	15 ¹ / ₂	16 ¹ / ₂	14	18 ¹ / ₂	19 ¹ / ₂	
1897	9 ¹ / ₂	14	13 ¹ / ₂	10	12 ¹ / ₂	11 ¹ / ₂	





ACCOUNT OF DEOLI.

The prices show number of seers to the rupee.

1 Rupee = 1 shilling 4 pence (about).

1 Seer = 2 lb avoirdupois (about).

1 Anna = 1 penny.

EDUCATION.

There are only elementary schools at Deoli. In buildings near the Sadar Bazar children of both sexes are instructed in reading and writing Urdu and Hindi by teachers supported by the United Presbyterian Mission. A similar school for girls exists in the Agency, where there is also a good school supported by the Meywar State, for boys who are instructed in Urdu and Persian. Recruits are taught reading and writing Hindi in the Regimental School, where non-commissioned officers, signallers and drummers of the Force also receive special instruction in reading, arithmetic and English.

METEOROLOGY.

Deoli is not a meteorological station and regular observations are meagre. The rainfall has, however, been regularly taken since 1872, and from 1877 the temperature has been registered in the Dispensary verandah. This situation of the thermometer renders the temperature observations of slight value. Further, many of the older records have been lost or damaged. It may be stated generally that, except in the rainy season, the air is extremely dry. Dust storms are frequent and severe in the hot weather, at which time a hot, dry wind blows from the west or south-west throughout the day. At times this wind, called by the natives the "loo," continues throughout the night.

Deoli has the reputation of being a "hot" station compared with most of the cantonments and stations in Rajputana.

Total rainfall during the period 1872—1881.

Year	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879	1880.	1881.
Inches	37.76	37.18	33.90	32.50	41.90	14.37	23.21	35.87	17.91	33.35

Average in the 10 years 30.79.



Table showing the Rainfall from the year 1882 to 1897.

Months.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
January . . . . .	...	'02	'18	...	...	'26	'24	...	...	'46	...	1'09	'82	'17	...	...
February . . . . .	...	...	...	...	...	...	'95	'13	...	...	...	'27	...	'02	...	...
March . . . . .	...	'80	...	...	...	...	'04	...	...	'51	...	'89	...	'17	...	...
April . . . . .	...	...	...	'06	...	...	...	'03	...	...	...	...	...	...	...	...
May . . . . .	...	1'60	...	'25	2'90	'07	...	'15	'28	'62	...	...	...	...	'70	'41
June . . . . .	...	3'55	2'40	5'59	2'04	1'75	1'80	2'95	3'77	1'20	1'70	2'40	8'68	'64	13'24	'39
July	17'10	6'675	10'33	8'91	8'56	15'42	6'62	8'22	2'40	9'21	10'03	7'00	107'85	7'25	9'12	10'81
August	7'30	1'60	6'45	15'97	5'09	10'46	15'68	19'93	3'38	5'63	9'18	4'33	6'32	11'65	4'27	8'08
September . . . . .	...	3'95	3'305	..	'86	2'09	'17	...	1'66	3'94	8'38	7'2	5'91	'78	'22	3'21
October . . . . .	...	...	...	...	'07	...	...	...	...	...	'11	...	...	...	...	'43
November . . . . .	...	...	...	...	...	'26	...	...	...	...	...	'73	...	...	'51	...
December . . . . .	...	...	...	'08	...	...	...	...	'16	...	'06	...	'59	...	'72	...
Total	24'30	18'29	22'66	30'86	19'52	30'31	25'50	31'41	11'65	21'57	29'46	23'73	33'10	20'68	28'78	23'53

Average for the last 16 years 24'21 inches.

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A MEDICO-TOPOGRAPHICAL



Table showing the Temperature from the year 1882 to 1892.

CSL

	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1882	82	60	87	65	99	70	105	90	112	90	112	90	99	80	97	80	95	80	95	85	85	66	75	61
1883	74	55	82	55	96	69	106	90	113	84	109	82	96	80	101	83	91	79	90	74	82	61	70	57
1884	75	59	88	59	94	71	95	82	102	87	102	81	99	79	89	79	90	76	88	76	79	62	69	60
1885	67	50	73	51	90	62	94	75	98	75	99	79	95	76	87	75	92	74	92	68	80	70	73	60
1886	70	51	81	51	89	66	98	66	103	85	97	80	93	78	94	78	92	83	90	72	82	64	72	53
1887	68	52	84	50	93	66	99	73	107	86	104	82	92	77	85	75	88	75	88	68	76	60	70	58
1888	67	52	73	57	89	66	99	77	106	82	101	87	97	77	85	76	89	76	89	74	79	60	67	56
1889	72	55	78	60	88	68	99	78	105	82	108	85	93	81	87	70	92	77	91	65	78	61	69	58
1890	68	55	77	56	86	68	98	78	105	81	102	80	94	79	90	76	96	78	93	64	82	64	76	55
1891	77	53	82	52	82	64	99	74	106	85	107	88	102	79	91	79	93	80	89	72	82	65	75	59
1892	79	58	81	62	99	68	102	81	104	80	106	83	98	80	...	...	...	...	...	...	...	...	...	...

These observations were taken in the Hospital Verandah, and are therefore of little value. For instance, the minimum registered in the month of January 1898 was 33° F.

List of trees indigenous to the Haraoti district of Rajputana.

The following are common :—

Nim	Melia Azadirachta
Khirmi	Mimusops Kauki.
Mahua	Bassia Latifolia.
Bar	Ficus Bengalensis.
Pipal	Ficus Religiosa
Plum (Baer)	Zizyphus Jujuba.
Dhar	Lythrum Fruticosum.
Kheir	A small strong tree from which the district known as Kherar is so named. Acacia Catechu ?
Dāk	Butea Frondosa.
Tamarind	Tamarindus Indica (fruit laxative).
Khajur	Date. Phoenix Sylvestris.
Bel	(Cratœva), Ægle Marmelos (fruit <i>officinal</i> .)
Dhamum	A moderate sized tree, the wood of which is pliant.
Siris	Albizzia Lebbek.
Kaith	Feronia Elephantum.
Barnah	Cratœva Tapia.
Bamboo	Bambusa Arundinacea.
Chiromiji	Chiromija Tapidu.

Indigenous trees less commonly met with.

Asupala	Polyalthia Longifolia. A very tall tree with good girth and well adapted for shipping purposes, by no means common. The Indian Mast Tree.
Babul	Acacia Arabica (Mimosa Arabica).
Saguan	Tectona Grandis (Teak), very few trees.
Gundi	Cordia Rothii.
Mulberry	Morus Indica.
Jamun	Eugenia Jambolana.
Mango	Mangifera Indica.
Mulsari	Mimusops Elengi.
Katul	Jack (Artocarpus Integrifolia, Roxb).
Amaltas	Cassia Fistula (a laxative.)
Taindu	Ebony. Diospyros Melanoxylon.
Amla	Phyllanthus Emblica.
Gular	Ficus Glomerata.
Bharral	Monkey jack.
Sissu	Dalbergia Sissoo, Roxb.
Khamrak	Averrhoa Carambola.
Kachnar	Bauhinia Variegata.
Semal	Bombax Malabaricum (Heptaphylla).
Cocconut	A few trees only. Cocos Nucifera.
Kadam	Nauclea Orientalis (Anthocephalus Cadamba).
Harsinghar	Weeping nyctanthes (Nyctanthes Arbor Tristis).

Names of States.										Amount.		
										R	a.	p.
From Meywar State	.	.	.	.	.	.	.	.	.	20	0	0
" Jhallawar	.	.	.	.	.	.	.	.	.	12	0	0
" Tonk	.	.	.	.	.	.	.	.	.	23	0	0
" Kotah	.	.	.	.	.	.	.	.	.	23	0	0
" Bundi	.	.	.	.	.	.	.	.	.	8	0	0
" Cantonment	.	.	.	.	.	.	.	.	.	10	0	0
" Jeypore State	.	.	.	.	.	.	.	.	.	15	0	0
TOTAL										111	0	0

*Table showing attendance at the Deoli Charitable Dispensary.*

Y. ar.	No. of in-patients.	No. of out-patients.	Average daily attendance.
1882	115	2,601	.....
1883	91	2,144	21'25
1884	81	2,321	26'10
1885	92	2,501	25'70
1886	104	3,080	31'37
1887	93	3,452	34'94
1888	114	3,976	34'80
1889	110	4,268	33'66
1890	99	4,000	30'35
1891	98	4,403	40'05
1892	105	5,679	46'95
1893	133	5,191	42'12
1894	169	5,538	46'53
1895	144	6,052	49'07
1896	173	6,619	49'58
1897	153	6,821	54'70

The services of the Agency Hospital Assistants were from the first allowed to be placed at the use of the Charitable Dispensary, and since 1886 the funds of that institution were regularly placed under the control of the Agency, the Hospital Assistant and servants receiving part of their pay from the Agency and part from the Charitable Dispensary. Separate supplies of drugs and instruments, however, are obtained for each institution, and the records and returns of each are distinct.

At first the small building in the Agency Bazar, now used as a school-room, was used as the Charitable Dispensary.

In 1882, in consequence of the departure from Deoli of the Bengal Cavalry Regiment, permission to use the disused Cavalry hospital was obtained for the Agency and Charitable dispensaries, under the condition that the building should be given up should it again be required by the military authorities.



ACCOUNT OF DEOLI.

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The dispensary has been steadily growing in popularity as the increased attendances year by year testify. It appears at first to have been poorly equipped, and in 1879 the medical officer complained that he was unable to treat a case of vesical calculus in consequence of lack of instruments. In fact, it was not until 1893 that the dispensary was fairly equipped with surgical instruments. Even at the present time the income is insufficient to meet such purchases of new instruments, bedding and equipment as are necessary from time to time.

The building is of the usual one-storied type of military hospitals, consisting of a large ward, separated into two to accommodate male and female patients, an eye ward, drug room and operating room, with out-houses for the Hospital Assistant, servants, mortuary and latrines. There are beds for twenty in-patients. A well with good water is situated in the hospital compound.

