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LIEUTENANT-GENERAL SIR C. P. BEAUCHAMP WALKER, K.C.B.,
Chairman of the Council, in the Chair.

MILITARY COLONIZATION AS A RESERVE FOR INDIA.

By Major-General D. J. F. NEWALL, R.A. (retired), F.R.G.S.

"Res dura, et novitas regni me talia cogunt
"Moliri, et late fines custode tueri."

THE subject which I am privileged to bring under your notice to-day is no new idea: I cannot claim originality in its conception; nor can I truly assert that most of the arguments to be adduced have not already been discussed and sifted by far abler hands.

The colonization of the Himalayan and other mountain ranges of India; the establishment thereon of more sanatoria; and even the planting of "*Military colonies*" has for years past been counselled by several men of mark; and their arguments in favour of such a step have been various and strong: "Reduce"—say these advocates—"the strategic points in the plains to a minimum, and locate the bulk of your British troops in the mountain ranges." Sanitary statistics indubitably point to this as an act of wisdom; and I hazard the suggestion that it may possibly be found equally wise in a political and strategic sense. I have myself formerly advocated such a view of the question, and in drawing up the present paper must be pardoned if I here and there borrow my own words on this subject.¹

2. On reference to a "Lecture delivered at the Branch United Service Institute for India, at Darjeeling, on the 30th October, 1872," I find I have instanced the Colonial systems of *Spain* and of *Portugal*—also of the Romans in Britain—as historic studies approaching the

¹ *Vide* Nos. 10 and 12 of the "Journal of the United Service Institute of India," "1873," on the "Strategic Value of Cashmere," and "On the Colonization of the Mountain Ranges of India."

condition of British India as parallels; but although they have some points in common, the attempt to infer the future of India from the analogy of history is not valid, and has been deprecated. We stand alone in the experience of nations as regards British India, and no parallel exists in the history of the world from which to draw an inference as to its future. We must, therefore, evolve for ourselves and from our own prophetic forethought the idea of a "future India."

It is the object, therefore, of this paper to attempt a closer investigation of the probable bearings of this important question; and, first, it may be convenient perhaps shortly to review the opinions of a few able men who have made this question their special study.

Up to 1813, the opinion obtained that "a large influx of Europeans into our Indian territories must prove dangerous to the peace and security of those invaluable possessions."—*Letter of Court of Directors, H.E.I.C., to Lord Liverpool, dated 27 May, 1813.*

After this, however, a decided change in the views of the Indian Government seems to have taken place, for in 1829 we find Sir Chas. Metcalfe recording his opinion "that it is a matter of regret that "Englishmen in India are excluded from the possession of land and "other ordinary rights of peaceable subjects," and he expressed his belief that these restrictions impeded the prosperity of our Indian Empire.

Again, in 1830, Lord W. Bentinck says, "I feel most anxious that "the state of the law should be so amended as to oppose no obstacle "to the settlement of British subjects in the interior."

In 1832, when the parliamentary discussion on the renewal of the H. E. I. Company's Charter took place, we find our tenure of India compared to a "gigantic tree, its trunk and branches of vast strength, "but resting merely by the pressure of its superincumbent weight, instead "of having shot its roots into the earth!" Hence clearly recognizing the fact of our having no real grasp on the soil. Again, our Indian Empire is compared to a "Titan with arms of iron, head of brass, legs "of oak, feet of clay. The giant's feet of clay his weakest part, and "the first great storm may lay him low!"

What does this point at, but a want of a grasp on the soil in other words, of *colonization*?

The hackneyed simile of the "inverted pyramid" has often been applied to our tenure of India.

Metcalfe wished to colonize India.

Malcolm says "India is as quiet as gunpowder," and proceeds to urge its colonization.

Lawrence (Sir H.), as long ago as 1844, in his Essay on "The Military Defence of our Indian Empire," advocated partial colonization, especially for *military* settlers. To quote more modern opinion, I may add that *Campbell* (Sir G.), in his work "*India as it may be*," enters upon this subject and advocates colonization. He says, "I would "have Government to encourage hill colonization to the utmost, and "especially to hold out inducements to its servants to settle in the "country."

Such, then, are a few opinions favourable to the general scheme

of colonization of India; but I would go a step further, and advocate *Military Colonization*.¹

I am aware, however, that the very idea of a *Military Colony* is so distasteful to the political ideas of the present day that I prefer the term "*Sanitary*," or, better still, *Industrial "Circles"* as the appropriate designation of the Military settlements I purpose to bring forward for discussion.

