

The convalescent depots : Murree its topographical and medical history / [Alexander Grant?].

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THE CONVALESCENT DEPOTS.

MURREE ; ITS TOPOGRAPHY AND MEDICAL HISTORY.

INDIA protected on her sea-board by the Fleets of England and the Hon'ble Company, secure in her interior by the conquest or gradual absorption of nearly every powerful native state, is most open to attack on her extensive North-Western Frontier, from whence warlike hordes have poured upon her plains in successive invasions from time immemorial. Along all that varied and picturesque tract of country, with its numerous rivers and rich Derahs and Doabs, the main body of the Indian Army is now stationed, chiefly in large cantonments, where the various types of tropical diseases are very rife, and cause a considerable amount of mortality and suffering. But, in the near neighbourhood of most of these cantonments, there are ranges of lofty mountains which, of late years, have been applied to the noblest purposes in the conservation and restoration of the health of the European Troops ; and hence we have thought that a Topographical account and medical history of the convalescent depôts would be interesting and useful, not only to our medical brethren generally, but also to the public at large ; for the subject is one, the importance of which in a sanitary point of view, can hardly be overstated, as affecting the well-being of nearly the whole of the European portion of the Indian community.

The advantages of the Hill Stations have been variously estimated by different observers: by some, the climate has been extolled with an unquestioning credulity as equal to that of the most favored portions of Europe ; by others, it

NOTE.—This account of Murree has been compiled from the Reports of Drs. Macbeth and Inglis, of H. M.'s Service, and Dr. J. B. S. Brown of the Bengal Establishment : we beg also to express our obligations to Mr. Thornton, the Commissioner of Jhelum, for a "short sketch" of the station, ably drawn up by Mr. Delmerick, the Head Clerk in his Office.

has been condemned (from a loose examination of half perceived facts) as worse than that of the plains, or it has been viewed with an injurious scepticism from isolated cases of disease or prevailing epidemics, without due inquiry as to their origin and causes. It were important, therefore, to possess some authoritative record of the true value and efficacy of these localities, as proved by a correct numerical analysis of the results through a series of years, and we fortunately possess this in the Annual Reports of the depôts, which embody a mass of information,—of direct and exact observation and experience, that cannot fail to afford means of arriving at a precise and trust-worthy estimate of the saving of life and constitution, and the consequent return which Government receives for a very considerable outlay in establishing and most liberally maintaining these expensive sanatoria.

With these few preliminary remarks, we shall proceed with our subject, hoping that it may be as acceptable as it is plainly important in a social and political point of view; for the recent changes in the furlough rules, however they may affect leave to Officers, will detract nothing from the value and interest of investigations which have for their main object the health of the European Soldier, whose life in a tropical climate is exposed to many dangers, and is necessarily an irksome one, notwithstanding many wise and humane ameliorations in his condition which have of late years been introduced. Of these ameliorations, we view the Hill Establishments as by far the most important, although, as the following enumeration will show, there are others which contribute largely to his comfort and enjoyment, and consequent better changes of life; the most recent are the regulation of his arrival at the commencement of the cold weather; the safer means of transport up-country; the improved construction and ventilation of barracks; increased cubical allowance of air; a more varied and wholesome diet by the occasional substitution of mutton for beef, and the more free use of vegetables; facilities for the consumption of beer and porter in lieu of ardent spirits; barrack libraries, soldier's gardens, racket courts, quoits and other facilities for mental and bodily recreation; the use of punkahs in barracks as well as in hospitals, the liberal allowance of ice for the sick—a means not only of saving life, but of saving constitution by often preventing the necessity for bleeding; and lastly, the Lawrence Asylum for the maintenance and education of his children.

There are three* Convalescent Depôts in this Presidency, *viz.*, Murree in the Punjaub, Landour in the North-Western-Provinces, and Darjeeling in Bengal; and all have been established for periods sufficient to supply us with facts, to show their practical importance: our present purpose being with those in Northern India, we shall commence with Murree; the station most recently formed, and about which consequently the least is known to the public, although from its position, near Rawul Pindee and Peshawur, it is rising into great and deserved importance.

We shall present in one view all that we can gather concerning it from facts diligently collected during a series of three years, and thus for the first time brought together, so as to make the account complete and comprehensive; a result scarcely attainable in any other way.

Soon after the annexation of the Punjab in 1849, Mr. Edward Thornton, the Commissioner of the Jhelum Division, had his attention directed to the range of mountains in the south-east corner of Hazara. This corner consists of three main ranges, of which Murree is the western-most, Pafoondee the centre, and Nur the eastern-most. The Commissioner considered that Murree was by far the most eligible of these three localities, and early in 1850, orders were received to assemble a Committee to report on the capability of the place as the site for a sanatorium.

The Committee met in the month of March at Murree, and reported most favorably of the locality, but before the sanction of Government could be obtained for the establishment of a dépôt and other matters arranged, the season was too far advanced to admit of even temporary shelter being provided for a detachment of the European Regiment then stationed at Rawul Pindee. But several civil and military officers in the division commenced the building of private residences; and thus within a few miles of the spot where the haughty Khalsa laid down their arms to General Gilbert, and within a few months of that historical event, there were rising many comfortable dwellings in a climate and amid scenes and associations that remind the exile of the pleasant homes of his native land.

* Government has recently sanctioned a fourth Convalescent Dépôt (to be named "Dalhousie") in the Chumba Hills: the locality is said to present all the advantages of Murree, besides possessing a Chalybeate spring, which will doubtless be of service to the invalids. This new station will be a great boon to the large European force at Lahore and in the Jullunder Doab.

We shall here somewhat anticipate our narrative by the following very gratifying extract, a record of that progress which is characteristic of the energy of the civil administration of the Punjab :

“ The year 1851 was a very busy year. The construction of a road
1851. to connect the sanatorium with the station of Rawul Pindee was sanctioned by the Governor-General. Temporary barracks were erected for 100 European soldiers, who came up from Rawul Pindee and Peshawur. A post office was established. An Assistant Commissioner was deputed to manage the affairs of the place. The income derived from the lease of the excise on drugs and liquors was sanctioned by Government to be applied to local improvements. A civil assistant surgeon was appointed for the purpose of attending to the medical wants of the visitors and of the civil establishments. Local rules were framed, sanctioned and promulgated. A few roads were traced, and one or two were constructed. Some houses were built ; and a good bazar was established.

“ A branch treasure chest was established in 1852 for the payment
1852. of money by warrants from the Rawul Pindee Treasury. This has proved of great convenience to the residents. A European shop-keeper and some native traders commenced business here. Some few roads were completed. The road from Rawul Pindee to Murree progressed, but not very rapidly. The commencement of a public garden was made.

“ A proposal was made in the beginning of 1853 to locate the soldiers’
1853. barracks on the ‘ flats ’ a piece of ground about three miles from the bazar, and which has obtained its name from being comparatively speaking a large and level plateau ; but it was shown that the ‘ flats ’ were enclosed among loftier mountains, and shut out from the breeze, which every person acquainted with our mountain sanatoria knows well how to appreciate, that they were not so dry as the site of the present depôt which enjoys all the advantages of the best hill stations, a high altitude and a pure breeze from the plains. The proposition was therefore overruled and the permanent barracks were allowed to be constructed on the same spot whereon the temporary ones stood before. A chaplain was appointed. He was to officiate here during the summer, and at Jhelum during the winter of every year. A good bridle road from this to Kotlee in the mountains was traced. An experimental tea plantation was formed at Shamlee, about eight miles from Murree. More houses and roads were constructed, and the road from the plains advanced more satisfactorily. Towards the end of this season, we were threatened by an attack from a rebellious petty chief of the Gukkurs, a clan who chiefly reside along the base of these hills. A general panic ensued for a day or two, but this feeling quickly subsided, when it became known that the rebel was captured by the Commissioner, and that no apprehensions of insecurity were entertained by the authorities.

“In the present year, improvement is still making rapid strides. Houses are rising around us. A wing of the 66th Goorkhas has been located on the ‘flats.’ The foundation of a Church was laid on the 28th June by Mr. John Lawrence, the chief commissioner of the Punjab. Roads are being constructed. A Roman Catholic Priest has been appointed expressly for this place. The bazar is flourishing. The public garden is improving. The tea-seeds sown last year have germinated, and the plants are thriving. The experiment will, it is hoped, prove successful. The construction of a theatre is under contemplation, and the Rawul Pindee and Murree road is rapidly approaching completion.”