Table of attendances, Charitable Dispensary, showing residence of patients from the various States, etc., for the year 1897.

Name of State, etc.	Number of in-patients.	Number of out-patients.	TOTAL.
Meywar	21	914	935
Jeypore	46	807	853
Kotah	3	237	240
Jhallawar	1	183	184
Tonk	1	149	150
Shahpura	2	256	258
Bundi	20	843	863
Saddar Bazar	9	1,338	1,347
Agency	4	1,079	1,083
Catonments . . . . .	...	333	333
Sawar	29	314	343
All other Districts	17	368	385
TOTAL	153	6,821	6,974

* Some valuable surgical work has been recently done in Deoli, which is the centre of an important District. An energetic surgeon soon becomes very popular in this neighbourhood. I have long hoped that it may be possible to make use of the services of the Medical Officers of this Corps to inspect some of the dispensaries in the neighbourhood.—T. H. H.



Table showing Income and Expenditure of the Deoli Charitable Dispensary for the year 1897.

Income.	Amount.	Expenditure.	Amount.	Balance.
	Rs. A. P.		Rs. A. P.	Rs. A. P.
Balance brought from 1896	212 1 7	On Establishment .	534 0 0	
Subscription Rs. 111 per month	1,332 0 0	Bazar medicine .	26 10 6	
From sale of quinine .	33 0 0	Europe „ .	735 5 0	
From sale of old furniture	8 12 9	Diet . .	196 9 6	
		Miscellaneous Charges . .	185 8 9	
		Purchase of quinine	49 2 0	
		Balance in hand .	...	236 10 7
TOTAL .	1,585 14 4	TOTAL .	1,349 3 9	236 10 7

The balance is about to be expended in the purchase of new beds for the Dispensary.

Vaccination.

There is one public vaccinator (Brahmin) attached to the Charitable Dispensary, whose duty is to vaccinate in the Agency and cantonments under the supervision of the medical officer. The work is done efficiently and with the best results, small-pox being practically banished from the station. In addition, the vaccinator, until quite recently, visited the neighbouring villages, but here the results were less satisfactory.

Although armed with a "*parwana*" from the Political Agent, the village authorities afforded the vaccinator few or no facilities, and the inhabitants viewed his presence with dislike.

In a village with perhaps fifty unvaccinated children, some two or three only would be vaccinated, the remainder not being brought forward or hidden away. It is said that the people object to the trouble the children give when suffering from the consequent *malaise* or irritation at the seat of inoculation. They also question the efficacy of vaccination to prevent small-pox. It appears that their objections, in this neighbourhood at least, do not partake of the nature of religious scruples.

ACCOUNT OF DEOLI.

Previous to 1888, the Meywar portion of the Mina Kherar was visited by the Deoli vaccinator, but in that year this area was made over to the Meywar vaccinators. Hence the diminution in number since that year. Further, eleven villages in Bundi and fourteen in Jeypore, within a distance of fourteen miles of the station, were visited by the Deoli vaccinator up to 1897, when the authorities of these States signified their intention of making their own arrangements within their own limits. So that at present only the cantonment and Agency of Deoli come within the province of the Deoli vaccinator.

Number of vaccinations performed, 1885-97.

YEAR.	Total number vaccinated.	REMARKS.
1885-86	525	Meywar District separated.
1886-87	648	
1887-88	364	
1888-89	443	
1889-90	397	
1890-91	289	
1891-92	320	
1892-93	374	
1893-94	436	
1894-95	411	
1895-96	334	Jeypore and Bundi Districts separated.
1896-97	359	
TOTAL	4,900	

A MEDICO-TOPOGRAPHICAL

Table showing the diseases of the Deoli Irregular

GENERAL DISEASES.																	
GROUP A.									GROUP B.		GROUP C.		GROUP D.				
Small-pox.	Cholera.	Dysentery.	Malarial Fever.	Primary syphilis.	Secondary syphilis.	Gonorrhoea.	Scurvy.	Worms.	Debility.	Rheumatic affections.	Tubercular.	Leprosy.	Allother general diseases.	Diseases of the nervous system.	Diseases of the eye.	Diseases of the ear.	Diseases of the nose.
1888	1	85	151	4	...	3	...	...	5	20	...	...	10	4	41	2	...
1886	...	15	140	8	1	5	...	...	4	45	3	...	9	1	54	4	...
1887	...	11	197	3	...	3	1	...	10	42	...	...	12	1	58	2	...
1888	...	16	141	2	1	16	...	...	3	31	...	...	21	1	5	1	...
1889	...	26	244	13	4	19	...	...	10	26	...	...	22	4	46	3	...
1890	...	13	141	3	8	7	...	...	10	29	...	...	111	3	47	...	...
1891	...	15	110	1	3	13	...	...	13	34	...	...	24	4	4	...	...
1892	...	8	26	281	0	4	4	...	11	30	...	...	12	4	53	8	...
1893	...	10	133	1	2	3	...	...	4	15	...	...	8	1	2	4	...
1894	...	5	171	2	6	2	...	...	12	15	...	...	14	7	3	1	...
1895	...	16	230	2	4	3	...	...	10	9	...	...	15	1	29	1	...
1896	...	16	98	9	2	13	...	7	8	13	...	...	12	3	27	1	...
1897	...	20	369	9	6	14	5	...	28	22	...	...	34	...	15	1	1
TOTAL	1	9	308	2,120	63	35	105	6	1	124	331	2	299	31	508	28	1
Percentage	1.08	31.00	.03	.03	1.08	...	...	1.03	4.00	...	4.43	.03	7.50	.41	...

ACCOUNT OF DEOLI.

Force Hospital for thirteen years from 1885 to 1897.

LOCAL DISEASES.

GROUP B.

Diseases of the circulatory system.	Diseases of the lungs.	Other diseases of the respiratory system.	Diarrhoea.	Dyspepsia.	Diseases of the liver.	Other diseases of the digestive system.	Goitre.	Diseases of the spleen.	Diseases of the lymphatic system.	Diseases of the urinary system.	Diseases of the genitive system.	Veneral diseases other than those in Group A.	Diseases of the organs of locomotion.	Diseases of the connective tissue.	Diseases of the skin.	Ulcers.	Poisons.	General injuries.	Local injuries.	Total.
...	10	19	5	7	5	15	...	2	1	1	...	1	1	5	28	8	...	...	51	431
...	14	35	11	3	1	18	...	1	1	1	3	...	...	9	37	5	4	...	52	402
...	19	28	18	7	1	21	...	1	2	1	5	...	3	9	36	7	1	...	65	554
1	5	41	4	1	5	17	...	1	2	2	4	...	...	18	44	12	1	...	58	489
...	16	49	13	6	2	8	...	4	3	...	17	...	3	24	57	15	...	...	77	691
1	17	23	6	3	1	7	...	1	...	...	12	...	1	16	30	14	1	...	58	559
...	6	19	6	12	1	12	...	...	2	11	11	...	...	23	36	5	1	...	47	412
...	14	40	16	4	3	13	...	3	...	...	3	...	3	12	39	52	2	2	77	728
...	11	24	3	5	3	5	...	...	...	...	5	...	3	11	28	8	1	...	43	372
...	6	15	1	...	...	6	...	3	3	...	...	...	1	15	54	5	2	...	73	442
...	7	9	3	4	2	7	...	1	2	...	3	...	...	25	48	4	...	1	50	422
...	13	...	...	5	3	14	...	1	4	...	4	...	2	11	27	6	2	...	43	340
1	17	...	4	2	1	10	...	...	...	...	...	...	3	16	27	...	1	...	92	795
2	185	302	90	58	28	153	...	18	22	8	75	2	20	150	510	142	16	2	791	6,244
...	2,729	4,418	1,733	1,055	441	3,206	...	1,265	1,321	...	1,111	...	1,209	3,175	7,730	3,110	1,233	...	11,773	...

A MEDICO-TOPOGRAPHICAL

Table showing the diseases of the Charitable

MONTHS.	GENERAL DISEASES.																			
	GROUP A.							GROUP B.		GROUP C.	GROUP D.									
	Small-pox.	Cholera.	Dysentery.	Malarial Fevers.	Primary syphilis.	Secondary syphilis.	Gonorrhoea.	Scurvy.	Worms.	Debility.	Rheumatic affections.	Tubercular.	Leprosy.	All other general diseases.	Disease of the nervous system.	Diseases of the eye.	Diseases of the ear.	Diseases of the nose.	Diseases of the circulatory system.	
January	15	561	23	21	28	8	2	16	111	1	1	13	60	248	105	2	2	
February	11	481	19	13	30	6	4	30	96	2	4	14	58	271	116	11	2	
March	22	478	29	24	27	6	5	18	137	...	...	17	64	432	115	14	...	
April	...	6	23	413	27	31	39	10	8	17	111	3	2	16	58	479	100	15	...	
May	...	23	13	277	34	28	29	7	10	25	130	2	2	13	79	330	108	14	...	
June	...	11	14	298	35	18	36	10	15	34	102	1	1	13	43	243	110	14	1	
July	...	1	51	462	34	23	34	7	18	22	149	2	2	5	50	524	205	8	1	
August	92	898	19	25	51	12	10	24	131	...	...	3	52	931	204	12	...	
September	80	1,577	31	25	21	7	20	29	122	2	12	13	72	952	149	8	10	
October	47	1,826	22	14	23	6	11	38	129	2	1	11	50	1,554	118	10	...	
November	35	1,182	18	23	24	2	2	29	103	1	1	5	57	373	99	5	3	
December	16	777	24	18	15	6	3	18	101	1	1	9	49	293	88	8	4	
TOTAL.	1	41	420	9,230	315	263	352	87	107	300	1,182	17	17	132	622	5,630	1,517	121	21	
Percentage.	0.10	1.03	22.71	0.77	0.68	0.88	0.21	0.26	0.73	3.49	0.04	0.04	0.04	0.32	1.70	13.85	3.73	0.20	0.05	

ACCOUNT OF DEOLI.