3. Now I hope I may be considered "*in order*," and as not wishing to offend the susceptibilities of any, when I remark that the "European Colonist," the "*interloper*," as he was called, hasal ways been regarded as an objectionable being in the eyes of an Indian Government. We know that it takes a full generation to kill a prejudice. Men, otherwise sound and far-seeing, are apt to cling to the prejudices of their early manhood; and, as advisers, are inclined to apply the traditional drag on progress, perhaps too freely at times. The traditions of the old East India Company still survive, and their sins of omission in this respect, and obstructiveness to European settlement and enterprise, have taken too deep a root to be easily eradicated. It has always appeared to me that a great opportunity was lost, as a mitigation of the dilemma of the Indian Staff Corps, "with its vast burden on the "revenue," to which the State was committed, in not encouraging surplus Officers and time-expired soldiers, discharged at the time of pressure, to volunteer for a "*Reserve*" for India, granting them perhaps land *in fief*; it being understood that *fief*, or fee simple, is "*that which is held of some superior, on condition of rendering him service, in which superior the ultimate property of the land resides.*" It is suggested for consideration whether military "*circles*" might not perhaps be thus inaugurated, as one means towards the formation of a "Reserve Force for India."

4. A Russian gentleman once remarked to a friend of mine: "You need not expect to continue to hold India unless you follow our example, and colonize;" and, indeed, the want of a "Reserve" seems manifest. I would speak with the respect and diffidence becoming an old soldier; but the absence of a "policy" on that point inspires distrust.

At any rate I would advocate anticipating the march of events, and getting as much of the mountain soil of India as possible into our own hands, and occupied by our own colonists, bound to us in military fief, before private enterprise shall have stepped in and absorbed the mountain tracts, and so in the end creating those very political complications apparently apprehended (if we may judge by the old exclusive policy) as involved in the land settlement of colonies whose citizens are not *sub vexillo*; and foreshadowing an *imperium in imperio*, antagonistic to the interests of the State.

As regards the objection that British colonists would supplant the natives, it may be remarked that colonists would bring their wealth

¹ Since delivering this lecture I have heard it stated that "there are records that Clive, Warren Hastings, Wellington, Munro, Bentinck, Metcalfe, Ellenborough, Dalhousie, Malcolm, Canning, and the Lawrences, amongst others, have favoured "the occupation of the hills." (HYDE CLARKE, V.P.S.S., &c.)—D. F. N.

and capital, and so renovate the land, which has hitherto been rack-rented to maintain an alien race; and the vitals of the revenue sapped to support the expensive-machinery of an exotic government. We should thus be restoring to India a portion of the wealth extracted therefrom. "For at this day we find a country drained of its wealth by men who are discouraged (if not actually prohibited by law) from applying any portion of their gains to fructify the soil whence they are extracted." Some day, as a means of fomenting rebellion, an enemy might point to the fact of our revenue being spent out of India, and the country thereby drained of its life-blood.

5. The Report of the Parliamentary Committee of 1858, on "the best means of promoting European colonization and settlements in India, especially in the hill districts and healthier climates of that country," as well as for "the extension of our commerce with Central Asia," embraces Dr. Martin's Sanitary Report, Dr. Hooker's "Report on Sikkim," and Captain Ochterlony's "Report on the Neilgherries and Malabar Hills."

It appears, however, a good deal hampered by local and partial developments, and refrains from definite recommendation of a policy for the State on those points. One of the results, however, seems to have been the collecting by Government officials of returns of "waste lands" available for settlement.¹ They are chiefly taken from the

¹ TABLE OF WASTE LAND (1861).