Taking Rawul Pindee as the point of departure, the stages from thence to Murree, are four in number, *viz.*, Route. Mulpore, Traite, (at the foot of the mountain) Goragully, Murree, and the journey is full of interest and remarkably enjoyable. “The first march (we quote from Dr. Inglis) to *Mulpore*, distance 10 miles, almost plain or slightly undulating, affords no beauties of vegetation, a few trees occasionally are seen; from Mulpore to Chutter, the next stage six miles, begins to ascend, and the appearance of the country around becomes picturesque, the hills are covered with trees and underwood: the third stage, Traite, is seven miles beyond Chutter, from which there is an ascent, the entire way to Murree; the variety in vegetation is beautiful and marked, changing every mile as the distance from the plains increases; we passed numberless fine trees and lovely shrubs, among which may be recognised the toon, date, palm, pomegranate, fig, while higher up the mountain is covered by a few kinds of the pine family, the *pinus longifolia* being most conspicuous.”

According to Mr. Delmerick, the distance by the present road is 45 miles, of which up to Traite is 32. The cost of a dawk of eight bearers, one mussalchee and one bhangy-burdar is thus stated by the Post Master of Rawul Pindee:

From Rawul Pindee to Traite,	Rs. 10 15 0
From Traite to Murree,	„ 5 13 4
Postage,	„ 0 2 0
Total,	Rs. 16 14 4

A torrent, called the Krung, over which a good bridge is being built, is at present crossed over at Salgiraon, about 28 miles from Rawul Pindee. The road is now good for camels, and palkees repeatedly came up the whole way to

Murree. The hire of carriage from Rawul Pindee for each trip is thus charged :

Camels,	Rs.	2	0	0	each.
Mules,	„	1	8	0	„
Bearers,	„	1	2	0	„
Coolies,	„	0	12	0	„
Ponies,	„	1	8	0	„

Exclusive of these rates, a fee of one anna is levied for each description of carriage by the Chowdree, for his trouble in meeting the demands of travellers. The requisition for carriage must be made either to the Deputy or Assistant Commissioner.

There is a good dâk bungalow at Traite, consisting of five suites of apartments, and there is an Overseer's bungalow at Goragulle, at which an establishment for the convenience of travellers is retained."

We have to remark here the gentle ascent to the sanatorium and the great advantage of its accessibility at all seasons of the year; there is no belt of deadly jungle to pass through, and there are no dangerous rivers or hill torrents to be forded. The old mountain path was quite easy for coolies, mules, and horses, elephants could proceed as far as Traite within 12 miles of the station, and camels might go the whole way. The worst of the sick have been hitherto conveyed in doolies, and the others on elephants to Traite, but when the new road is completed, it is said that the station will be made accessible to wheeled carriages.

The natives call the high peak of the mountain selected for the sanatorium "Mooshiari;" it lies to the north of Rawul Pindee in Lat. $33^{\circ} 54' 30''$ N. Long. $73^{\circ} 26' 31''$ E. distant about 20 miles in a direct line from Rawul Pindee, and situated in the district of Hazara, having a portion of the Himalayan slope which bounds Cashmere on the South-west and a part of that vast range running from West to East from the Indus to the Sutlej. The average height of the station is, according to Dr. Inglis, about 7,400 feet above the level of the sea; the view, he remarks, is varied and beautifully grand. In a clear state of the atmosphere, the eye can command an immense distance of the plain, extending to the town of Rawul Pindee, Rhotas, and other conspicuous places, while the rivers Indus and Jhelum, at the same time may be distinctly traced. The Pir Punjal and range bounding Cashmere on the North-east are always in view when not obscured by fog, while looking to the West, Torhela and

the whole district of Hazara from the landscape, with a branch of the Huroo, hurrying its waters toward the Indus, while the distant mountains bordering the Peshawur Valley can easily be distinguished, and some have asserted that the "sufied koh," near Jellalabad, is visible.

"This hill (Murree) is most superbly wooded, extending from beginning to end of the station; trees and shrubs are found in endless variety, and in some places magnificent forests; this redundance of arboraceous vegetation is confined to the Northern and West slopes of the mountain, the South-east faces looking on the plains, are generally bleak, and have not so inviting an appearance: the great river Jhelum, in one of its numerous windings before it reaches the plains, runs within 18 miles of Murree, and is crossed *en route* to Cashmere at Dewal."

The station beyond cantonments runs towards the North along a hilly ridge, the highest and most rugged aspect towards the North. On the North-west, it is richly wooded, and about the centre comprehends a very fine forest. At present it extends about six miles from Clifden to the "Flats," its two extreme points. There are 68 estates, with rents varying from Rs. 300 to 1,700 for the season. The most beautiful sites are near the residence of the Commissioner.

The strata of the hills are composed principally of calcareous sandstone, alternating with grit and red sandy shale, dipping towards the East, but with varying dips.

The valleys and faces of the hills are well cultivated, but there is extensive irrigation, and intermittent fevers are consequently very prevalent in the lower ranges.

"The sources of two considerable streams being immediately on either side of the station. The Harroh rises at Sundean, and, passing through Khatur, falls into the Indus, near Choe Guriala.

"The Swan begins at Mooseearee and, after fertilizing a portion of the Dhunnee country, falls also into the Indus near Trab. The same features in the arrangement of these hills present themselves to our notice, as are observed on the western ghauts, on the Cordilleras, and on others, and the existence of which is no secret in Physical Geography, namely, that the mountains present their steepest acclivities to the sides nearest the sea, and that those sides are least covered with vegetation. It is no wonder then, that while our side of Murree is comparatively barren, the other side should produce large forests."

"The prices of materials for building are somewhat high, but this is solely owing to the multiplicity of works under construction. Stones are procurable at Rs. 2 a 'phurrir.' A 'phurrir' has 108 cubit feet of solid contents. Lime is to be had at Rs. 16 a hundred maunds. Wood is got in any quantity, but it must be felled beyond the limits of the station, according to the terms of the local rules.

"Beyond the limit of the local rules a tax of one rupee on every tree has lately been fixed by Government, to protect the forests from needless and indiscriminate spoliation, and at the same time to secure a fund for the formation of new plantations. The bazar is large, and is daily increasing. The prices of articles and provisions were necessarily high during the first two years of its existence, but since competition has entered more largely into the market, the rates have greatly fallen, and now I believe some things are to be had much cheaper here than at Simlah, or even Landour. I annex a table, showing the present market rates of labour, food, &c.* The roads are good, and in my humble opinion, have been constructed judiciously, a gentle slope being uniformly preserved. Some important lines have been traced and surveyed, and are now in course of completion. Doubtless when finished they will not only add to the appearance of the station, but will likewise enhance the value of many estates. In short, the station has already assumed the garb of our other sanatoria, and will, I am confident, be the most favorite of them all.

"The villages in the neighbourhood are small and composed chiefly of hamlets far apart from each other. The largest village is Beerot, comprising nearly 200 houses. The population is scanty, consisting of various tribes, of which the principal are the Dhoonds, Suttees, Kethwals, Dhunneas, Kurals, Goojars Brahmins and Khatrees, the two last are of course Hindus and are chiefly engaged in commercial pursuits. The rest are all Mahomedans and professedly Sunies. They are very superstitious and ignorant, and I have not met with a single individual who could either read or write. The Dhoonds, (or Sao as they proudly style themselves) are supposed by some to be the descendants of the Sacæ, an ancient Scythian race. The rites and ceremonies of the Dhoonds and others are precisely the same as are observed by the inhabitants of the plains.

* See Mr. Delmerick's table at the end of this paper.

"But their habits and language are somewhat different. They are less cleanly in their persons. Their food is of the coarsest and simplest kind. They are capable of enduring much privation and toil, and the burden of their songs savours more of war or raids, and less of love, than is the case elsewhere. Their musical instruments are few, and of the most primitive stamp. They are greatly excited at the sound of the 'chilgoza,' a kind of pipe. I saw the eyes of a native of these hills on one occasion at Shahpore suffused with tears when this instrument was played. He told me that the music reminded him of home. I confess I was surprised at the man's emotion. Perhaps it was akin to what the Swiss feels when he hears in a distant land the beloved notes of the 'Ranz des Vaches.'

"The agricultural products of the neighbouring villages are few. The implements of husbandry are very rude, in fact ruder than those of the plains. The following is a list of the crops :

NAMES.	WHEN SOWN.	WHEN REAPED
Wheat,	September, ...	June.
Barley,	Ditto,... ..	Ditto.
Mussoor,	Ditto,... ..	Ditto.
Indian Corn,	April,	September.
Onions,	March,	June.
Garlic,	Ditto,	Ditto.
Chillies,	Ditto,	August.
Rice,	April,	September.
Hemp,	Ditto,	November.