Dispensary for seven years from 1891 to 1897.

LOCAL DISEASES.

GROUP E.

Diseases of the lungs.	Other diseases of the respiratory system.	Dyspepsia.	Diseases of the liver.	Other diseases of the digestive system.	Gonorrhoea.	Diseases of the spleen.	Diseases of the lymphatic system.	Diseases of the urinary system.	Diseases of the generative system.	Veneral diseases other than those in Group A.	Diseases of the organs of locomotion.	Diseases of the connective tissue.	Diseases of the skin.	All other local diseases.	Ulcers.	Poison.	General injuries.	Local injuries.	Total.	
18	270	17	128	21	182	...	21	7	7	22	4	4	104	374	...	215	2	9	65	2,607
19	213	19	108	15	233	...	16	1	7	15	...	1	100	405	...	214	3	...	71	2,608
32	197	43	177	11	331	...	26	5	5	9	1	1	157	394	...	193	8	...	82	3,161
21	147	51	205	20	359	...	26	6	10	16	2	3	131	295	...	171	3	...	80	2,904
9	128	62	203	22	262	...	28	5	5	17	3	5	210	273	...	153	6	...	79	2,596
7	107	79	208	12	234	...	25	5	4	17	1	4	271	276	...	171	6	...	86	2,518
8	122	123	213	17	272	...	17	4	10	18	4	2	312	345	...	230	11	...	93	3,399
6	110	177	221	9	313	...	22	3	10	14	4	4	312	466	6	260	9	...	10	4,610
10	145	112	207	20	349	...	40	6	6	16	6	3	224	417	...	370	12	...	169	5,232
9	166	40	168	18	362	...	46	3	11	17	3	2	199	319	1	277	8	4	73	4,186
5	160	36	151	16	211	...	54	7	5	12	2	8	138	266	...	214	3	...	79	3,120
14	272	82	123	22	224	...	40	5	9	15	3	6	152	359	3	283	3	...	72	3,120
158	2,039	841	2,112	203	5,333	...	361	57	89	188	32	43	2,310	4,180	10	2,851	73	12	1,049	10,640
6'39	5'01	3'07	5'10	0'50	8'10	...	0'09	0'14	0'21	0'20	0'08	0'10	5'58	10'11	0'02	7'01	0'16	0'03	2'58	

*Health of Deoli.*

Deoli has the reputation of possessing a fairly good climate compared with most stations on the plains. The climate during the four cold months is excellent. The great heat of the summer months is modified by utilising the hot wind which blows throughout the day from the west and south-west to work khas tatties. The small rainfall and dry soil are also advantages.

The chief sources of ill-health are fevers in September, October and November, chest affections in the cold weather, and small-pox (in the district around) at the end of the cold season. European children thrive well, and the health of the troops is extremely favourable compared with other native corps, the average admission and mortality rates being extremely low.

Surgical Disorders.

The Surgery of Deoli is "General Surgery." Four hundred and thirty-four major operations have been performed during the last twelve years, of which three hundred and ten have been performed during the period 1893-1897.

Cancer.—There have been twenty-five operations during the last twelve years for cancer, of which six were for epithelioma of the penis, and several for epithelioma of the loin, the result of continuous irritation of dirty waist cloths. Two cases of mycetoma also demanded removal of the parts.

Eye operations—have been most frequently performed in late years. During the last five years fifty-eight operations for cataract, and forty-one other eye operations have been done, including iridectomies, enucleations for entropion, etc. Granular ophthalmia and conjunctivitis are common.

Entropion is less common than might be expected.

Operations on the head—include some removals of pharyngeal polypi. I have done five excisions of the jaw at Deoli, four of the superior maxilla for various malignant growths, and one for an osteoma of the lower jaw, the bone being divided near the angle on each side, and two restorations of the nose in women who have been mutilated by jealous husbands. It would appear that this form of revenge is not common in the neighbourhood, as no cases had presented themselves at the dispensary during the previous eight years.*

Operations on the respiratory organs—are uncommon. In 1894 I treated a case of empyema at the regimental hospital by excision of a portion of rib, incision and drainage, with complete success, the patient, a sepoy, now being one of the strongest men in the regiment.

Digestive system.—Cancer of the lips and tongue seem much rarer than in Europe. Only one case of each has appeared in Deoli in over two years. Piles and fistula are not very common in this district, the inhabitants being chiefly hardy rustics. Hernia (excluding umbilical in infants) is uncommon, only two cases of strangulated hernia having been treated in the hospital in ten years. In one of these the man sought treatment after the gangrenous sac had burst in two places, in the groin and scrotum. Nevertheless by appropriate

* It does not follow. It has already been shown that little surgery was done in previous years.—T. H. H.



treatment he made a complete recovery, the sinuses being made to close by occasional application of the actual cautery. This may be considered "spontaneous radical cure."

Abscess of the liver—which has now passed to the domain of Surgery is very rare in Deoli, no case having been seen in the Charitable Dispensary or Force in ten years. In 1895 a case occurred in a young Mina sepoy of the Deoli Irregular Force. The presence of pus having been proved by aspirator, the abscess was opened aseptically from the flank by a free incision, and the cavity drained, complete recovery resulting. I also operated on a case at Tonk in which the abscess had burst into the pleura simulating empyema. Although the patient seemed moribund when put on the table, the abscess was freely opened aseptically, a portion of rib being excised. I was assisted in this operation by Miss B. Bose, M.B., who conducted the after treatment, and who has since informed me that the patient made a complete recovery.*

Urinary system.—A few cases of stricture have been treated by dilatation or perineal section. Extravasation of urine and urinary fistula, the result of neglected cases, have also received appropriate operative treatment. Stone in the bladder is not common, twenty-seven cases having been treated by lithotomy and two by litholapaxy in twelve years with two deaths; of these fifteen cases have been operated on in the last four years, but many of them came from villages far distant from the station.†

Obstetric operations.—Seven cases of difficult labour have been treated in the Charitable Dispensary in ten years, all being neglected cases, seeking medical aid only as a last resource. It is satisfactory to add that all recovered, with one exception. The women were of the lower caste (Chamars or Malis) who do not seem to be so prejudiced in these matters as the upper caste Hindus or Mussalmans. Of the six cases, two were delivered by the forceps, two by craniotomy, a hand presentation by version, and two neglected transverse presentations by embryotomy.

Embryotomy is performed by the local midwives by digging out the foetus with the finger nails.

Amputations.—Seventeen amputations have been performed in twelve years with one death. One amputation of the arm was for snake-bite. The others were for disease or accident. Patients are unwilling to consent to amputation except as a last resource.

Tumours.—Sarcomata, cystic and fibroid growths are not uncommon, and the removal of these constitute a considerable proportion of the operations performed. Pendulous fibroid growths springing from the testes, labia, or nates are common. This year (1898) I have performed a successful ovariectomy. This was the third case of ovarian cyst that has presented itself at Deoli in four years. The first two refused operative treatment.

Surgical diseases of the Vascular system.—Seen very rarely, as I cannot find any record of any case of aneurism or varix demanding treatment by operation.

Venereal Diseases—are not common among either the civil population or troops.

* I had two cases of old encysted abscess of the liver in young Minas from Deoli in 22 years at Jeypore. The facts were ascertained by *post mortem* examination.—T. H. H.

† Here again the good results were no doubt due to the reputation of the operator.—T. H. H.



Abscesses—in different parts of the body are frequent and are often allowed to attain a large size before treatment is sought.

Tubercular affections—of the bones, joints, etc., are uncommon. A few cases of caries of tarsus have required operation. I performed with excellent results on arthrectomy of the knee in a youth with a chronic tubercular joint.

Necrosis—the result of injury is more common, and there is a fair proportion of *fractures and dislocations*—the result of injury or accident.

Ulcers—of all kinds and skin diseases are very common, itch, eczema, and ringworm (*tinea tonsurans*) being most frequently seen. Favus is less common.

MEDICAL DISEASES.

Small-pox.—Small-pox is a yearly visitation in the neighbourhood of the station, breaking out in the district at the end of every cold season, more or less severely, so that very few persons among the unvaccinated escape the infection, and almost all the recruits for the Deoli Irregular Force bear traces of the disease. In 1890 it was recorded that every man in the Force with six exceptions showed marks of having had small-pox in childhood, and that only one sepoy had been attacked in twelve years with the disease. Formerly epidemics were common in the bazars. Such a visitation took place in 1884, when there were also sixteen cases among the regimental followers, in 1886 in the Agency Bazars, in 1888, and in 1886 when there were seven cases. The last outbreak was in 1896, when 37 cases occurred in the Sadar Bazar, with 5 deaths. The children attacked were chiefly of the Bannia (trader) caste, who had either escaped vaccination altogether, or had been insufficiently protected by careless inoculation. In these cases the infection can almost invariably be traced from outside, being introduced by the inhabitants of the neighbouring villages.

Cholera.—Cholera epidemics are but occasional occurrences at Deoli, and as a rule the number of cases is not large. The disease either spreads from the neighbouring States of Ketch, Bundi, Tonk, Jeypore or Meywar, or is imported by travellers, usually pilgrims, who halt at Deoli on their way from the railway at Nasirabad to their homes southward.

Epidemics occurred in the following years :

1870.—Bad epidemic—Forty cases in infantry alone.

1875.—In September cases occurred in the Deoli Irregular Force and 4th Regiment Bengal Cavalry.

1878.—In the summer and disappeared in September. Troops moved out of cantonments.

1879.—Epidemic

1881.—Epidemic

} No particulars available.

1884.—One case in July.

1885.—Nine cases with five deaths in May and June. Confined to the Agency Bazar. Four cases occurred in one house with a filthy latrine, and with no provision for drainage fall-



ACCOUNT OF DEOLI.

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1886.—Thirteen cases in Agency and six in cantonments.