District.	Total acres.	Remarks.
Punjab, upper parts (3,000 elev.) favourable for European settlement	7,626,785	Leased out and embarrased with village grants.
Trans. Indus Highlands, Kohát Házára (16,479), may now be estimated	4,000,000	
Mooltan (district) suitable for indigo, &c.; hot and arid	1,510,388	
Himalayan States, Simla (Keyonthal), 5,676, 15,000; (districts 6,000 elev.) ..	20,676	
Kangra, waste land	16,136	}
Hooshiarpore, waste land	15,000	
Dehra Doon	204,526	Approximate. Culturable, besides thousands of square miles of forests.
Darjeeling	250,000	
Kumaon and Gurhwhál	500,000	
Assam, Kamroop (179,500), Cachar ..	5,000,000	
Damon-i-Koh (Raj Mahal)	675,840	Conjectural.
Madras, culturable lands (mamool)	13,554,333	
Bombay, Northern	1,635,666	
" Southern	2,000,000	
Scinde frontier	2,028	
Tenasserim provinces	628,034	
Pegu	13,146	
Mt. Aboo. Land leased to village communities	Nil.	
Mysore, table land	2,644,306	
East Berar, and the Sathpoora range ..	200,000	

special reports of 1861, and will serve to show the vast areas of waste or culturable land in India, at the disposal of the State for purposes of settlement. Some of the sites, however, are scarcely in climates adapted for *European* colonies, though others included in the larger figures are so, such as the Southern Mountains, and Khassia Hills;

6. "The Report on the Sanitary Establishment of European "Troops in India (1861)," and the "Memorandum on the Colonization "of India by European Soldiers (Punjab Reports)," does in some sort deal with this question of Military Colonization; and a writer in the "Calcutta Review" founds thereon a definite scheme of colonization. He even lays down the precise force that would result from the scheme, and it may be roughly stated at an accession of strength to Government of a Reserve of 10,000 infantry, 700 cavalry, and 72 guns.¹

I have only recently met with this scheme, and it has been gratifying to me to find my own views corroborated—I may say, forestalled—in this, as in some other instances, from perfectly independent sources.

7. The mention of Military Colonies leads to that of Hill Convalescent Depôts or Stations. There is an obvious connection between them. Except in the matter of *cultivation* of land; the real attribute of a *colony* (from *colere*—to cultivate), and other industrial avocations; a hill sanitarium might be made closely to approximate in its character to an *industrial circle*, such as I advocate. The garrison of the depôts as at present constituted is constantly changing, as the convalescents recover health they return to their corps; but were such garrison composed of veteran or time-expired soldiers, enrolled *sub vexillo*, as volunteers for such colony—with grants of land to Officers and men—*mutato nomine*, you have the elements of a *Military Industrial Settlement*.² In the sequel this especial development will be more fully

¹ The following is a summary of the Colonies (or *Regiments*, as the Reviewer calls them, vol. xxxvi, p. 220, *et seq.*, of 1861), suggested:

Punjab, Kohisthán	3 regiments reserve.
Kangra	1 " "
N.E. States of Punjab	1 " "
Total	5 regiments for Punjab containing 3,500 men of all arms.
Simla	1 regiment.
Dehra	1 "
Darjeeling	1 "
Rajmahal hills	1 "
Madras Presidency	2 "
Bombay "	2 "
Total	12 or 13 Colonies containing 10,000 infantry, 700 cavalry, and 72 guns.

² The author's former lecture on this subject, dated 30th October, 1872, was delivered whilst at Darjeeling in command of the Hill Depôt there; and perhaps his views may have been coloured by that fact.

He had sketched a plan of an industrial farm in connection with that command,

touched on. Meantime, I hazard the question: "*Could a Hill Sanitarium be expanded into such a Colony, and industrial pursuits developed in connection therewith, so as eventually to fulfil the conditions adverted to, of a self-supporting Colony or Reserve Circle?*"

Apart from their value as absorbing surplus industrial energy, and perhaps (when opened to volunteering) much of the floating vagrancy of the State, such colonies would naturally be amongst the means of securing a strategic grasp on the soil of India; affording as they naturally would do the nucleus of a *Militia* or *Reserve Force* to supplement the regular army; and, in conjunction with "entrenched camps" at the strategic points, would form rallying-points or refuges for the non-combatant portion of our nation in case of popular revolution, and would immensely strengthen the hands of Government.

Military Asylums are (or could be made) similar in general features, and might, perhaps, be considered as Military Colonies *in statu pupillari*; and might even be affiliated with such colonies, and the whole included within the protection of entrenchments, such as have been alluded to.

8. I observe that in a former lecture from which I have quoted (dated 30th October, 1872), I have enlarged on this special subject of "*Entrenched Camps*," or Refuges, remarks with which I need not trouble the present audience.