"Two descriptions of the cucurbitaceæ are cultivated, *viz.*, the 'cuddoo' and 'kukree;' other specimens do not arrive at perfection. Of the leguminosæ, except the 'mussoor' above-mentioned, the only other kind is the French bean (grung), which grows here in great luxuriance. Potatoes also have begun to be sown by the residents. They yield a large return."

There are 2 or 3 varieties of the pine, one the common timber tree resembling the *pinus sylvestris*, the other probably the *pinus longifolia*, abundant and many noble specimens in every direction: some of these majestic trees are about 130 feet high, tapering in a straight line from base to top. These are not valued for timber, but the *pinus deodara*, although not growing in the station, is to be found in abundance in the neighbourhood. There are some fine oaks, while the sycamore, walnut, chestnut, hazel, poplar, willow and hawthorn abound. There are also the pomegranate and barberry, one species of rhododendron and a kind of cotton tree, very graceful and attaining a great size.

Among the shrubs and flowers, many beautiful bulbous plants, comprising tulips and hyacinths, can be detected; jessamine, both white and yellow, is profuse; myrtle, bramble, the white rose and other orders and varieties of the flora are so numerous, that in summer this place resembles a garden.

Among fruit trees growing wild are the apple, pear, apricot, plum and cherry, the fig, and mulberry. In June the hills are covered with strawberries, for wild fruit respectable in size, and not to be surpassed in flavor either for preserve-making or to be eaten in the ordinary way. The invalids benefited largely by the supply. There are also the blackberry, barberry and raspberry, the grape and peach, but all of them inferior in flavor. Dr. Macbeth also enumerates the primrose, violet, potentilla, gentianilla, balsams, and a variety of ferns and cryptogamic plants: of medicinal plants, the thorn apple growing in great luxuriance and abundance, the dandelion and chiretta. In short, he adds, the common European natural orders are extensively disseminated over the hills, and many of them are identical with those of Britain: there is one species of bean very similar to the common garden French bean, which grows wild in great quantities, and is a very excellent vegetable; of all this, we may observe that the flora of Murree seems to surpass that of any other hill station which we have visited, or of which we have read.

"The sides of the hills," says Mr. Delmerick, "are literally painted with flowers. The rose, the yellow and white jessamine are the most abundant. The convolvulaceæ and other parasitical plants abound in the forest. The dahlia when cultivated flourishes remarkably well in the gardens attached to the different estates."

Among the beasts of prey, we find enumerated the panther, leopard, hyena, wolf, ounce, wild boar, fox, jackal, and

even the tiger himself, with many of the smaller feline genus: when the winter sets in, bears appear, and the wild hog has been killed in the vicinity, and also the byril, a handsome species of goat.

The ornithology of this group of hills is remarkably varied, compared with other mountain ranges, and it includes the eagle (rare), falcon, kite, crow, owl, parrot, jay, sparrow, martin, starling, swallow, dove, green pigeon, tom-tit, wren, wood-pecker, and many other common birds. The familiar notes of the cuckoo are often heard to gladden the ears of the exile, and the woods resound with the song of the black-bird, thrush, linnet and nightingale.

Among the game birds, are the chicore, black and grey partridge and the common pheasant: in winter the minhal is occasionally seen, and the woodcock is a visitor of early spring.*

Dr. Macbeth describes the barracks, four in number, as situated close to the edge of the hill, looking down on a deep gorge, or rather abrupt descent: on this, the proper front, they are rather exposed, but on the other three sides they are beautifully sheltered by the hills and trees, while immediately below to the west, there is a fine large flat, which might, with great advantage, be allotted as a garden and pleasure ground for the men, affording them occupation and amusement, and an abundant supply of vegetables, for there is plenty of water close at hand.†

* NOTE. Mr. Delmerick enumerates also the argus and golden pheasant, wild cock and hen, peafowl, hare, the barking deer and the hoorul of Sirmoor, or Gazelle.

† Dr. Mackbeth in his account of the station states, "That proceeding northwards some four miles, after descending 500 feet and re-ascending 200 there is an extensive plain, forming a kind of basin, about half a mile square, with every natural advantage for a cantonment or station; accommodation for two European Corps might be built on it, with ample space for parade grounds, and if the road now contemplated be completed on the plan proposed by Lieut. Hart, Assistant Civil Engineer, it will be within 12 hours' easy march of the plains: indeed I may safely affirm there is not another such site in India possessing the same local advantages, fuel in abundance, water good and plentiful; at a distance of a few miles in the direction of a hill named Moodgporea, quantities of superb timber, of any required dimensions, and in this direction also admirably rich pasturage for sheep and cattle."

There is also a brief notice of this locality in Dr. Inglis's report: he says, "A good spot for a cantonment may be found in a considerable tract of level land, locally termed the 'flats,' about four miles towards the Cashmere road: level land or gently undulating may be found here to accommodate a Brigade, parade ground included, but the land in question is considerably beneath the general height of Murree." It is in this quarter that a wing of the 66th, or Goorka Regiment, has been located during the present season.—EDITORS.

Complaints have been made of the site and the barracks, but we are disposed to agree with Dr. Brown, that the site has been well and judiciously chosen, and that the barracks, temporary as they are, have fully answered the purpose, for which they were originally intended. "I have heard," says this medical officer, "objections raised to the site, on the ground of its being too bleak and exposed, but, when the new barracks are completed, and they are progressing rapidly and appear to be admirably constructed, I think ample protection will be afforded the invalids; sick men are sent to the hills purposely to get the cool bracing air, and I think the Committee that selected the site, acted very properly, and with discretion".

Climate. Dr. Macbeth reports of the climate in 1851, as follows:—

"During the spring and periodical rains, storms are violent and frequent, coming mainly from the north-east or south, the quantity of rain which fell in the latter end of June and July this year was very great, and during June, July and August, the sun's rays are very powerful, indeed, in my opinion, exposure to their influence is quite as dangerous and prejudicial as in the plains, but from the prevalence of constant currents of air, the same immediate feelings of bodily discomfort do not supervene to warn people of their danger. This alone proves a fertile source of disease, and individuals thus thoughtlessly exposing themselves are but too apt to blame the climate, instead of ascribing the result to its true cause.

"The range of the thermometer in May was from 55° to 75° , between sunrise and sunset; in June from 65° to 80° ; in July and August much the same; in September from 55° to 64° .

"The climate of Murree is, in my judgment, most excellent, but occasionally somewhat variable, to guard against which, it is simply necessary to wear flannel next the skin, a precaution I most strenuously recommend to all visitors, and in the case of soldiers, every man ought to have flannels issued to him before he is sent to the depôt. In conclusion, my impressions of the climate and locality are such, that I earnestly hope, it may become the residence of a large body of European troops; should such a result occur, I confidently predict an immense saving of human life."

The season 1852 is said to have been unusually humid: the latter half of April and whole of May at intervals distinguished by gales of wind, rain and hail storms, with thunder

and lightning; these storms were chiefly from the north-east. The regular rainy season set in about the 20th June, and continued till the end of August, breaking up in thunder storms; the quantity of rain was unprecedented, but this was general throughout the north-west of India. So much wet was greatly felt by the invalids, who had no resources within doors. But, from the beginning of September, the weather was dry and clear, the climate genial, and the men were able to take exercise: they consequently improved wonderfully, and the few who did not benefit were rheumatics, and cases of organic disease, so confirmed that little good from the change was anticipated.

Dr. Brown reports that 1853 was more favorable for the invalids than the two previous seasons. The rains commenced about the middle of June, and continued more or less till the end of August; from that date the weather was all that a sick man could desire.

Internal economy.—The reports of the internal economy of the depôt are favorable: the crimes from intemperance have not been numerous, although the difficulties to restrain it are far greater at a depôt than in a regiment; and at Murree the barracks are most inconveniently close to a large bazar. The repressive measures have been the curtailment of indulgences and admission to hospital, which was dreaded and always enforced, when there was the suspicion of an individual tampering with his constitution; on the other hand it was inexpedient to restrict the means of taking exercise, so necessary for the health of the men, who are too much disposed to lounge about the barracks, or at the most to saunter about the station, or play games at quoits: every encouragement should therefore be given, to their being out of doors as much as their health will permit, and in this respect probably the judgment and tact of a commanding officer will contribute as much to their recovery as the skill of the physician.