1889.—Fifty cases with twenty-one deaths.

Fourteen in Agency. Thirty-three with sixteen deaths in the Sadar Bazar, and three cases among followers of the Deoli Irregular Force. Troops not attacked. Lasted from July 4th to August 12th. Disease broke out on the same day in the Sadar and Agency Bazaars, and was apparently imported by a woman from Bundi, where the disease was prevalent. Epidemic characterised by absence of premonitory diarrhoea and of secondary fever and other complications, patients either dying in the state of collapse or completely recovering. More than two-thirds of the females attacked recovered, while 65 per cent. of the infected males died.

1892.—Seventy cases with thirty-five deaths. Origin traced to some infected pilgrims returning from Hardwar Fair, who encamped on the open ground near the Agency Bazar on 17th and 18th April. On 19th and 20th six cases broke out in the Chamars' quarters in the north-east corner of the Agency Bazar. Altogether twenty-three cases and eleven deaths occurred in the Agency, nine of which with four deaths took place in the compound of the Agency Hospital. The disease spread progressively round the station, the cavalry lines being attacked on 23rd April, five fatal cases occurring among the sowars, and seven among the children and followers, with two deaths. A Hospital Assistant was next carried off at the Regimental Hospital, after which three cases with two deaths occurred in the adjoining Mission compound on May 2nd. Lastly the infantry lines and Sadar Bazar were invaded on May 25th, three cases with two deaths occurring among the sepoys, and twenty-eight cases with twelve deaths in the bazar. The epidemic terminated on August 14th.

I think these cholera epidemics indicate most clearly the necessity of improving the sanitary arrangements of Deoli.

List of cases according to age and sex.

Age.	Male.	Female.	Total.
Under 10 years of age	13	5	18
Between 10 and 20 years	5	...	5
" 20 " 30 "	14	...	14
" 30 " 40 "	7	4	11
" 40 " 50 "	14	2	16
" 50 " 60 "	5	1	6
TOTAL .	58	12	70

*List showing Deaths according to Age and Sex.*

Age.	Male.	Female.	Total.
Under 10 years of age	7	3	10
Between 10 and 20 years . . . . .	...	1	1
" 20 " 30 "	6	1	7
" 30 " 40 "	1	2	3
" 40 " 50 "	7	3	10
" 50 " 60 "	4	...	4
TOTAL .	25	10	35

There has been no cholera in Deoli since 1892.

Influenza.—An epidemic of influenza attacked Deoli in 1890. In the Force over 100 men were admitted to hospital and over 300 treated as out-patients, inclusive of followers. The great majority were of the simple variety, characterised by depression, headache, sense of coldness and sore throat, bowels confined, with yellow stools. Some fever always at first. There were some cases of diarrhoea or of dry cough of a painful character. The usual duration of the attack was from two to five days. A few relapses and some long convalescences occurred. Three cases were complicated by pneumonia, of whom all died.

Ague and Malarial Fevers.—In spite of the good drainage of the station and the absorbent nature of the soil ague and remittent fever are the great causes of sickness in Deoli. The period of maximum prevalence is from the middle of August to the middle of November. The fevers can generally be traced to chill brought about by negligence or insufficient clothing. The quotidian ague is by far the most common form and yields readily to quinine. The fevers are as a rule of a mild type, unless complicated by pneumonia.

Enlargement and induration of the spleen and liver from malarial influences are frequently seen, nearly always in ill-clad and ill-cared-for children. In 1895 the system of selling packets of quinine in the District Post Offices, procurable from the Deoli Charitable Dispensary, was introduced and has succeeded well. The great prevalence of ague and malarial fever is shown by the following tables.

ACCOUNT OF DEOLI.

Deoli Irregular Force.

Year.	Average strength present.	Total admissions.	Admission for ague and malarial fever.	Percentage.	Rainfall.
1886	796	492	148	30.7	19.52
1887	801	564	196	34.6	30.51
1888	803	489	141	28.8	25.50
1889	787	691	239	34.5	31.41
1890	778	555	141	25.4	11.65
1891	788	438	115	26.2	21.57
1892	793	728	303	41.6	29.46
1893	754	378	132	34.9	23.73
1894	744	448	171	38.1	33.10
1895	748	482	228	47.3	20.68
1896	765	340	114	33.53	28.78
1897	792	705	369	52.34	23.53

Charitable Dispensary.

Year.	Total number of cases.	For ague and malarial fevers.	Percentage.	Rainfall.
1886	2,312	448	13.947	19.52
1887	3,594	577	16.057	30.31
1888	4,116	729	17.71	25.50
1889	4,424	937	21.18	31.41
1890	4,110	826	20.097	11.65
1891	4,539	929	20.46	21.57
1892	5,863	1,967	33.549	29.46
1893	5,351	1,285	24.00	23.73
1894	5,736	1,127	19.648	33.10
1895	6,052	1,298	21.44	20.68
1896	6,619	1,077	16.27	29.00
1897	6,821	1,524	22.34	21.82

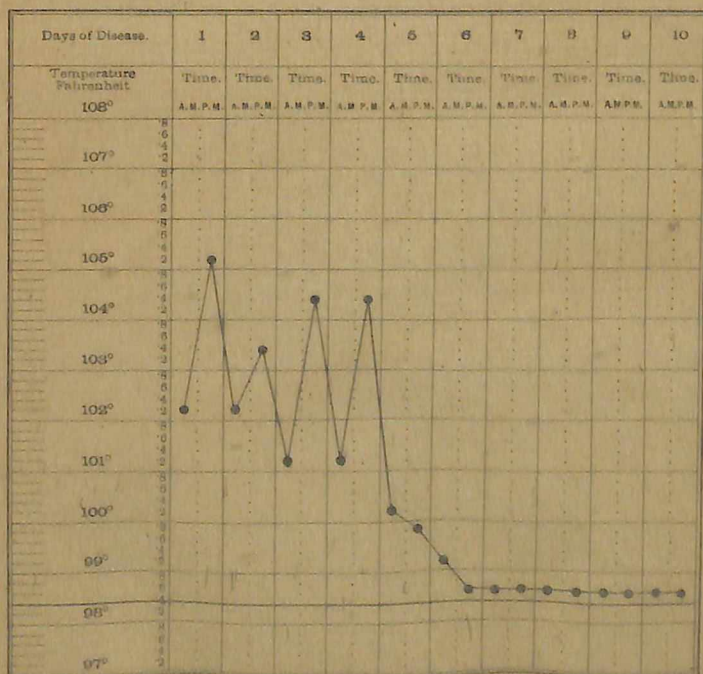
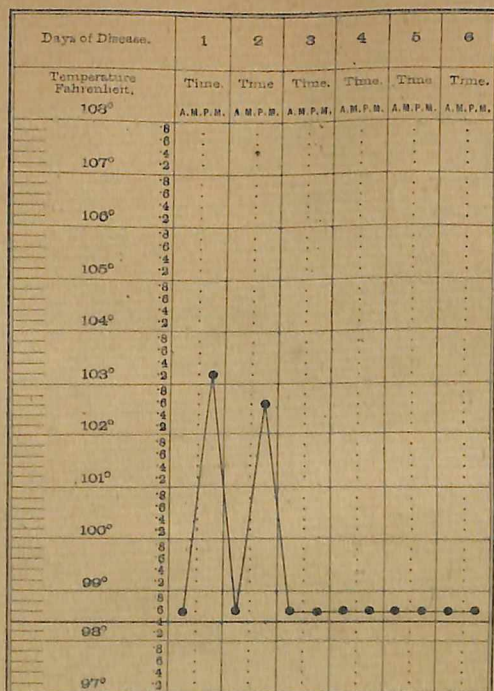
From the above tables it does not appear that the increase or decrease of rainfall influences much the amount of malarial fevers, as is often stated.

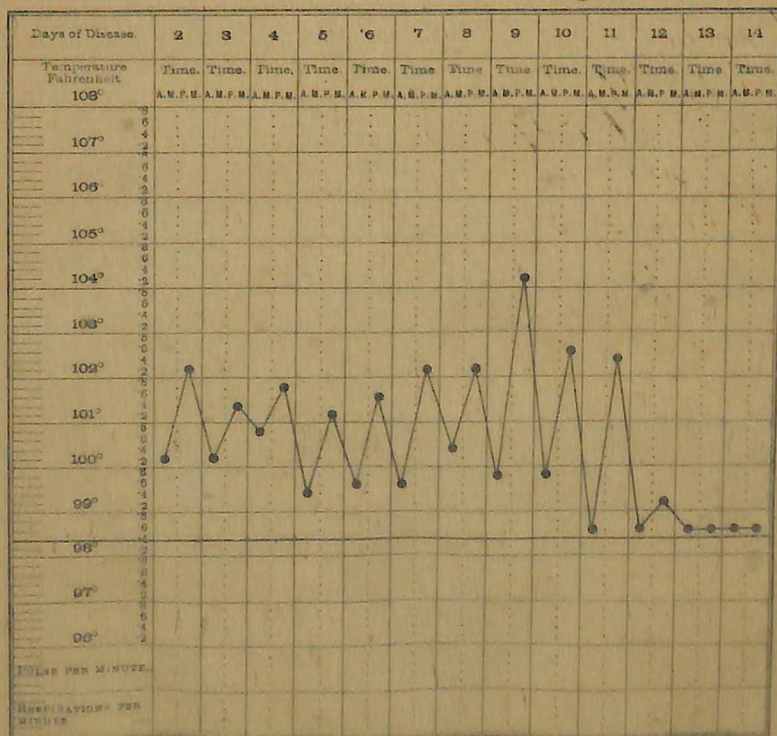
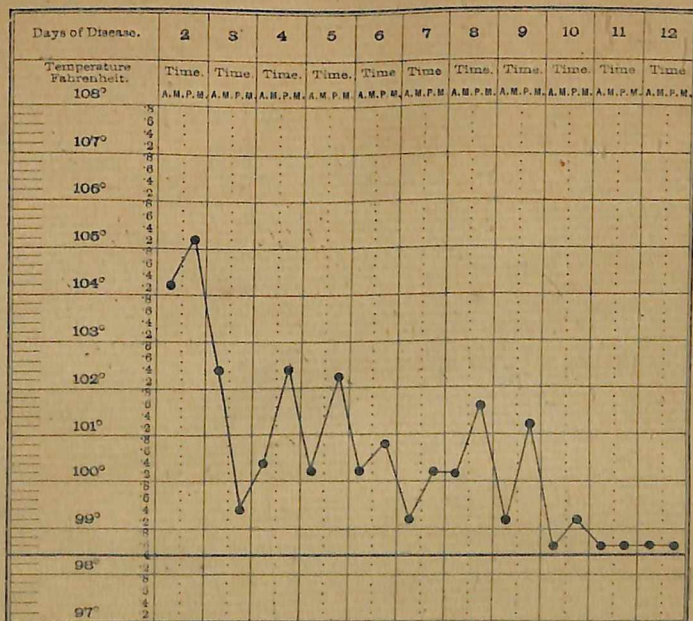
The following charts are selected from a large number to show the ordinary types of fever as seen in Deoli.