I would simply repeat that such works were strongly advocated by such authorities as the late Sir Charles Napier, Sir Henry Lawrence, and others; and I do not see why such purely military works should not in a great measure be thrown up by British soldiers, especially in the hills, where, in fact, strong working parties of various regiments do annually hut themselves, make roads, and generally enact the part of pioneers in ground selected for their summer encampments. To see the robust, rosy appearance of such men, instead of the washed-out faces one sees in the plains of India, is very cheering. I would ask, also, What more honourable employment for the British soldier than thus to construct works of grandeur and utility, such as the Roman soldiery have bequeathed to posterity as imperishable works on their native soil, as also, indeed, on the soil of this our Britain, whose occupation by Romans for several centuries bears a considerable historic parallel in some respects to our present occupation of India?¹ Should we eventually relinquish our great Indian dependency, British soldiers might thus point to something greater than the traditional pyramids of empty beer-bottles formerly attributed to us as a reproach.

If, moreover, the colonization of our splendid ranges of mountains be inaugurated; Military Colonies (or *Reserve Industrial Circles*) fostered;

and was on the point of submitting his plans to authority, when his term of command expired. As it was, he can attest that several of the Non-commissioned Staff and others realized considerable sums of money by raising stock, curing bacon, &c.

The draft of this sketch is at hand, and the questions raised in it might be reproduced perhaps for discussion with advantage, would time and space admit, as a suggestion for the industrial development of a Hill Depot.

¹ Caesar landed in Britain, B.C. 55, and the last Roman soldier left the country A.D. 426. The occupation of Britain, therefore, by the Romans lasted more than 450 years.

English settlers of capital and enterprise encouraged, and the other obvious means of obtaining a grasp on the soil of India carried out; we may find the India of the future fulfilling the condition of a self-protecting colony; a consummation, perhaps, hereafter devoutly to be wished by England, in case of war; when instead of a degenerate population such as some of the South American Colonies of Spain present to us at the present day, we may hope to find citizens of pure Anglo-Saxon type, as the National garrison of India: able and ready in alliance with gallant native *auxiliaries* to face a world in arms.

9. *Politics* are I believe prohibited in this assembly, I might otherwise perhaps venture on speculation as to the *Future of India*, a deeply interesting subject. I might ask, Is our national flag *India* for the *English*? or *India* for the *Indians*? I would rather hope we may be able to say, *India* for the *Empire at large* and *Humanity*. By degrees, no doubt, the two races may be welded into a common interest, and a *grand National Army* for the general defence of the Empire, as attempted to be shown, created, both *Regular* and *Reserve*.

As regards the planting of colonies, I would not exclude our *Native* soldiery. Colonies of *Sikhs*, *Dogra*s, *Goorkhas*, and other warlike races might be planted in certain sub-alpine points with advantage¹, the experiment has been tried in the case of *Goorkhas* with considerable success. *Russia*,² *Austria*, *Persia*, *French Algeria*, are examples of nations who have planted *military villages* as one means of holding a frontier against savage neighbours, as I have pointed out in a paper on the "*Defence of our N.W. Frontier*" (in No. 10 of the *Journal U.S. Institute for India*), where I instanced the *Gunze* or *Ganz* regiments of the *Austrian* frontier as a case in point; originally organized as a *cordon sanitaire* against that fell enemy the plague, at that time threatening an advance into Europe, they were retained after their special object had been fulfilled.

But, indeed, history is replete with such instances. We know what a success the *Roman Military Colonies* were: veritable *propugnacula imperii*: These colonies were cities or lands which *Roman* citizens or soldiers were sent to inhabit.³ One-third of the land was ordinarily

¹ Perhaps in "*India Alba*," our newly acquired trans-Indus territory, which I have treated of in Section 16 of a work on the "*Highlands of India*," presently to be mentioned, I am treading on delicate ground; but the alacrity with which *Russia* has found an opportunity for a *congratulatory* mission to *Abdāl Rahmān* of *Cabul* is remarkable.

² Let us not forget that *Russia* is a *colonizing* as well as *conquering* Power. I would pause to say how interesting are some of the accounts one reads of *Russian* regiments or batteries—chiefly *Cossacks*—settling down on conquered lands in *Siberia* and elsewhere. Cut adrift from their supplies, they hut, clothe, and supply themselves with food by hunting, fishing, &c., besides agriculture and other pursuits of the Colonist. What a field for individuality! Such an expansion of *Military* life is indeed attractive! Could it ever be ours? Carrying with them their loyalty and cultivation—military and mental—into the wilderness, these able officers of *Russia* are true patriots, and they carry their country's flag into new regions of the earth; fulfilling, also, the idea of a (*Roman*) colony *sub vexillo*.