As at all hill sanatoria, the men, not actually under treatment, are considered as out-patients under observation: they have no duties, except roll calls and inspections for medical purposes, or for their commanding officer.

Complaints are made of the want of facilities for bathing or ablution, although water is abundant, wholesome, and close at hand. Dr. Macbeth says that a tank is much wanted; there is plenty of materials on the spot, and the rains would fill it; he recommends also two shower-baths for each barrack, but we are of opinion that there would be

danger of internal congestion, especially hepatic congestion, if invalids were habitually to use the cold shower-bath in a hill climate. This medical officer dwells much on the want of a hospital sergeant and a guard; without these, it is impossible, he says, to prevent the most injurious irregularities in hospital; and relapses, often fatal, are entirely owing to the facilities for conveying to the patients, spirits or improper food, by means of cook-boys or other regimental followers.

If the invalid has not much to attract him out of doors, he is quite without resources in barracks, and we therefore trust to see established at Murree and every hill sanatorium, a plain comfortable coffee room and library for mental recreation and improvement.

Diet.—The bread, milk and butter are said to be much better than in the plains: the meat, chiefly mutton, is reported as good, but that it might be superior, seeing the fine pasturage in the neighbourhood. There is plenty of indigenous vegetables, such as onions, cucumbers and pumpkins, but for the cultivation of other kinds a soldiers' garden is urgently required: all the medical officers recommend a more ample vegetable diet to counteract the tendency to scurvy in some cases, and to aid in the restoration of the invalids' health. Beer is supplied at a cheap rate from the profits on the sale of rum.

MEDICAL HISTORY.

Dr. Macbeth, after commenting on the various adverse circumstances connected with the first year's experiment, concludes as follows:—

1851.

“ Yet, in spite of this rather formidable array of obstacles, the nature of the climate, the situation and other local advantages fully set forth in the topographical part of this report, have triumphed; the result in my opinion pointing out Murree, as the most eligible situation in India, for the formation of a large and permanent sanitary depôt. The convalescents on first arriving here amounted to one hundred men, subsequently, on the 25th of June, six more were sent from the 53rd Regiment at Rawul Pindee; of the original number only two have died, one, from a complication of diseases, which neither climate nor medicine could combat; the other, I regret to record, had a relapse of the disease from which he was slowly but steadily recovering, brought on by exposure to wet and cold during a severe storm in the night; the third and only other fatal case was one of the six men sent from the 53rd in June, he arrived here labouring under acute inflammation of the stomach and bowels, which was subdued, but he had a large abscess in the liver,

evidently, as after examination proved, of some weeks' standing, and altogether he had better have remained with his Regiment; his end was accelerated, not retarded by the removal, though I think the final event would have been the same in either case. Of the other men, nine have been recommended for change of climate to England, five are now in hospital, the majority of the others in comparatively good health, many perfectly recovered and all improving, there are, however, some, and not a few, who to confirm their health ought to remain here during the cold season, provided glass be put in the windows of the barrack, and a few other necessary additions and repairs made.

"Before concluding relative to the men, I ought to mention that I have not seen a single case of that peculiar intestinal affection, which was so prevalent both at Landour and Kussowlee, and two or three men who suffered from it there, escaped here. I have performed all the duties of this station, civil as well as military, and have attended professionally a very large number of visitors suffering from various diseases, resident for longer and shorter periods; in every instance which fell under my observation they speedily and decidedly benefited by the climate, and that too, wanting in some instances the shelter of a house, and many of the other conveniences of civilized life; for children particularly this place seems to possess peculiar advantages—all such here throughout the season have the chubby cheeks and ruddy complexion of country-bred little ones at home; it is quite a pleasure to look at them, and of some who arrived apparently suffering from hopeless diseases not one died, indeed I have recorded the only deaths throughout the season."

The following extracts embrace the most important
 1852. particulars in the report for 1852, by Dr.
 Inglis:—

"The Corps supplying invalids to this depôt, are stationed at Peshawur, Rawul Pindee, Sealkote and Woozeerabad, and as in my introductory remarks, I gave the strength of each detachment, it will not be necessary to do so again, I beg therefore, only to refer to the return, which will exhibit the ratio of sickness in each detachment, and a very few words will be required to account for the excess of sickness, and the corresponding necessity for invaliding to England, as well as the mortality in some detachments compared with others. I may premise by stating, that the party from Sealkote and Woozeerabad, was much weaker than the Rawul Pindee and Peshawur detachments, (and to digress) I mentioned that to avoid over-crowding at Murree the number from the stations first mentioned was reduced to 30 men, in consequence of a Head Quarter Order which reached the detachment (then over 60 strong) after it marched from Woozeerabad, 30 of the worst cases being selected for Murree, the remainder were ordered to Dugshaie, so that, only seven men of the 3rd Dragoons, 11 of the 10th Foot, six of the 24th Foot, and six of the Artillery came from the Cis-Chenab Doaba; the strength of the depôt was chiefly made up by invalids from Peshawur, and Rawul Pindee; of these various parties, I must record the 3rd

Dragoons as having given cases which derived most benefit from the the sanatorium, for, of the seven sent up, the whole will return fit for service to their Regiment, while as a reverse to this, in the 32nd Foot, out of 18 men sent to the depôt, two died, ten were recommended to be sent to Europe by the standing invaliding Committee, and one subsequently to the sitting of that Committee has become almost unable to stand, from rheumatism of his lower extremities, and must, when the depôt is broken up, be transferred to the European hospital at Rawul Pindee, so that, out of the 18 men, five only will rejoin their corps; this state of course cannot be attributed to the climate of Murree, but must be ascribed entirely to the selection of men from the latter-named Regiment, for, although it was probably proper to give the poor men in question a chance, by avoiding a hot season at Peshawur, it is evident that, in sending all the hopeless cases up here, the fame of the sanatorium was not considered; but after all it can make little matter, as no one could ascribe to local causes, or insalubrity of this fine climate, the contrast of the men of the 32nd to those of the 3rd Dragoons. It may be easy to account for the rapid convalescence of the Dragoons in many ways: (in the first place) the cases were not in such extreme stages of organic disease, the Dragoons were probably superior in physique to the 32nd (as in Cavalry is often the case), and probably the constitution of the 32nd Regiment in general has suffered more from service than the 3rd Dragoons, for, it must be remembered, that the 32nd is one of the two European Regiments (the 10th being the other) which recently was exposed so much to climate, during the Punjaub campaign, these two Regiments having formed a portion of the Mooltan force, and took the field in the hot weather, a considerable time before the grand Army was formed; to say nothing of the fatigue and influencing causes of disease to be found in the trenches, during a siege, it must also be remembered that the invalids of the 32nd came from Peshawur, those of the 3rd Dragoons, from a comparatively healthier station.

“By the abstract of the return, it will be perceived, that the diseased conditions, rendering change to the sanatorium necessary, were from the various forms of fever produced by malaria at particular seasons in the plains of the Punjaub, and the structural alterations of the internal organs, induced by these fevers, or such disorganizations occurring independent of these exciting causes. Intermitting fevers, either irregular in their attacks, or occurring as quotidians or tertians, were common; at least two-thirds of the men, in and out of hospital, suffered from agues, but our out-cases and others treated in hospital, not complicated with structural alterations, were easily subdued by the usual remedies and salubrious hill climate; while in many instances men who, as it were, had become constitutionally habituated to ague, were, throughout the season, from the influence of change of temperature or other atmospheric variations, liable to attacks, although otherwise in robust health exhibiting no trace of hepatic or other congestions; many men of this description, who had fallen into a diminished state of vitality from the effects of frequent febrile attacks, and other depressing causes in the plains, and where no evident organic disease existed, recovered rapidly,

but in no case where extreme structural alteration and disorganization of liver especially existed, did benefit accrue: these cases retrograded, and a majority of the men recommended for Europe were of this description, while a limited number of such cases terminated fatally. A soldier of the 53rd regiment died of low typhoid fever, supervening on remittent; this man had improved considerably, for some time after his arrival, having been sent up on account of debility induced by severe attacks of fever, but a relapse with cerebral symptoms carried him off. The usual *post mortem* appearances were present, *viz.*, effusion into the cavities and congestion of the vessels of the brain. Two soldiers of the 32nd died from the effects of hepatic disease, complicated with dysentery; in one case, *viz.*, that of a sergeant, the fatal event was accelerated by the bursting of an hepatic abscess upwards through the bronchi, vast quantities of pus were in this manner evacuated, and the patient, having lingered some time in this state, it was faintly hoped that a recovery would take place; but the patient's powers of life were incapable to resist. While on this subject, I must mention the case of another man who was discharging the contents of an abscess by mouth and anus, and also a soldier of the 32nd; he came up with decided hepatitis, and made little progress one way or other, until just before he appeared at the invaliding committee, when he was seized with pectoral symptoms, and after a violent fit of coughing, he said 'something had given way in his side,' and immediately afterwards quantities of pus were continually being coughed up; he also discharged similar sanguineous fœtid dark pus by stool; he improved considerably after this, under the influence of generous living, and exercise in the open air in a dooley, and he left the station with the invalids of the season in a mending condition.