FEVER TYPES, DEOLI.

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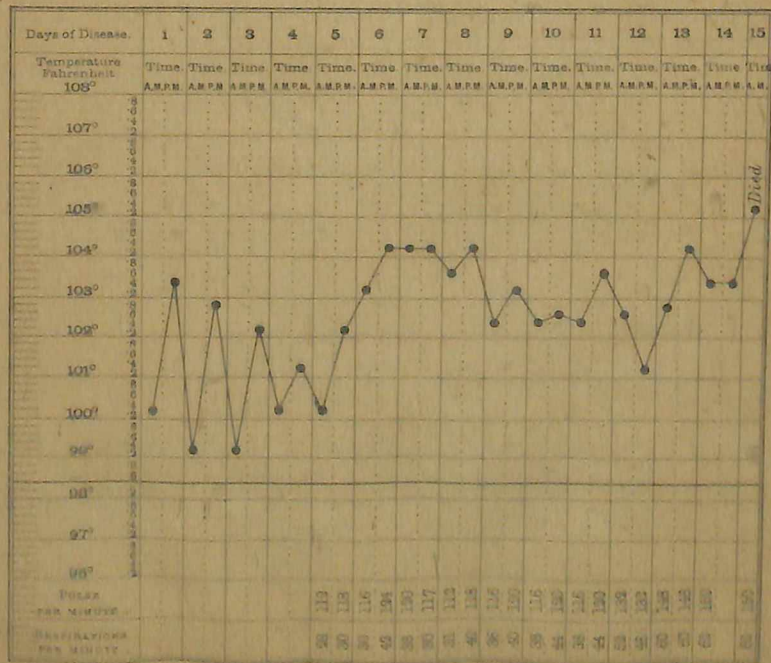
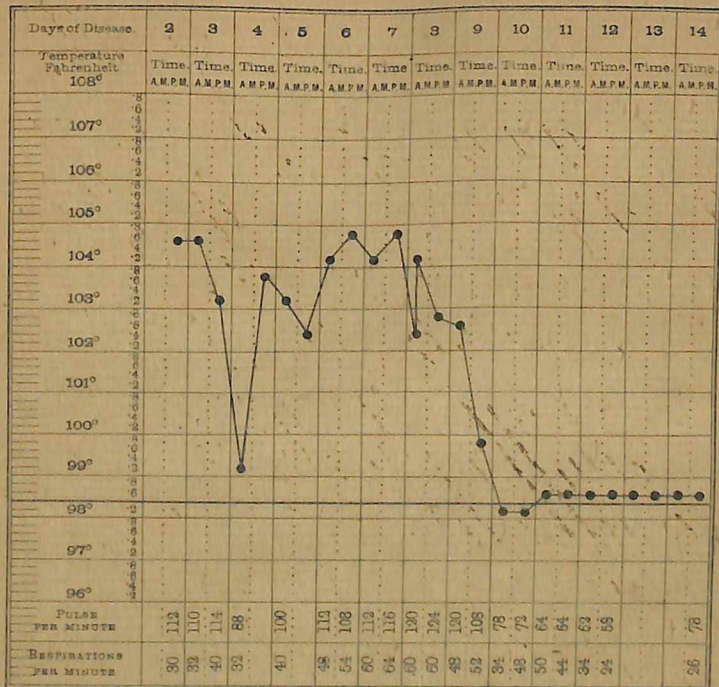






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5. Malarial Fever, complicated by onset of Pneumonia
on the fourth day. Pulse-Respiration Ratio on
second day 4:1 nearly, on fifth day 2½:1.



5. Intermittent Fever, complicated by Pneumonia. Death.



Dysentery—is uncommon at Deoli, the dryness of the climate accounting for this, and the cases are nearly always of a mild catarrhal type, quickly yielding to treatment. Cases come in with the rains (July), and increase in number in August and September, and then diminish until the commencement of the cold weather, when the disease practically disappears.

Guinea Worm—frequently attacks the troops during the rains, often leaving, as a sequel, slowly healing abscesses with considerable loss of power over the limb for greater or shorter periods.

Rheumatism—is fairly common, the chronic forms affecting the middle aged and old persons. I have only seen one case of acute rheumatism at Deoli.

Enteric Fever—I have never seen here.

Cardiac Disease—is extremely rare.

Tubercular Affections—are very uncommon.

Leprosy—is rarely seen, and then only in wanderers passing through the station.

Sciatica—is common; but diseases of the nervous system are remarkably rare, and insanity is very uncommon.

Diseases of the Respiratory Organs—Bronchitis and pleurisy are frequent in the winter months, and in individuals of all ages. This is not remarkable when one considers the scarcity of clothing worn and the habits of the people. Pneumonia is the great cause of mortality among the robust, both among the troops and the civil population. In my opinion, these pneumonias are nearly always secondary to malarial fevers, in which they arise as a complication. My reasons for this view are,—that on admission the cases, if seen early enough, show the normal pulse-respiration ratio, although high temperature and consequent increase of the frequency of the pulse and respirations are present. On the onset of the pneumonia the pulse-respiratory ratio becomes altered, and at the same time the temperature chart shows an exacerbation. The course of the pneumonia does not differ from acute pneumonia as seen in Europe. The *post mortem* appearances also are identical.

Diseases of the Digestive Organs.—Diarrhoea is not common, whereas constipation frequently calls for treatment in Deoli. The hardness of the water accounts for this. Dyspepsia, and colic are common, and generally due to errors of diet.

BIRTH AND DEATH-RATES, DEOLI CANTONMENT.

No vital statistics are available for the Agency or Districts. Births and deaths are registered in the Cantonment, but unfortunately all records previous to 1892 have been destroyed.



A MEDICO-TOPOGRAPHICAL

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Birth Register, Deoli Cantonment, 1892—97.

Year.	January.	February.	March.	April.	May	June.	July.	August.	September.	October.	November.	December.	Total.	Male.	Female.
1892 . . .	9	3	3	5	7	7	7	7	4	7	4	4	67	51	16
1893 . . .	3	4	...	8	3	...	8	4	11	13	14	19	87	41	46
1894 . . .	8	9	1	5	4	8	10	7	6	7	6	4	75	42	33
1895 . . .	6	4	8	6	11	9	14	12	8	9	7	9	103	55	48
1896 . . .	7	7	4	9	3	9	11	9	10	9	11	10	99	51	48
1897 . . .	11	11	5	9	11	7	12	19	11	13	7	10	126	66	60
TOTAL . .	44	38	21	42	39	40	62	58	50	53	49	56	557	307	250

Death Register, Deoli Cantonment, 1892—97 (Troops included).

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Male.	Female.
1892 . . .	11	8	7	13	6	15	4	4	8	24	15	6	121	71	50
1893 . . .	10	7	6	1	2	1	4	5	5	5	5	14	65	36	29
1894 . . .	8	4	13	8	6	3	3	14	7	1	9	4	80	38	42
1895 . . .	1	7	6	5	5	2	7	9	12	9	3	12	78	45	33
1896 . . .	6	3	17	10	7	7	12	6	8	9	7	4	96	54	42
1897 . . .	5	6	2	2	5	4	3	5	8	15	5	5	65	36	29
TOTAL . .	41	35	51	39	31	32	33	43	48	63	44	45	505	280	225

Ratios, per mille, Deoli Cantonment, Civil population (men of the Force excluded).

	1892.	1893.	1894.	1895.	1896.	1897.
Births per 1000 of population .	30.08	39.06	33.68	46.25	51.85	66
Deaths per 1000 of population	49.84	26.49	35.00	33.68	50.28	34.04



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Death Rates among Troops at Deoli.

	Average strength at Deoli.	Deaths.	Ratio per mille.	Death ratio per mille for whole Native army.
1892	795	10	12'58	.....
1893	754	6	7'95	.....
1894	744	2	2'69	10'76
1895	748	3	4'00	11'60
1896	765	3	3'92	.....
1897	792	4	5'05	.....

The year 1892 was an exceptionally unhealthy one, and the station was also visited by cholera in that year.

List showing the names of the Political Officers who have been in charge of the Haraoti Agency from 1860 to 1898.

NAMES.	Dates of appointment.	
	From	To
Captain H. Beynon	2nd January 1860	18th March 1864.
„ H. Phillpots	19th March 1864	1st June 1865.
„ N. Bruce	6th June 1865	7th June 1869.
„ W. J. W. Muir	8th June 1869 .	14th July 1872.
„ W. Robert	15th July 1872	14th October 1872.
„ W. J. W. Muir	15th October 1872	2nd February 1873.
Colonel McDonald	3rd February 1873	19th March 1873.
Captain J. Berkeley	20th March 1873	17th October 1874.
„ H. Clay	18th October 1874	25th March 1875.
Colonel J. Wright	26th March 1875	6th April 1875.
Major H. Clay	8th April 1875	14th April 1875.