³ The *Tartar* quarters of *Chinese* towns were evidently originally camps or citadels of the conquering race, antecedent to the times when the races became fused into a *Chinese* nationality.

set aside for the garrisons, which (in the times of the Empire) often consisted of an entire legion bodily settling on its garrison lands; but in ordinary cases a colony was led forth *sub vexillo* (which may be rendered "colours flying") by officials, triumvirs, ordinarily three in number, and the land was then and there ploughed and allotted to the volunteer colonists. These were essentially *military colonies* fostered by the State, and proved the salvation of the Empire for a time. On the other hand, the Greek colonies (as also, indeed, the North American Colonies of England, afterwards the United States of America) are standing examples of what colonies should *not* be—namely, settlements of disaffected citizens, who afterwards became bitterly hostile, and even subversive of the parent State. Is no moral to be drawn from such examples?

This, I think, forms an additional argument for *military colonization* and *volunteer corps*,¹ and with this in view it would seem advisable to get some more of the waste lands of India settled by tenants of the State bound in fief to defend the land; the designation of fief, or fee simple, being, as already stated, "that which is held of some superior 'on condition of rendering him service,' in which superior the ultimate property of the land resides.

10. I am bound to say, however, that arguments on the other side are not wanting: amongst them the necessity of a *seaboard* has been urged, and the *contact of ocean* insisted on as the necessary nurse of social infants, such as the proposed colonies have been termed: and predictions have not been wanting that colonies if planted in the Himalayas would soon be merged in the darkness of the semi-barbarous tribes around them, and so be lost in Cimmerian mists.

To these opinions I must demur, believing as I do that in these days railways could bring the "arts of war and peace" and civilization to their very doors if desired; and practically bring the seaboard as near to Himalaya as Ostium to Rome or the Piræus to ancient Athens.

11. It has also been urged that the culture of Indian land by Europeans *would not pay*. To this I would remark that the culture system of *Java* as introduced into that colony by the Dutch, in 1830, would seem to point to a development of the "Crown lands" of India (where they exist) well worthy of study: my treatment of this subject as a *militaire* must necessarily be crude and curt: suffice it here to say, that the revenue of *Java* was within the thirty years succeeding its introduction *quintupled*, and the happiest relations established between the European and the Native, and especially natives of rank were employed as helps to the scheme. To enter on details would, however, occupy too much space, and after all only bears indirectly on the question before us. Suffice to say, that by protecting the interests of all concerned, and cultivating with valuable products over and

¹ The Carthaginian colonies on the Mediterranean seaboard, which afforded such vast levies to Hannibal and his army during his wars against Rome, need not be cited as instances in history of military colonies aiding the mother country.

Rome had colonies on her military frontiers, both on the Rhine and Danube; in Gaul and in Dacia; also in Britain. London itself was a Roman military colony.

above the rice lands required for the food of the villagers, by contracts with capitalists, and, lastly, giving both the cultivator as well as the superintending officials, European and Native, a percentage on the outturn, the Dutch Government seems happily to have solved the problem of remunerative culture of its colonial possessions, and the European is protected from fraud and the Native from violence and force. "How different from the cultural state of India abandoned by us to the law of supply and demand, and the unprotected and uncontrolled principles of political economy! and the advanced doctrine of unrestricted enterprise. In such a race the European, following his instincts, resorts to force, and the Native, equally following nature, to fraud, and such scandals as we have heard of in 'indigo' planting, &c., have been the inevitable result. Government, in fact, shrinks both from taking the law into its own hands, and so guarding all parties, the cultivator, the village community (or landlord as the case may be), the contractor, and, lastly, itself as suzerain entitled to *fief* in labour or land, as also from encouraging the increased European supervision necessary to the development of any culture system such as that of *Java*. Yet the Dutch have introduced such with the happiest result. By supplying European energy with the deserved Government advances on private capital, the cheap labour of India could not fail to render the cultivation of cotton, sugar, flax, indigo, tea, coffee, tobacco, highly remunerative to all concerned." On this point the study of the Dutch land culture system could not fail to be instructive to all men in authority on the Indian establishment. The details are to be found in Money's "*Java, or how to manage a Colony*" (1861). I have quoted and enlarged on this particular development of the waste land of India, because I should think it might be happily imported into the working of the military colonies, or industrial circles, advocated in the present paper.