"After fevers and affections of the large abdominal organs, dysentery and other bowel affections require some notice, and these in many cases co-existed with the morbid conditions of the biliary organs already mentioned, indeed it was frequently difficult to draw a distinction, in returning disease, as I cannot, or at all events I can with difficulty, bring to my recollection a case of bowel complaint existing independently of other diseased states, and more especially where the liver was not compromised.

"Private Henry Buckley, H. M. 10th Foot, died under dysentery; this man was sent to the dépôt, for the hepatic symptoms induced by repeated attacks of fever: at the autopsy, besides the ordinary diseased conditions of the colon (including sloughing) a large hepatic abscess was discovered.

"Some men now convalescent contracted diarrhœa and dysentery at the dépôt, most of them recovered partially, and one case is recommended for change; the patient, a band boy of the 22nd, came up in a weakened state from relapses of fever, and, shortly after his arrival, he was seized with dysentery, which brought him to an extreme state; he however recovered in some degree, and was recommended for 'discharge' (or I should say change to England). Another man belonging to the 32nd Regiment was in a seemingly

dying state, from acute dysentery ; he however rallied in a most wonderful manner under treatment, and was recommended for change of climate to Europe. Before I quit this subject, I would remark, together with hopeless cases of hepatic affection, that the climate of Murree does not seem favorable to the class of diseases I am now noticing ; the humidity of the climate, particularly this year, was such that it must have operated detrimentally on this class of diseases.

“ It would be only repetition, or at all events, I can mention little that is original, in reporting the treatment of the fevers and visceral affections, which have occupied the last page or two of this report ; the cases for the most part sent up, were in that chronic and anemic form, in which active treatment was generally inadmissible, or in that unsatisfactory state, where it was often necessary to stimulate and support languid vitality on one side, and stifle local congestions, in the usual manner, on the other. Quinine was my favorite remedy to subdue aguish invasions, and for periodic febrile attacks in general, varied, according to effect and constitutional peculiarities, with the arsenical solution and aperients, stimulants and other adjuncts, with appropriate regimen, and the aid of climate (not the least important prophylactic agent in forwarding convalescence). In the hepatic affections the treatment was varied, both local and constitutional, according to circumstances ; while affections of the spleen were treated without calomel, and by preparations of iron, and in the management of dysentery throughout, in every case, the long tube enema was administered with advantage more or less marked, while acute symptoms were subdued by fomentations, and leeches applied to abdomen and the *pulv doveri* with *hydrarg. cum creta* proved useful aids in our routine in subduing tormina.

“ A good many rheumatic cases, including rheumatic cephalalgia, were sent up, and in the majority of these, the symptoms became so aggravated as to render treatment nugatory, and such cases I would suggest, should not be sent to Murree. We had a few pulmonic cases, induced by hepatic abscesses penetrating the lungs and also complicated with other diseases ; in a few, the action of the heart was so increased in impulse and sound, that disease of that organ in substance or valves either existed, or was suspected, and in such cases I should say, the elevated atmosphere of this sanatorium could not but prove detrimental from the peculiar effect it has on the respiratory organs, and in cases of heart affection, or where a tendency to cerebral congestion exists, in which it is a *sine qua non* that the circulation should be maintained in tranquillity, an elevation of over 7,000 feet is not a proper residence for persons so affected.

“ Private Michael Scanlan, of the 53rd Regiment, died from a complication of dysentery with phthisis pulmonalis : at the *post mortem*, the mucous membrane of the colon was in a diseased condition, ulceration in many stages being discovered, there were vomicae dispersed throughout the lung, with tubercles in various stages of formation. In some cases, a scorbutic taint existed. A man of the 24th Foot, named O'Donoghue,

exhibited a miserable and disgusting spectacle ; I think the case was of syphilitic origin ; the patient became emaciated and cachectic to a degree, while he suffered so much from pains of a rheumatic character, that nothing but morphia in large doses afforded relief ; his body was also one mass of disease ; loathsome sloughing sores pervaded gums, forehead, arms and legs,

“ This unfortunate did not derive the slightest benefit from the change, and has been sent for discharge before the committee at Ferozepore.

“ An Artillery man (the case is only entered in the return of the Hon'ble Company's troops) affected with syphilitic lepra and rupia arrived at the depôt from Peshawur, but the case has not in the least degree improved here : another artillery man of the Hon'ble Company's Service came up an epileptic. I need not hint at the inexpediency of sending such cases to Murree ; it seems the man by his own account had at a former period of his life suffered an attack of *coup de soleil*, but this circumstance was not mentioned in the abstract of his case by the medical officer, at whose recommendation he was sent to the sanatorium ; indeed in many instances these abstracts were of little use as guides in treatment, as instead of detailing a brief but satisfactory account of the patient's case, they did little more than name the form of disease. The remaining cases among the few men sent to this depôt consisted of lumbago, occurring in a cachectic debilitated subject, who had also suffered from renal disease ; the man was in hospital nearly the whole time he was at the depôt, and was recommended for change to Europe.

“ A soldier of the 22nd Foot, was sent up during the hot season labouring under Hemiplegia of right side : he received much benefit in his general health, but the paralytic affection rendered it necessary to recommend him for discharge. A man affected with an inveterate scaly eruption, returned Psoriasis, also suffered from scorbutic taint, and as he also laboured under disease of the tissues of the ankle joint, he was recommended for change of climate to Europe.

“ Two cases of indolent ulcer of the lower extremities were sent up ; one man of vitiated habit, and low state of vitality was sent before the Inspector General's Board ; the other, a man of the 32nd regiment, returns to Peshawur much improved, but I fear, service will again cause the ulcers to break out. As may be seen by examining the return, the table of diseases is scanty, and with exception of the classes noticed, I have now nothing left to report upon.

“ I have endeavored in the foregoing short history to enumerate the classes and orders deriving most benefit from the change to the hill climate, and hinted at the necessity of retaining soldiers labouring under certain forms and stages of disease with their regiments ; I gave an instance of a regiment sending up seven men, all of whom, will return, as they say themselves ‘ in better health than they have enjoyed in the country, since their arrival ’ : I also instanced another regiment sending to the depôt eighteen men and only getting back five ; and endeavored to account for so startling a contrast : I have no doubt the sending of men, in the last stage of disease, with the object of ‘ giving them a chance,’

as it is termed, emanates from the most philanthropic motives, and it is not for me to condemn the principle ; but I cannot help noticing for the sake of the character of the sanatorium that, had the selections been so favorably made as in the case of the 3rd Dragoons, I should not have had six casualties, and twenty-nine cases of invaliding to Europe, with some doubtful cases returned to their regiments, to record.

“I need not lengthen the report by detailing the description of men diseases, &c., which should be selected for Murree, the rule which holds good at other hill sanatoria in the Himalaya is applicable to Murree, and the rules in force on this head are sufficiently plain for the guidance of medical officers of corps, and committees, and should be adhered to, as closely as possible.

“The average ages of the six fatal cases are a little over thirty years, while the average service in India is about ten years and two months.

“In conclusion, I would say a little on the subject of the *depôt* being only in existence during the summer months. This is without remedy at present, as it is impossible invalids could winter here in their present barracks, but when permanent substantial buildings are completed, it would be advantageous in many cases to keep the men up the whole year, as at Landour ; from the salubrity of the climate, its now dry and bracing range of temperature, the convalescents are becoming robust and healthy, and I have no doubt, were they permitted to remain up the whole winter, the beneficial effects of climate would possibly be more renovating than a change to England. We appear to be going to the plains at a time, when to experience the full effect of such delicious weather, we should permit the men to stay up ; for the last two months succeeding the rainy season, the sky has been clear and cloudless, the mornings and evenings cold, with latterly frost on the ground, while the temperature during the day, is most pleasant ; the peaks of the mountains bordering on Kashmere are getting capped with snow, but the lofty hill in our immediate vicinity ‘Mootehpooree’ is still verdant, so that probably until January there may be no fall of snow at Murree ; and with abundance of fire-wood existing in such quantities, a sojourn throughout the year cannot be too trying for the European constitution in certain cases. I am informed, it is intended to build barracks for two hundred men ; it is a pity, that accommodation should not be prepared for twice that number, with such an unhealthy cantonment and the destructive effects of local malaria and disease producing causes as at Peshawur in the vicinity.”