A MEDICO-TOPOGRAPHICAL

List showing the names of the Political Officers who have been in charge of the Haraoti Agency from 1860 to 1898—contd.

NAMES.	Date of appointment	
	From	To
Captain W. J. W. Muir	15th April 1875	16th August 1876.
Major H. Clay	17th August 1876	18th November 1876.
Lt.-Col. J. Berkeley	19th November 1876	27th December 1878.
Major P. W. Powlett	28th December 1878	6th February 1879.
Major C. Bayley	7th February 1879	29th March 1880.
„ W. J. W. Muir	30th March 1880	31st March 1885.
„ J. Biddulph	1st April 1886	19th March 1889.
„ A. P. Thornton	20th March 1889	21st November 1891.
Captain J. A. Bell	22nd November 1891	3rd December 1891.
„ J. Ramsay	4th December 1891	30th April 1892.
Major T. Pears	1st May 1892	4th November 1892.
„ A. P. Thornton	5th November 1892	18th March 1895.
Captain A. F. Pinhey	19th March 1895	30th April 1895.
„ J. A. Bell	1st May 1895	10th July 1895.
Lieut. R. B. Berkeley	11th July 1895	1st November 1895.
Captain J. A. Bell	2nd November 1895	5th December 1895.
Mr. A. L. P. Tucker, C. S.	6th December 1895	Up to date.

Commanding Officers, Deoli Irregular Force.

	From	To
Captain (afterwards Colonel) J. D. MacDonald.	1860 (foundation of Force.)	1878
Major (afterwards Colonel) H. Clay	1878	20th April 1884.
Colonel F. W. Boileau	21st April 1884	11th April 1890.
Captain (now Lieut.-Colonel) J. A. Bell	12th April 1890	Present time.



ACCOUNT OF DEOLI.

CSL

List of Agency Surgeons who have been in Medical Charge of the Haraoti and Tonk Political Agency since 1860.

NAMES.	Date of appointment	
	From	To
Asst.-Surgn. W. S. Playfair . . .	1st April 1860	Not ascertainable.
" " A. D. Campbell . . .	17th August 1860	March 1864.
" " — Morice . . .	April 1864	23rd July 1864.
" " F. W. A. DeFabeck . . .	24th July 1864 . . .	23rd April 1869.
Surgn.-Major J. D. Crawford . . .	1st May 1869 . . .	30th November 1869.
Surgn. W. Eddowes . . .	1st December 1869 . . .	2nd March 1874.
Surgn.-Major R. Mantell . . .	3rd March 1874 . . .	21st March 1874.
Asst.-Surgn. F. W. A. DeFabeck . . .	22nd March 1874 . . .	September 1874.
Surgn.-Major R. Mantell . . .	October 1874 . . .	November 1874.
" " F. W. A. DeFabeck . . .	December 1874 . . .	15th April 1875.
Surgeon D. P. Macdonald . . .	16th April 1875 . . .	14th December 1875.
Surgn.-Major F. W. A. DeFabeck . . .	15th December 1875 . . .	7th April 1877.
Surgeon J. E. C. Ferris . . .	8th April 1877 . . .	7th July 1877.
Surgn.-Major F. W. A. DeFabeck . . .	8th July 1877 . . .	19th September 1877.
Surgeon J. E. C. Ferris . . .	20th September 1877 . . .	25th November 1877.
Surgn.-Major F. W. A. DeFabeck . . .	26th November 1877 . . .	June 1878.
Surgeon J. S. Gunn . . .	July 1878 . . .	6th August 1878.
Surgn.-Major F. W. A. DeFabeck . . .	7th August 1878 . . .	15th July 1879.
Surgeon J. S. Gunn . . .	16th July 1879 . . .	6th November 1879.
Surgn.-Major H. D. S. Compigné . . .	7th November 1879 . . .	11th January 1880.
" " J. H. Newman . . .	12th January 1880 . . .	1st February 1880.
Surgeon A. Barclay . . .	2nd February 1880 . . .	4th March 1880.
" A. Adams . . .	5th March 1880 . . .	13th November 1880.



List of Agency Surgeons who have been in Medical Charge of the Haraoti and Tonk Political Agency since 1860.—contd.

NAMES.	Date of appointment	
	From	To
Surgn.-Major H. D. S. Compigné . . .	14th November 1880	30th January 1881.
" " W. Caldwell . . .	31st January 1881	25th June 1881.
Vacant	26th June 1881	8th August 1881.
Surgeon J. F. Tuohy . . .	9th August 1881	7th December 1881.
Surgn.-Major F. W. A. DeFabeck . . .	8th December 1881	3rd July 1882.
Surgeon H. F. Griffiths . . .	4th July 1882	30th November 1882.
Surgn.-Major H. Whitwell . . .	1st December 1882	6th September 1884.
Surgeon H. N. V. Harrington . . .	7th September 1884	17th October 1888.
" R. Shore . . .	6th November 1888	17th January 1889.
" G. H. D. Gimlette . . .	30th February 1889	13th March 1889.
" J. G. B. Bell . . .	5th July 1889	8th November 1889.
" H. N. V. Harrington . . .	28th November 1889	30th June 1892.
Surgn.-Capt. R. Shore . . .	1st July 1892	20th April 1893.
" " C. M. Moore . . .	21st April 1893	17th November 1893.
" " J. Chaytor White . . .	18th November 1893	29th December 1893.
" " H. R. Woolbert . . .	30th December 1893	1st April 1896.
Surgn.-Lieut.-Col. P. A. Weir . . .	2nd April 1896	12th May 1896.
Surgn.-Capt P. J. Lumsden . . .	13th May 1896	23th October 1896.
Surgn.-Major H. R. Woolbert . . .	29th October 1896	Up to date.



ETHNOLOGY.

(Chiefly from the Haraoti Agency Reports.)

The fixed population of the districts round Deoli is entirely Hindu, the few Mussalmans present in the station being Government servants, butchers, private servants or water-carriers. There are at present only 42 Mussalmans among the Troops. The Hindus consist of the usual castes, the only local tribes meriting special description being the Hara Rajputs and the Puriar Minas. These two tribes together form the majority of the Infantry of the Deoli Irregular Force. The composition of the Force in 1897 was as follows :—

Minas	335
Rajputs	126
Panjabi Sikhs (in Cavalry only)	104
Gujars	156
Other Hindus	54
Mussalmans	42
TOTAL	817

The Hara Rajputs.

Haraoti is said to have derived its name from the Hara tribe of the Chohan Rajputs. After their settlement it was called Harawati, or the home of the Haras, and the term Haraoti is a corruption easily arrived at.

This etymology is doubted by some, but they are unable to offer any other explanation of its geographical appellation sufficiently convincing to induce the suppression of the version here given.

Ere detailing particulars in connection with this tribe, some mention of the Chohans, the parent stem, which claims the Hara as an offshoot, is called for.

The four principal families of Rajputs who claim descent from the Chutries and who are undoubtedly the foremost in reputation, are the Sisodyas, the Rahtores, the Kachwahas and the Chohans. The Maha Rana of Meywar (Udaipur) represents the head of the Sisodya branch, the highest in rank from the antiquity of its power. The Rahtore family established themselves in Marwar (Jodhpore), and the Kachwaha tribe in Amber (Jeypore), whilst the Hara, a celebrated and numerous branch of the Chohans, settled in and became the rulers of Haraoti.

The legends I am now about to relate briefly regarding the Chohans and their offshoots are taken from the records of their Charuns, a religious class common to Rajputana, one of whose chief duties is to study and quote authoritatively the annals of the State or the genealogy of a family. And the following story told by them is implicitly believed and handed down from father to son.

It is said that the deity Brahma, when performing a religious ceremony on Mount Abu, was disturbed in his devotions by a demon who dwelt there. The God being enraged at the occurrence created four Rajputs to destroy the intruder, who, however, according to the sequel must have escaped his doom. The descendants of the four Rajputs thus



created are called Pudeear, Solankis, Chohan and Punwar. Chohan is also styled "Chabujah" (four armed).

As recorded by Tod, Manika Rai, King of Ajmere, was the founder of the Chohan race. His son named Jot was slain in the capture of that ancient city. In remembrance of the boy's death, the Chohans deified him, and Jot Puri is still one of the most sacred of the Chohan Penates.

From this celebrated Rajput family sprang as many as 24 branches, of which the most distinguished branch is the Hara. But before describing it as a separate and distinct tribe, it behoves me to show upon what grounds the Haras claim descent from the Chohan. The following is their own version of the legend:—

Unnu Raj (Chohan) was the Rajah of Hansi-Hissar. His Queen, one Dudawatti (Punwar), after being twelve years with child, was delivered of an egg. The egg was buried under a dry mango tree and the effect upon the withered stem was to cause it to flourish and become green. The Pandits on seeing this miracle caused the egg to be worshipped, and it had been some time in veneration when Gaihraram, the demon who had disturbed Birmaji at Mount Abu, appeared with his legion in Golconda in the Dekhan and fought a battle with the Chohan Prince of that place where he vanquished the Rajput and killed every Chohan save a girl by name Suran, the daughter of one Bandhir (Chohan). Gaihraram, after this memorable event, marched on Hansi-Hissar.

Unnu Raj, hearing of his approach, became alarmed and prepared for flight, purposing, however, to take the sacred egg with him. With this view he placed it in his wife's palankeen, but its weight effectually prevented the bearers lifting it from the ground. Suddenly a voice was heard proceeding from the egg remonstrating against the flight, and adding that its inmate would encounter the demon.

The Queen hearing this at once apprised her lord. At about midnight the egg burst, and a giant twenty-one feet high came forth and fought Gaihraram. Both were slain in the conflict.

It so happened that at this time the girl Suran, the sole Chohan survivor at Golconda, was seated under an Assapalia tree. The tree split asunder and a goddess, named Assapuri, appearing from the rent, informed Suran that the demon who had killed her father had himself been destroyed by a Chohan Rajput at Hansi-Hissar, and she bade the girl accompany her to the battle-field. On arriving there the goddess gathered together the bones of the giant who had been born of the egg, and placing them in their proper places, brought him to life again calling him "Ust Pal Hada." He married the girl, and their descendants were ever after called "Haras," a corruption from "Hada" a bone.