A means also of increasing the revenue of India is thus indicated: but the question now occurs, "By whom is such a system to be worked?" Not, certainly, by individual hardy soldier colonists, (except under strict martial law), whose best field resides in the struggle with the powers of nature such as are found in the rude climes of America, Canada, and the Australian colonies. The hills of India, however, present a somewhat analogous climate to the private settler with capital, and the energy and strength of the Anglo-Saxon might, perhaps, be thereby utilized in the struggle with the forest and the field: but to *direct* labour gentlemen of education and habits of discipline and good sense, such as army officers and volunteers from overstocked professions in England, are required rather than men of coarse Anglo-Saxon self-assertion, with contempt for 'niggers,' &c.

"With this reservation the Alpine fir-clad slopes of the Himalayas, and the ever verdant plateaux of Central and Southern India—vales bathed in perpetual spring," cry aloud for population.

Some further arguments in favour of colonization are suggested by a perusal of "The Report on Colonization, Commerce, Physical Geography, &c., of the Himalaya Mountains and Nepaul," by B. H.

Hodgson, Esq., M.R.A.S., B.C.S., some time Resident of Nepaul. He urges several points, as follows :

- (1.) A variety of climate in gradation of height from the plains to the snows ; with choice of elevation. A cultivator could have his dwelling at 4,000 or 6,000, and his farms either higher or lower, yet close to his abode.
- (2.) Himalayas eminently healthful.
- (3.) Rainfall at Darjeeling 130" (since less).
 " at Khatmando in Nepaul, 60".
 " at Simla, 70".

During 40 years, cholera only twice appeared in Nepaul. At Darjeeling, scarcely ever. Temperature at Darjeeling 60° to 65° from June to September, and in winter the same temperature reduced in regular ratio of 3° for every 1,000' of elevation.

Sheep farming is a feasible project ; samples of wool sent to Europe commanded 7*d.* to 9*d.* per lb.¹ He enters on further particulars too long to be quoted, ending his remarks by saying :—

"Colonization is the greatest, soundest, and simplest of all political measures for the stabilitation of the British power in India.

"With the actual backing upon occasion of political stress and difficulty of some 60,000 to 100,000 loyal hearts of Anglo-Saxon mould, our empire in British India might safely defy the world in arms against it."

12. As regards the planting of military villages, it is understood that some such scheme was formerly initiated in some of the larger British Colonies—Australia, New Zealand, &c.—and grants of land were made to retired Officers, both of British and Indian forces, but I never heard that veteran non-commissioned officers or private soldiers were in any way associated with them ; and the scheme never got beyond the crude inception, and never in the least degree foreshadowed the coherent idea of national colonies tending to the formation of a *Reserve force*. In view, however, of certain obvious contingencies, many Officers of foresight and experience have thought that India especially may ultimately have to revert in some sort to a local army, modified, perhaps, but still the nucleus of a *Reserve*, in case of war in Europe, otherwise it might well happen that India would prove a source of weakness rather than of strength to England. In such a contingency, what better resource to fall back on than a *Military Reserve* in the Himalayas and other mountain ranges ?

13. Closely associated with the question of *Military Colonies* is that of the nature of the force requisite to garrison the India of the future.

Now troops for the defence of a State may be classed as :—

- (1.) Native (British).
- (2.) Mercenaries.
- (3.) Auxiliaries.

¹ The whole of the table-land of Thibet is no doubt a grand wool field ; and its development might form one of the collateral projects of Himalayan "Industrial Circles."

(1.) As regards the first class—British troops. The general purport of this paper is how to supplement the present British mobile garrison by a *Reserve* or *Militia*, in other words a local territorial army; it finds its advocacy in the preamble.

(2.) As regards the *Mercenary* system. Under its old aspect it has broken down by the mutiny of 1857, and that great standing danger to our British Empire in the East, so apprehended by men like Malcolm and Metcalfe, has been in a great measure swept away; and in regard to its partial resuscitation by our present large Native Army, we may inquire: "*In what light must we regard our Native troops?*" Surely scarcely as "mere mercenaries!" Are not their interests yet sufficiently identified with our own to justify our calling them a "*National Army?*" I think so, and I would therefore, as, indeed, has been already suggested, associate them with ourselves in the experiment of *Industrial Reserve Circles*, which it is the object of this paper to discuss.