“In the cases of children, the salubrity of the climate was productive of equally satisfactory results, sickly and apparently dying infants coming up labouring under diseases of dentition, &c., returned to the plains with the rosy hue of English childhood in their cheeks, while adults, exhausted by agues in the plains, speedily acquired constitutional vigour enough, to enable them to shake off the periodicity (if I may term it) of their attacks, and returned in robust health ; and finally, I cannot adduce or pay a higher tribute to the salubrity of this lovely hill station than by stating the rapid increase in the number

of good dwellings ; there are two or three superb houses, the residence of the Commissioner, &c., while no fewer than fifteen respectable and commodious mansions have been erected this year, while the building sites for future dwellings within the station bounds are being all eagerly bought up. Before closing the report, I should also bear testimony to the excellent quality of the water, pure, limpid and sweet ; it contains no deleterious vegetable impregnations, so common at other hill stations, and good water is of itself an important element of health. I have given in the return, the monthly mean of the Thermometer during the six months, which for that period exhibits an average, or mean, for the season of 61.85° ."

We shall now conclude our extracts with the following
 1853. from the report for last season, by Dr. J. B. S.
 Brown:

"The average number of Invalids for the season of 1852 was 102, for the past season the number, including the Honorable Company's forces, as well as H. M.'s, has been 100 ; the number of deaths in the latter has been four, and one in the former makes a total of 5. One was a case of remittent fever ; one of chronic hepatitis, one of chronic rheumatism, one of acute dysentery and the case of Gunner Thomas Sutton, of the Honorable Company's Artillery, of intermittent fever.

"Of admissions into Hospital fevers of the intermittent and remittent types have numbered 120 ; diseases of the liver 25 ; dysentery 17 ; diarrhœa 13 ; rheumatism 12 ; admissions on all other complaints have been infrequent. I would remark that every complaint seems to do well here, with exception of confirmed consumption, where vomicæ are present in the lung ; old and obstinate cases of rheumatism and chronic dysentery of long standing where the lining membrane of the bowels is much ulcerated, and I would recommend that these should never be sent up.

"No epidemic has visited Murree this year. I am happy to report also that, hitherto, it has been free from diarrhœa—a complaint said to be troublesome at most of the hill sanatoria in the country.

"As this diarrhœa is very probably brought on by the noxious exhalations produced by the native custom of retreating behind the bushes, &c., in the jungle, and where native retinues are at all large, as is frequently the case at Simla, where I understand the diarrhœa is the worst, it is easy to imagine how soon an extensive district may become contaminated, particularly when it is remembered that there are the same active forces operating in the hills, which in the plains make the nuisance less of an evil, I allude to the powerful rays of the sun and the extreme dryness of the air, which absorb the moisture almost before any actual decomposition can have commenced. I must be excused for dwelling on this too much neglected subject. There is one more circumstance that appears to aggravate this nuisance in the hills ; in the plains the effluvia from this source of contamination seems to rise perpendicularly to a certain limited height, and is, comparatively speaking, got rid of, but in the hills where, I believe, the effluvial emanations to be more excessive, it seems to travel about up and down the face of

the hill, acted upon by the different currents and the changes in the atmosphere, and thus has more frequent opportunities of producing an effect upon those it comes in contact with, than could be the case in the plains. If there is any truth in this idea, it may happen in the course of two or three years that Murree may become as notorious for the derangement alluded to, as any other hill station, at all events it would be prudent perhaps to encourage the natives to go as far down the hill as possible, by removing all superfluous jungle and rank grass, of which I see a large quantity is still allowed to grow in many parts of the station.

"It may not be out of place here to mention, that profuse hæmorrhage from the nose is not uncommon. It would seem to occur more frequently in cases that have suffered from much general debility before coming to the hills.

"Lastly on a general view of the statistics of the depôt, it will be seen that on the whole the past season has been decidedly a healthy one. The cases that terminated fatally do not amount to a high average, considering the serious state of internal disorganization that so many of the Invalids were in at the time of their arrival. I see that it has been recommended by a medical officer who was formerly in charge of the depôt that at the first only such cases should be sent up as are likely to get well, in order that the reputation of Murree as a sanatorium, should not suffer from too many incurable cases having to be reported unfavorably of. This was a good suggestion for the period, but the reputation of Murree being by this time so thoroughly established, and as it seems scarcely just to deprive a sufferer of the probability of ending his days in greater peace, because he could not be altogether cured, I beg to suggest that these bad cases should be sent up, but that their names should not be entered in the sanatory report, but that separate returns should be made out and kept exclusively for them.

"I would take the liberty of further recommending urgently that no drunkard should be allowed, on any reason or pretence whatever, the privilege of coming up to the hills : in this prohibition I do not think it would be desirable to include men whose disease had in the first instance been brought on by drinking, but those only who were still in the habit of drinking, or who had been convicted of the offence within a year of the intended time of sending them up. The hills will do such a man no good ; he will have tremendously increased facilities for indulging, and be the cause of preventing another man's coming who might have behaved soberly and been a credit to the sanatorium."

Having thus given a tolerably complete representation of the various professional incidents of the three seasons under review, we shall now proceed to make a few general observations.

In the first place we have to notice, that the reporters are unanimous in opinion, in respect to the suitability and salubrity of the station of Murree, our acquaintance with which is no longer vague or partial;—its success has been complete.

During three seasons, there were 14 deaths among above 300 invalids,* but it is to be borne in mind that of the subjects of these casualties at least eight men were labouring under most serious organic disease when they arrived at the depôt, five having large chronic abscesses in the liver, and one suffering from pulmonary consumption, in so advanced a stage that no climate or treatment could have availed much.

The amount of invaliding to England was large, being in the first two seasons, equal to 20 per cent. of the strength, but this is explained by the closing of the depôt on the approach of winter, for many of the invalids were just beginning to mend during the fine, dry, bracing cold of the latter half of October and beginning of November, when they were ordered to the plains: an opinion is expressed (and we fully concur in it) that a residence during one winter would have probably done some of the men as much good as a change to England;—we allude more especially to the numerous cases entered under the head of chronic enlargement of the Liver or of the Spleen, and to cases of Ulcer and of some skin affections.

But of the large proportion who rejoined their regiments, the majority had derived unequivocal and no doubt permanent advantage from the hill climate; they looked fresh, robust and healthy, and it would be interesting to trace their history in subsequent years.

It is most important to notice the total absence of that obstinate endemic diarrhœa which is so prevalent in the Simla group of hills; the cases that occur occasionally at Murree are amenable to treatment, and seem to be traceable to diminished or impeded function of the great emunctories of carbon—the liver, the skin and perhaps the lungs also in consequence of a cold and rarified atmosphere.

There is also no mention of the prevalence of that scorbutic taint which was at one time so general among the troops located at Kussoulee and Subathoo; this is an additional fact in corroboration and extension of the view advocated by some Medical Officers, that the hill climate does not predispose to or cause this Scurvy, but that the regiments were deeply infected with the disease on their arrival in the hills, and that it became aggravated, and added greatly to the fatality of other diseases supervening upon it, in consequence of certain unfavorable circumstances connected with the

* See the returns in the Appendix.

first occupation of these hill stations,—circumstances which no longer exist, and hence undoubtedly the ameliorated state of health of the troops located there.

The defective sanitary conditions and consequent deterioration of the atmosphere which existed, and probably still exists, at Simla are not yet met with in force at Murree, and hence its greater salubrity; if this be so, it is a fact strictly accordant with the view that much of the endemic sickness prevalent at some of the older hill stations is to be attributed more to extraneous and preventible sources than to anything, inherently injurious in their climate. Should, therefore, Murree increase to any great extent, care must be taken, that the reputation it owes to its natural advantages be not neutralised by the evils almost inseparable from a dense population, and for this purpose we would recommend the rigid enforcement of all local regulations by the magistrate or commanding officer, and a daily and habitual sanitary inspection by the police: visits of inquiry should also form a recognised and imperative part of the duty of the Medical Officer of the *depôt* or station, who should report upon any evidences he can trace of disease originating within the limits of cantonments from preventible causes.