One of these by name Devaji was living when Jaina and Usaira (Minas) reigned at Bundi. He entered the service of these kings, and shortly afterwards, on the pretence of a wedding feast, invited them to his residence, treated them to spirituous drinks until they were fairly intoxicated, and had them destroyed. Devaji thus ascended the *gaddi* of Bundi, which thenceforward became the capital of Haraoti, the country of the Hara (Chohan) Rajputs.

The valour of the Haras soon gained them other territories, and after crossing the Chambly by conquest or grant, they extended their possessions to the confines of Malwa Bundi



was afterwards divided into two distinct chiefships. Kotah, the southern half, became the portion of a younger son, and the transcendent ability of the minister Zalim Singh rendered that principality in wealth and importance the first perhaps, for the time, in Rajasthan. As a reward for his brilliant services and in concurrence with his own natural desire to perpetuate his name, the Prime Ministership of Kotah was made hereditary, and thus while the Maha Rao was titular sovereign of the country, his chief officer of State was *de facto* ruler. With Zalim Singh the anomaly was not felt irksome, but it may readily be imagined that only consummate tact and ability could avert internecine trouble under such a state of things. And so it proved. Zalim Singh's son inherited his father's office, but not his father's talents. Anarchy ensued. The British Government were compelled to mediate, and so inconvenient was the arrangement found to be, that in order to annul the transaction the chief of Kotah eagerly consented to make over one-third of his territory rather than be forever a cipher and little better than a State prisoner in his own capital. This arrangement was carried out, and Zalim Singh's grandson became the Chief of Jhallawar, which, from that day, was considered a separate and third principality in Haraoti.

In personal appearance the Hara Rajput will be found to differ little from his brethren of other clans. A fair specimen may be described as above the middle height, with graceful and well proportioned limbs. His strength would appear wiry rather than powerful. He is upright and has a commanding presence, which in others may be acquired, but in the Rajput would seem to be inherent. The face is well shaped, the nose and mouth finely cut, and the eye small and long, bright and clear without impressing the observer as indicative of much intelligence. The Rajput generally wears an excellent moustache and whisker, the former carefully brushed up towards the eyes giving him a somewhat fierce appearance and expression, whilst the whisker is allowed a luxuriant growth on chin and cheek, carefully parted in the centre and brushed to either side, the ends, except on occasions of etiquette, being wound round each ear and the whole enveloped in a cloth passing under the chin and fastened at the crown of the head. This portion of his costume much resembles the face cloth used to support the fallen jaw of a corpse. It is a marked disrespect in most part of Rajputana to wear this cloth in the presence of a superior, and it is taken off for the moment, even when passing the superior in the open air.

The Hara Rajput partakes freely of tobacco, spirituous drinks and opium. He will take flesh of all kinds save that of the cow and buffalo. He eats twice during the day without any change in the character of the morning and evening meals, which generally consist of thick and coarse flour cakes, all kinds of vegetables, milk and fish.

Rajput women are kept strictly *purda-nashin*, i.e., they never appear in public.

The Hara Rajput cannot marry in his own, but can marry into any other of the Rajput tribes. A very strict observance of this rule is enforced. Not only is intermarriage prohibited between families of the same clan, but between those of the same tribe, and though centuries may have intervened since their separation, and branches thus transplanted may



have lost their original patronymic, they can never be regrafted on the original stem. A marriage between any of the branches would be deemed incestuous, and every tribe has, therefore, to look abroad to a distinct race from its own for suitors for their females. The widow of a Rajput cannot marry again. *

To the stringency of these laws has in a great measure been attributed the origin of female infanticide, a crime once common in the Haraoti States.

A marriage is not considered effected until "Tiag" or the distribution of presents to Charans and Bhats has been made. Indeed, an alliance is deemed a disgrace if this ceremony be omitted. At one time the demands of these people were exorbitant, now they are fixed within reasonable limits.

Based upon Hindi derivable from the Sanskrit, in which the Brahmanical writings are inscribed, nearly every State in Rajputana proper has a peculiar dialect or patois of its own. The Hara would barely be understood out of Haraoti, or the Marwari out of Marwar.

In connection with the religious observances of the Hara there is little to remark which is not equally applicable to all Hindus.

The custom of Satti has been practised in Haraoti as in every other part of Rajputana.

The love of country and the passion for possessing land are strong throughout Rajputana, and Haraoti is famed for this *amor patria*, the Hara preferring existence in his own country to a life of luxury abroad.

It is almost superfluous to remark that the Hara resembles the Rajput generally in love for field sports. That spirit of energy which has won for him so honourable a reputation as a soldier here evinces itself, and he is keen after game of all kinds. It is to be regretted that a little of this energy is not evinced in matters of greater importance to their real interests, but in such the majority are yet indolent and apathetic.

That they possess high courage history will amply testify, and were recent proof of their gallantry called for, events recorded within our own recollection substantiate the fact that for upwards of half a century the best soldiers taken into our ranks have been recruited largely from Rajput tribes.

In the days of Pindari warfare, when the whole of this part of India was in a blaze, Rajput chivalry had ample opportunity, and was well sustained. Since then, however, the Rajput's military prowess has seldom been called for, and in many instances too ignorant to pursue other occupations, and in others too proud to exchange the sword for the plough-share, he has been content to live idly and unprofitably upon the memories of the past.

Intellectually I should be inclined to place the Rajput below the average, when compared with other races in Hindustan.† Almost entirely without education, and naturally but poorly gifted, the abilities with which he is endowed are too often dulled and deadened by

* In Tod's Rajasthan it is stated that such a marriage cannot take place for 101 generations.—T. H. H.

† Never the less it is a fine manly race; I do not agree with the writer.—T. H. H.



debauchery and free indulgence in the use of opium, which, both in its liquid and dry states, he takes to an incredible extent.

THE PURIAR MINAS.

I now proceed to speak of the neighbouring Mina Districts of Meywar, Jeypore and Bundi, of which the Political Agent in Haraoti holds the office of Superintendent.

The Puriar branch of the Mina tribe is for the most part located in a district immediately to the south of Deoli, the head-quarters of the Haraoti Agency.

It extends in an easterly direction from Jehazpur, a town of considerable size in the Meywar State, to the distance of about 12 miles, and is commonly called the Mina Kherar. The derivation of the word Kherar would appear doubtful. Some say it is so called from a species of brushwood named "Kher," which abounds in great profusion there, while the inhabitants themselves assert it to be simply the plural of "Khera," their own denomination for a village or township. Such small villages, separated by low narrow ridges, are scattered over the Kherar, which would seem to be naturally fertile and easily irrigated.

The Puriar Minas are said to be a cross between the Puriar Rajput of Mundore in Marwar and the aboriginal Minas of Rajputana, who are divided into 38 clans or families. The tribe professes to be of Rajput origin. They trace their descent back to the celebrated Nahor Rao, King of Mundore, whose son Shoma married a Mina woman, came to settle in the Kherar and became the progenitor of its present inhabitants and of those members of the tribe scattered over adjacent Mina Districts of Ajmere, Jeypore and Bundi.

Shoma had three sons—Rama, Ganga and Bagha—from whom sprang the three clans of the Puriar Branch. They are worshippers of Maha Deo, whom they usually allude to as "Adam Baba," or Father Adam.

The Puriar Minas are an athletic and brave race, tall, handsome and pleasing in address, obedient to their leaders, and sensible of kindness, but at the same time blood-thirsty and revengeful. Private pique is almost invariably vindicated by arson, cattle-lifting, or indeed any aggressive measure calculated to ruin or injure the object of their displeasure. They have inherited much of the pride, spirit and superstition of their Rajput ancestors, and they are equally ignorant and unlettered. As a plundering class they have ever been conspicuous as daring and expert robbers. By no tribe has the crime of dacoity been more systematically pursued as a profession. As with the Bheel so with the Mina, plunder was to each the charm of his existence, and as such indeed was it held until but lately.

Their principal food consists of cakes of unleavened bread, made with the flour of Indian corn, along with herbs and boiled vegetables. They eat largely of meat of all kinds save that of the cow and the wild boar, which, strange to relate, though more appreciated by other Mina tribes, the Puriar branch holds to be sacred. The following is the tradition which accounts for this peculiarity.

A Puriar prince's sister was espoused by a scion of the house of Marwar. The brothers-in-law quarrelled and the Puriar slew his adversary. The widow, ere committing



herself to the flames with her husband's body, pronounced a curse upon her brother which caused his limbs and body to rot, and he seemed likely to die.

When out hunting one day in the neighbourhood of Ajmere, the prince raised a boar and gave chase. The animal rushed into the lake¹ and the prince pursued till, falling off his steed, he with difficulty reached the shore and the pig escaped. He found, however, that his bath had cleansed him of the disease, and imagining that some favourable deity had assumed the form of a wild boar and purposely led him into the healing waters, he imprecated the curse from which he had been freed on any one who should slay a boar.

There are too many concurrent testimonies to this legend to admit of doubt that it is founded on fact. On the one hand there is the temple to the boar at Baghera, not far distant from Deoli, and on the other the reverence with which the boar is regarded by the Puriars, as also their two great oaths,—“May I eat boar's flesh” and “May my body putrify.”

The Puriar Minas indulge freely in spirits, opium and tobacco.

Their principal weapons are the bow, spear and kuttar. Frequently called upon to use them, there is little wonder they are skilful with them all. The kuttar or dagger, about a foot long, three inches wide at the hilt and gradually fining to a point, is a formidable weapon in the hands of a Mina, and one blow or thrust fairly delivered is always fatal. Many of them possess match-locks and make excellent practice. With the bow they are very expert, and this primitive weapon in their hands is used with deadly effect. In two instances during the rebellion a single arrow proved fatal to a troop-horse.