(3.) The third class of troops. *Auxiliaries* have scarcely yet been tried. The idea of small contingents or brigades to be furnished by certain Native Princes to co-operate with the regular forces of the State has scarcely ever been tried, though, indeed, of late a few thousand Sepoys of the Sikh Princes of the Cis-Sutlej States did take the field as a support during the late Afghan War, a happy precedent, as I think. To quote my own former words:—"I know not whether the day may have yet arrived when our great feudatories such as Cashmere, Patiala, Scindia, and others, should be entrusted with the independent maintenance of recognized *Corps d'Armées*, as portions of the grand Imperial Army of India. They exist as a fact; might it not, therefore, be well to call them out occasionally as auxiliaries for exercise with the Regular Army? By this means, possibly a portion of the British troops might be released from service as local custodians, and advantageously massed in healthy localities, such as hill districts, elsewhere. This leads me to reassert the postulate already put for consideration, viz.: The hills for European; the plains for the Asiatic soldiery! And the strategic points occupied and prepared as refuges or entrenched camps, as a rule, in the close vicinity of the industrial circles which would partly constitute their garrisons."

14. I might here dwell on our just claim to the services of our Native feudatories, whose integrity we guarantee from foreign and domestic enemies: self-preservation demands that we should in these days bring under more effective control, not only the contingents, but the entire armies of those States, and a most popular measure it would be, I think; and a force thereby raised, animated with a chivalrous rivalry, and jealous of each other to an extent just sufficient to ensure their fidelity to the British Government, the palladium of their honour and distinction. I put this for consideration, for I believe a territorial auxiliary Native army might be organized, on some such principle, and the whole welded into a grand National army of India really formidable to our foes and sufficient to guarantee the safety of India against all comers.

Contingents of the armies of our allies, *not being our feudatories*, form

a different branch of this subject, which simply points to a *Reserve* or interior defence: I hesitate to give an opinion on such matters, which are beyond the scope of this paper: I may say, however, that battles have been gained ere now with the aid of auxiliaries¹—*Plassy*, for instance—but they must be our servants, not *masters*, as history so frequently gives us instances of in the case of allies called in to aid. “It is in *himself* and his own courage alone that a prince should seek “refuge against the reverses of fortune.” So said one who knew the world of men and nations!

15. *Reserve regiments* or circles have been mentioned, and elements of one such were sketched in the former part of this lecture whereby an accession of strength to the State was estimated at 10,000 infantry, 1,000 cavalry, and 70 guns, all European troops, as a result of one scheme of the kind.

An experimental idea was also suggested in a sequel to the lecture from which I have quoted as given at Darjeeling, 30th October, 1872, for the formation of *three* small colonies to contain 100 men each, the expense of which, so far from being a burden to the State, was set down as an approximate saving in ten years of 130,000*l*.

Could I obtain the consent of my able collaborateur on that occasion (Captain F. Henderson, H.M. 107th Regiment), I could almost wish to reproduce *in extenso* his able lecture, entering as it did into the actuarial aspect of this question. To that gentleman, as also to Dr. Ambrose, who kindly supplemented my original address with sanitary statistics bearing on the same question, I was indeed most grateful: and I feel that as regards my present lecture, all was then said in a happier form than that I have now been enabled to reproduce. The three lectures—(1) on the Political and Strategic; (2) on the Sanitary; (3) on the Actuarial Aspects of Military Colonization—are to be found in No. 12 of the Journal of the United Service Institute for India, and form a trilogy (so to term it) which with the subsequent discussions on the subject (when we had the advantage of several able opinions) put forth all I could collect on this, to my idea, important question.

16. Little excuse seems needed for entering on the sanitary aspect of the case, when we observe that Dr. (Sir J. R.) Martin reported to the Court of Directors, H.E.I.C., that in the forty years embraced from 1815 to 1855, a total mortality occurred amongst the British troops of 100,000 men, “the greater portion of whose lives might have been saved “had better localities been selected for military occupation in that “country.” Now each British soldier has been calculated to represent 100*l*. The State, therefore, in that item, lost 10,000,000*l*. sterling.