We need scarcely add that the sanitary objects of most importance are the daily carrying away of all excremental matters, and of all sources of offensive emanations, animal or vegetable; the supervision of slaughter-houses, attention to drainage, and the maintenance of the sufficiency and purity of the water supply; all low-lying jungle should not only be kept free from filth, but it should be cut down, so that the surface soil may be freely open to light and air; forests should be judiciously thinned, for, however desirable it may be to preserve trees as an ornament to the station, there can be no doubt that, if too numerous and dense, they add considerably to the humidity of the climate, and thus act in some measure prejudicially.

The several Medical Officers in charge of the invalids at Murree are unanimous in their expressions of regret at the number of unsuitable cases sent to the *depôt*. This is a fit subject for inquiry and remedy. Doubtless many of the patients were exposed to much unnecessary suffering, and some of them had their span of life shortened by the unavoidable fatigue and discomforts of a journey, from which they could derive no benefit, while Government was put to useless expense, and other invalids deprived of a change which might have re-established their health.

We purpose at another time to devote a paper to a full consideration of the various types of disease in which the climate of the mountain ranges in this presidency exerts either ameliorating or curative effects: our present object is to draw attention to those diseases, in which experience teaches us the hill climate is either manifestly injurious or cannot possibly do any good. We allude to patients in an advanced stage of dysentery or diarrhœa, pulmonary consumption, diseases of the heart, chronic rheumatism, secondary syphilitic affections, epilepsy of centric origin, &c. Medical Committees should be absolutely forbidden from sending such cases to the depôts; for, hitherto, these patients have either died or been invalided to England after a fruitless trial of the hill climate for one or two seasons. For the recovery of some invalids of this class, a sea voyage and a protracted residence in their native country are perhaps absolutely necessary, but we are confident that many might be restored to health and to the service, if there was a convalescent depôt in the Bay of Bengal, in a healthy, elevated position, and open to the sea breezes.

The Island of Negrais was many years ago pointed out by Mr. J. R. Martin, late of this service, as possessing every advantage for a sanatorium, and it is now possible to apply it to such a purpose. We may add that a situation apparently equally advantageous, and certainly more convenient and sheltered, may be found on the fine promontory close to this Island, and near the proposed site for the new town of Bassein, where there is a temperature of as great uniformity and constancy as can be found any where on the eastern seaboard: the only objection which occurs to us is, that it may be found too damp and relaxing during the south-west monsoon. This recommendation, however, is only intended to apply to troops located in lower Bengal, or to such extreme cases of disease arriving from the north-west as absolutely require an ocean climate, for which purpose they are sent on a long voyage to England at a great expense (as happened last year) to Government.

But we are satisfied, that many of those so sent home might have had their health perfectly re-established in the upper Provinces and at no great distance from Simla in a tract of country "locally individualised" in respect to absence of humidity and variety of climate, with a great diversity of objects of interest, to stimulate the mind and promote its activity: we allude to Kunawur, a brief notice of which is contained in Mr. Grant's paper on hill diarrhœa in the first

number of this Journal. Many forms of disease which, at Murree and Landour are quite intractable, begin soon, under the influence of this dry bracing climate to change their character, and to be ultimately removed. Thus the variety of currents and changes of atmosphere and the cold humidity of the rains at the above stations, render the climate most unsuitable for rheumatic patients,—a large class of invalids. The same applies to intractable secondary syphilitic cases, chronic diarrhœa and dysentery, scorbutic affections, the eccentric form of epilepsy, malignant ulcers, and some inveterate diseases of the skin, greatly impaired general health marked by anæmia and cachexia, and dyspeptic complaints which are much aggravated by the depressing effects of cloudy and rainy weather.

Our experience of Kunawur is as yet too limited to justify us in offering a decided opinion on the full advantages that might be derived from it in some conditions of organic disease ; but we are confident of the value of its pure, clear and salubrious air in the chronic affections above enumerated.*

Beyond Chini and its snow-clad mountain boundary, there are some beautiful valleys with pretty shaded and cool spots,—some quite park-like, dotted with noble old trees and thriving vineyards ; in this favored region the precipitation of moisture is very scanty, for, though thunder is at times heard at a distance, there is no flash seen, and consequently there are no heavy showers.

It is difficult indeed fully to realise the grand spectacle presented by some of the stupendous mountain slopes that here rise from the bed of the Sutlej to the height of many thousand feet, where we observe a scale of diminishing atmospheric temperature from their base to the line of perpetual snow, a picturesque gradation of the different species of plants, that indicates the modifications of climate found stage upon stage in the long cultivated terrace way, where fields rise above fields, fed by narrow streams of the purest water, that flow down the declivities with impetuous force ; here we mark a close proximity—a singular regularity and

* In proof that we do not exaggerate the importance of this subject, we may state that in a statistical return now before us, of the invaliding among the European troops (Queen's and Company's) in Bengal from the year 1847-48 to 1851-52 and the diseases by which occasioned, it appears there were sent to England, on account of rheumatism, 265 men ; secondary syphilis, 34 ; chronic hepatitis, 82 ; chronic dysentery, 149 ; chronic diarrhœa, 41 ; epilepsy, 34 ; dyspepsia, 5 ;—Total 610.

variety of vegetable forms, rice and corn and pulse,—the plantain, the vine and the wild strawberry.

Thus, the invalid has the benefit not only of selecting a climate of suitable temperature, but he will enjoy the magnificent scenery and reap advantage from the rich vegetable productions of the soil. And, although the soldier is not of a class whose mind and feelings are easily awakened to the influences of the contemplation of nature, yet his spirits cannot fail to be favorably aroused and animated by the noble scenery around him.

There is also a rare transparency in the air, a serenity of the azure sky by night and in the early morning which re-acts on the feelings and the whole mental disposition; its influence is felt in a lightness about the chest, an infusion of strength and an animated enjoyment of existence which we have experienced nowhere else except among our native mountains. We do not remember ever to have looked on a grander scene in nature than the lofty peaks of the Khylas, standing out in dazzling whiteness under that azure sky; it is ever associated in our mind with our first view of the glorious Taj-Mehal, rising in all its purity amid the parched and barren country around Agra. To see the Himalayas, therefore, to advantage, the traveller must not limit his visit to the ranges that adjoin the plains, but proceed into these regions in the interior, and beyond the influence of the tropical rains.

We have to beg pardon for this digression, and will now conclude our first paper in illustration and discussion of the Hill Convalescent Depôts—a study so full at once of importance and of interest, and destined to be so much more so, when the rail shall connect Bengal with the North-Western Provinces.

APPENDIX.

General Abstract of Admissions and Deaths among the European Troops at Murree Convalescent Depot, from May till November, 1851.

	Strength.	Average daily sick.			By Acute Diseases.			By Chronic Diseases.			By Surgical Diseases.			Total proportion of deaths.	Thermometer.			Wind.	Weather.	
		Admitted.	Died.	Proportion of deaths.	Admitted.	Died.	Proportion of deaths.	Admitted.	Died.	Proportion of deaths.	Total admitted.	Total died.								
May,	107	20-04	26	0	0	28	0	0	0	6	0	0	60	0	76	63	50	N. E. and S. E.,	...	Rain on the 24th, accompanied with hail storm, rain on the 25th, evenings foggy.
June,	107	23-40	10	0	0	2	0	0	0	3	0	0	15	0	61	55½	50	N. E., N. W., S. E.,	...	Rain on the 6th, 8th, 9th, 14th, 17th, and hail 19th, rain 20th, 21st, hail 23rd, rain 24th, mornings and evenings foggy.
July,	106	24-58	7	1	1 in 1	4	0	0	0	1	0	0	12	1	81	70½	60	N. E. and N. W.,	...	Rain and foggy from the 7th to 31st off and on.
August,	105	18-78	5	0	0	3	1	1 in 1	1	2	0	0	10	1	74	67	60	N. E. and N. W.,	...	Rain on the 1st, 2nd, 12th, 13th, 16th to 26th and on the 31st.
September,	104	18-52	4	0	0	1	1	1 in 1	1	1	0	0	6	1	70	62	54	S. E., N. E. and N. W.,	...	Rain and hail on the 6th, rain on the 14th, 15th, 16th, 17th and 29th.
October,	91	5-66	2	0	0	3	0	0	0	0	0	0	5	0	70	59½	49	S. E., N. W., N. E.,	...	Rain on the 31st.
November,	91	5-69	1	0	0	0	0	0	0	0	0	0	1	0	53	51	44	N. W., N. E.,	...	Rain and hail on the 1st and 2nd. Earthquake on the 9th.