Like the Rajput, the Puriar Mina cannot marry a female of his own clan, but may marry any of the daughters of the numerous aboriginal classes of Minas. He considers himself, however, superior to these, and feels it a degradation to allow his daughter to ally herself with one of inferior blood.

With a Rajput the principal expenditure on marriage falls upon the bride's father, but the Mina receives payment for his daughter, a price which varies in accordance with the decision of a Panchayet by which the contracting parties must abide.

Mina women frequently marry twice, but a widow cannot marry into the tribe to which she belonged, and if there be any children by the first marriage, they remain with the father's relations, who also appropriate the price paid for the widow on her second marriage.

A man may marry his elder brother's widow² but not the widow of a younger brother, *i.e.*, the wife cannot ascend but may descend. The real cause of this is not known. The reason generally assigned is that an elder brother looks upon the wives of his younger brothers in the light of daughters.

The Puriar Minas have, up to a very recent date, been distinguished from the rest of the families of Minas by a very general observance of what they regarded as the command of heaven to destroy their female children. Consequent upon their steady obedience to this so-called divine injunction, many of the Puriars, by reason of the paucity of the other sex and the expenses attendant upon procuring wives, remained unmarried.

¹ The Pushkar Lake.—T. H. H.

² The law of the Levirate.—T. H. H.



ACCOUNT OF DEOLI.

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For very many years the earnest endeavours of the British Government were directed towards the suppression of this revolting crime amongst them, and by displaying a deep interest in the success of such instructions as were issued from time to time at our instance by the various princes concerned, much has been effected.

So long as infanticide remained a custom, a wife amongst the Minas was an expensive luxury. Hence arose many disputes of breaches of marriage contracts, which frequently led to acts of aggression, and incendiarism, and the high price often compelled a Mina who was bent on marriage to turn plunderer to realize the means.

The Puriar Minas inhabiting the wild tracts in the vicinity of Deoli have ever been more addicted to infanticide than the Rajputs, and they have had recourse to it in the belief that women born in their tribe are fated only to bring calamity on them. In justification of the practice they plead the authority of a satti who commanded it on ascending the pile, and of the Goddess Bhovani herself who enjoined it. Accordingly, amongst this tribe more violent opposition to repressive measures was to be expected.

In 1836 in the small Mina village of Papeala near Jehazpur there were 22 boys and not a single girl. The latter had not been allowed to live, every Mina of the village openly acknowledging that he had destroyed his female offspring at their birth.

Again, in 1860, on a census being taken of all the Mina villages in the vicinity, the percentage of girls to boys in a Mina population of 3,195 in the Meywar district was 28·88, in the Jeypore district in a population numbering 1,461 Minas 29·60, but in the Burai district in a population of 749 Minas the percentage rose to 53·23.

Since 1860 the returns show a steady improvement, and it is now hoped that this form of crime has almost entirely disappeared. The method of infanticide adopted was to refuse the child the breast and allow it to perish of inanition.

The following tradition is related by the Minas in justification of this crime of their ancestors: Shalla descendant of Shoma, from whom the Puriar branch sprang, was a holy man and paid great reverence to his deity, to whom he offered himself a sacrifice. Maha Deo was gratified and ordered him to pronounce his own reward. Shalla said, "Let my offspring be as numerous as the hairs of my head," and Maha Deo having intimated to him that sons should be born to him by tens, he severed his head from his body and it fell in front of the god. At this moment Shalla's daughter unwittingly entered the temple and her shadow fell across her father's headless trunk. Her intrusion so enraged Maha Deo that he cursed her, saying, "Henceforth shall it be lawful for a Puriar Mina to destroy his daughter."

Poverty and the exorbitant expenditure which in former days characterized the marriage ceremonies of other infanticidal tribes, cannot be urged by the Puriar Minas as an excuse for committing the crime, for, as already shown, they receive money for their daughters, and if they choose so to do there is no difficulty in marrying them, as they are eagerly sought after by the 38 families of Minas into which they may marry. Pride and superstition must therefore be the cause.



Amongst them the term father-in-law is one of reproach, and the man who bears that relationship is, from the wedding day, looked upon with contempt and treated as an inferior by the bridegroom, whilst it is, at the same time, considered a disgrace should a girl after attaining maturity remain unmarried. In either case the father's sense of pride is endangered.

Satti was seldom or never practiced amongst the Puriar Minas, or indeed by any of the lower classes of Hindus.

Whilst a superstitious belief in witchcraft is common to all Rajputana, the people of Meywar are generally considered to have evinced a greater credence in its mysteries than the inhabitants of other States, and the Jehazpur Mina subjects of the Meywar Principality have deeply imbibed the same ideas. A few years ago it was by no means an uncommon occurrence for a wretched woman to be accused of sorcery, and, unable satisfactorily to refute the charge, to be subjected to the torture known as witch-swinging, that is to say, the victim was suspended from a tree head downwards, ordinarily with an iron hook through the flesh of the back.*

We can easily understand that when dealing with predatory classes like the Mina, hitherto untrammelled by any laws, acknowledging no Government, and taught from the cradle to set every principle but that of violence at defiance, it must have proved a very laborious and delicate task, even by the application of the wisest and gentlest measures, to replace with the forbearance of a civilized race that desire for feud and that lust for unlawful possessions which is common to all barbarous tribes.

Prior to 1860 the Mina Kherar was dangerously unsafe for travellers, who could only adopt that route by banding together for mutual protection, and even then life and property were most precarious.

In that year the chiefs of Meywar, Jeypore and Bundi planned and executed a campaign against their lawless Mina subjects. Their various villages were besieged, very many exterminated, and the survivors conditionally permitted to reside in the Kherar.

A roll-call of all the male inhabitants was instituted in every Mina village morning and evening by the Thanadar or Jemadar, and no one was allowed to leave the place without sanction. No Mina was allowed to carry arms, and Raj troops occasionally patrolled the Kherar quietly. As a consequence, the tribe have in this part of India laid down the sword for the plough-share and have taken to husbandry zealously and kindly. Their villages are comparatively neat and clean, and their general condition gives hope for improvement as time rolls on.

But the success must not be altogether attributed to force. Far from it. The way had in a great measure been paved by means less muscular, and hundreds of the Mina population inhabiting the Kherar, when it was attacked, already felt they had more to fear from the defeat of the Raj troops than from their success. To this desire for a more settled life may be attributed the success which had already attended the organization of the Mina Battalion affording, as it did to many, an honest livelihood.

* This superstition and practice was formerly common amongst the Bhils also, and the unfortunate women were pointed out by Bhopas or witch finders. — T. H. H.



... already indicated, the great wave of rebellion rolling through the length and ... of Upper India in the memorable year of 1857 swept away with it an army which had long upheld the glory and prestige of British valour, and two of the finest local corps in Rajputana commanded by English officers and composed of the three branches of the service, mutinied and were effaced.

To replace one of these (the Kotah Contingent) the local Government conceived the happy idea which had proved so eminently successful in the Meywar Bheel Corps, *viz.*, to incorporate into our ranks the Minas, and thus from self-interest to enlist the sympathies of another race, whose hand up to that time had been raised against all others.

A period like that of the Mutiny, which reduced the influence of the paramount power to a minimum—a period when soldiers flung aside an allegiance which they and their forefathers had faithfully acknowledged—a period in short when anarchy and rebellion reigned supreme, could not fail to prove a season of rich harvest to the predatory classes of India. It was then that the Governor General's Agent deputed a British officer (in the first instance his assistant, Captain Forbes, who, after a short time was succeeded by Captain, afterwards Colonel, MacDonald of the late Gwalior Contingent) to raise from the Kherar districts a regiment of Minas, thus affording to the tribe an incentive to live honestly at a time when their worst passions might reasonably have been aroused and serious consequences apprehended from any indulgence of them.

The officer entrusted with this delicate task had formidable difficulties to contend with. He had to persuade a class hedged in by prejudices and superstitions to put aside the habits of a lifetime and customs which had become their second nature so to speak, and to accept the responsibilities incident to a life of comparative restraint. By natives a scheme, be it what it may, is invariably met with suspicion and distrust at first, and time alone can dissipate these doubts.

To contend against such drawbacks, Captain MacDonald, had a difficult part to play. His faith in the sepoy had been but recently rudely shaken by the disaffection of the regiment under his command, and he was now called upon to organize another composed of thieves and robbers. Forty years have elapsed since then, and the results of the measures instituted in 1857, to all who have seen the corps which now constitutes the infantry portion of the Deoli Irregular Force, is too apparent to need further remark. In proportion to our success in binding these people to our sway by giving them a new aim, character and interest in life (as we did to the Bheels in Meywar), we have soothed their passions and inculcated habits of discipline, industry and sobriety, thus obtaining almost perfect security against future irruptions and that constant disturbance of the public tranquillity which was the normal condition of the Mina Kherar prior to our efforts to ameliorate it.

The Mina Kherar villages have in recent years considerably developed. The land is fertile and, especially when under irrigation, produces excellent crops. The Minas have largely settled down to agriculture, and many of them are substantial cultivators owning wells and cattle. Numerous pensioners of the Deoli Irregular Force are settled in their villages, which are prosperous and peaceful. The Kherar jungle is now restricted to the hills, and the bulk of the land fit for cultivation has been brought under the plough. Tigers, which



at one time were numerous in the low hills near Deoli, are now but very rarely to be found there.

With increased prosperity has come about a marked increase in tranquillity and good conduct. The old daily muster has for some years past been abandoned. The "patels" and headmen of the villages comprising the tract have given security for the good behaviour of their fellow villagers and the chief restriction now in force is the obligation in a Kherar Mina to obtain a pass before he can leave his village and go to another at any distance. A few known bad characters still remain exempt from these relaxed rules and have to attend daily roll-call. Several villages on the Kherar list have been removed from it in recent years on account of the continued good conduct of the inhabitants, and the number of villages under special supervision in 1898 is thirty-seven only.