General Abstract.

1852.																		
Strength.	By Acute Diseases.			By Chronic Diseases.			By Surgical Diseases.			Total admitted.	Total died.	Total proportion of deaths.	Thermo-meter.			Wind.	Weather.	
	Admitted.	Died.	Proportion of deaths.	Admitted.	Died.	Proportion of deaths.	Admitted.	Died.	Proportion of deaths.				Maximum.	Medium.	Minimum.			
April, ...	92	23	5	0	0	37	0	0	0	0	42	0	0	62	54	46	N. E. and S. W., ...	Morning, noon and evening cool and cloudy, occasional showers of rain and hail with thunder and lightning, evening of the 24th a severe thunder storm, morning of the 29th ditto.
May, ...	93	$21\frac{23}{31}$	5	0	0	23	1	1	0	0	28	1	1	62	$58\frac{1}{2}$	55	N. E. and S. W., ...	Morning, noon and evening tolerably cool and pleasant, 22nd, 6th, 18th, 19th, 20th, 21st, 25th, 26th, 27th and 29th, slight showers of rain and hail with thunder and lightning. Hail, a thunder storm, and a gale of wind from N. E., commencing afternoon of the 11th and ceasing evening of the 13th at P. M. 24th very stormy and unseasonable with severe gales of wind from N. E. with heavy masses of clouds rolling over the station from the same direction. Thunder, lightning frequent and close, rain and hail storms.
June, ...	95	$23\frac{25}{30}$	6	0	0	22	3	3	0	0	28	3	3	72	68	64	N. E. S. E. S. W. & N. W.,	Morning noon and evening tolerably cool and pleasant, on the 1st and 2nd showers of rain, with thunder and lightning afternoon of the 13th. A gale commencing at N. W. varying to N. E., heavy rain, thunder and lightning, evening of the 16th and 17th, gales of wind from S. W. and N. E., rain and hail with thunder and lightning, from the 22nd to the 30th, heavy masses of clouds rolling over the station, with occasional showers of rain, thunder and lightning.

General Abstract.—Continued.

1852.																		
Strength.		By Acute Diseases.			By Chronic Diseases.			By Surgical Diseases.			Total admitted.	Total died.	Total proportion of deaths.	Thermo-meter.			Wind.	Weather.
		Admitted.	Died.	Proportion of deaths.	Admitted.	Died.	Proportion of deaths.	Admitted.	Died.	Proportion of deaths.				Maximum.	Medium.	Minimum.		
July, ...	98	8	0	0	24	0	0	0	0	0	32	0	0	0.70	67	64	N.E. S.E. S.W. & N.W.,	Morning, noon and evening cool, heavy masses of clouds rolling over the station with heavy showers of rain throughout the month, usually during the night with occasional showers by day.
August, ...	98	5	0	0	12	0	0	0	0	0	17	0	0	0.66	63	60	N.E. S.E. S.W. & N.W.,	Morning, noon and evening cool, occasional heavy showers of rain throughout the month.
September, ..	96	4	1	1	7	1	1	0	0	0	11	2	2	0.68	63	60	N.E. S.E. S.W. & N.W.,	Morning, noon and evening cool and clear, from the 4th to the 8th occasional showers of rain, on the 13th and 16th heavy showers of rain with hail, thunder and lightning from N. W. evening of the 22nd and 23rd. A gale commencing from N. E. varying to N. W. with rain and hail.
October, ...	64	1	0	0	2	0	0	0	0	0	3	0	0	0.67	60	55	N.E. S.E. S.W. & N.W.,	Morning, noon and evening cool and clear, on the 8th heavy showers of rain and hail, and a gale of wind from N. E.

Table showing the present Bazaar rates at Murree.

Names.	Price per Rupee.			Names.	Price per Rupee.		
	Seers.	Chittacks.	Number.		Seers.	Chittacks.	Number.
Arhur, ..	8	0	0	Rice, 2nd sort, ..	7	0	0
Atta, (Flour) ..	16	0	0	Rice, 3rd sort, ..	8	0	0
Almonds, ..	5	0	0	Rice, 4th sort, ..	10	0	0
Baskets, ..	0	0	13	Rice, 5th sort, ..	12	0	0
Butter, good ; village ..	2	0	0	Raisins, ..	5	0	0
Ditto, bad, bazaar ..	0	12	0	Shukkur, ..	6	0	0
Barley, ..	24	0	0	Sugar, ..	3	0	0
Bran, ..	24	0	0	Sugar-Candy, ..	2	12	0
Budhan, (hammer for breaking stones) ..	2	4	0	Sun (Hemp) ..	9	0	0
Cotton, (cleansed) ..	3	8	0	Sootlee, ..	5	8	0
Chillies. ..	5	0	0	Salt, Lahore, ..	12	0	0
Cardamums, small ..	0	2	0	Saltpetre, ..	4	0	0
Cloves, ..	1	2	0	Sount, ..	4	0	0
Cocoanuts, dry, ..	1	0	0	Soojee, ..	8	0	0
Dhunneah, ..	8	0	0	Soap, country ..	3	0	0
Duhee, ..	11	0	0	Suet, ..	3	8	0
Dates, ..	4	8	0	Turmeric, (Huldee) ..	5	0	0
Gram, ..	16	8	0	Wheat, ..	21	0	0
Goor, ..	9	0	0	Fowls, 1st sort, ..	0	0	7
Ghee, ..	3	0	0	Ditto, 2nd ,, ..	0	0	8
Garlick, ..	18	0	0	Ditto, 3rd ,, ..	0	0	9
Ghurras, ..	0	0	8	Eggs, ..	0	0	64
Honey, ..	3	0	0	Loaves, ..	0	0	12
Indian Corn, ..	27	0	0				
Iron Lahoree, ..	5	8	0				
Ditto Bijouree, ..	5	0	0				
Ditto Nails, ..	2	8	0				
Jeerah, ..	2	0	0				
Khobanee, ..	4	0	0				
Mussoor, ..	12	0	0	Masons, 1st rate, per day. ..	0	6	0
Moong, ..	10	0	0	Ditto, 2nd rate, ,, ..	0	5	0
Milk, ..	16	0	0	Ditto, 3rd rate, ,, ..	0	4	0
Mutton, bazar, ..	8	0	0	Carpenters, 1st rate, ,, ..	0	6	0
Oord or Mash, ..	10	0	0	Ditto, 2nd rate, ,, ..	0	5	0
Oil, ..	4	0	0	Ditto, 3rd rate, ,, ..	0	4	0
Onions, ..	32	0	0	Coolies on roads, ,, ..	0	3	0
Pistachio nuts, ..	1	0	0	Ditto on other works. ,, ..	0	2	6
Pepper, ..	1	8	0	Bheestees, ,, ..	0	4	0
Pharwas, ..	2	8	0	Tinning, per score, ,, ..	2	4	0
Rice, 1st sort, ..	5	0	0	Shoeing, per horse, ,, ..	1	8	0

Statistical Return of the Men sent up as Convalescents to the Murree Depot, for the Years 1851, 1852, and 1853, commencing 1st May, 1851, and ending 30th November, 1853.

Murree, 1st December, 1853.

FOR THE YEAR 1851.																									
Average Annual Strength, European Officers and Fighting Men 107—Daily average Sick 16—65.																									
Diseases.																									
Amnesia.	Rubor Simplex.	Catarth. Act.	Colica.	Contusio.	Delirium Tremens.	Diarrhea.	Dysent. Chron.	Dyspepsia.	Epilepsia.	Febri. Int. Quot.	Febri. Int. Quot.	Fistula in Ano.	Fistula in Perineo.	Gastritis.	Hemorrhoid.	Hepatic Chron.	Hepatic Chron.	Ophthalmia Act.	Ophthalmia Act.	Pneumonia Pulmonalis.	Pleuritis.	Rheumat. Act.	Rheumat. Chron.	Splenitis.	
Remained, ..	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
Since Admitted, ..	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
Total Treated, ..	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
Discharged, ..	1	1	1	4	1	2	5	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
Transferred, ..	2																								
Died, ..	1																								
Remaining, ..																									
Total, ..	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6	5	1	1	1	1	2	1	2	1	2	1	4	4	1	1	1	1	1
	1	1	1	4	1	2	6																		