Such issues, moreover, are borne out by statistics mentioned in the able lecture I have alluded to by Dr. Ambrose, H.M. 58th,—the Medical Officer of the Depot at Darjeeling,—and a most able Officer. Amongst his figures I find the death-rate of British soldiers’

¹ The Romans employed auxiliary troops, paid and often led by native kings. These troops drew *rations* and sometimes *clothing* from the Roman State.

The auxiliary State brigades suggested in the text find their prototype in these.

children in India for 1854 was 68·83 per 1,000; from 1864 to 1869 it rose to 94·41 per 1,000 in Bengal; and for the year 1869 was reserved "the unenviable notoriety of being the period in which 145·22 out of every 1,000 European soldiers' children fell victims to the climate: "speaking roundly, the children of our European soldiers, the very "large majority living in the plains, have in each year been all but "decimated."

As a *per contra* to this, the increased health and consequent lessening of the death-rate to 39·9 in the hills is given. Other statistics on this head exhibit a death-rate lessened by six-sevenths in the hills.

Dr. Bryden's report to Government on the employment of British soldiers at road-making in the Himalayas, chiefly in the Punjab Hills, during the term 1863-69, contains further proof, if proof were needed, of the salubrity of these mountains: it appeared that of the 2,500 men so employed, the death-rate was only *one half of what it is in the Army in England*. "But," asks Dr. Ambrose, "why go on multiplying "instances in proof of the wonderful salubrity of our hill climates? ". . . . The Royal Sanitary Commission to which I have alluded, "after hearing and weighing evidence given by such men as Lord "Lawrence, Sir Henry Durand, and Sir Ranald Martin, made the "following recommendation regarding the geographical distribution "of an European army in India:—

"1st. To reduce to a minimum the strategic points on the alluvial "plains; and to hold in force as few unhealthy stations as possible.

"2nd. To locate a third part of the force required to hold these "points on the nearest convenient hill stations or elevated plain ". . . and to give the other two-thirds their turn."

This recommendation has been in part carried out, but scarcely in the thorough manner stated; but instead *palatial* barracks have been erected in the plains, and the rate of mortality and invaliding amongst our British troops, notwithstanding all our sanitary reforms, is scarcely diminished. I think I could suggest one or two concurrent causes of this, but in this place such cannot be entered on, beyond saying that heat and *overfeeding*, and lassitude engendered by want of wholesome industrial work, are some of those causes.

17. Now, as regards the first steps to be taken towards the formation of an industrial reserve circle or colony, such as have been alluded to, should such be ever inaugurated.

Assuming that such colonies should be *sub vexillo* (under martial law) with a regular military commandant and staff, it remains to suggest what sort of man we should endeavour to secure for our military colonist. At the discussion of this question on the occasion to which I have referred, it was generally agreed that able-bodied men between 20 and 40, if possible married men, would be at the expiration of their first term of service the most suitable: Artisans, husbandmen, and stockmen, each man possessing some craft highly desirable, if not imperatively necessary.¹ Non-commissioned officers and men of

¹ Of 100 men, 60 to be labourers, 40 mechanics; and it was further suggested

good character to have the option of volunteering, and this volunteering should be accompanied by an offer of a free grant of land, varying in extent from 3 to 25 acres according to locality and the special industrial avocations of the projected colony, and I fear it must be supplemented by a grant in aid of money. I see 1,000 rupees (say 100*l.*) was fixed upon as the least sum to start the colonist on his legs. The details of the start would be too voluminous to be entered on in this lecture. The internal organization, interior economy, and the Government legislation and supervision would alone absorb more space than can be allotted in this paper, which is necessarily of an *introductory* character.

The undertaking would necessarily be at first of an experimental nature, and would doubtless require much patient thinking out and elaboration to reduce it within anything like practical limits: the following tabulated average, however, as drawn up by Captain Henderson, may be given as a rough estimate of the undertaking suggested:—

ROUGH ESTIMATE OF THE COST OF 300 SOLDIERS FOR A PERIOD OF 10 YEARS.

	R.	£
Approximate cost of 1 soldier, per annum	1,000	100
" " 300 " " "	300,000	30,000
Approximate cost of 300 soldiers for a period of 10 years	3,000,000	300,000

ROUGH ESTIMATE OF THE COST OF 300 COLONISTS FOR A PERIOD OF 10 YEARS.

	R.	£
Cost of conveying 300 men to the hills, at Rs. 50 per head	15,000	1,500
Grant in aid of Rs. 1,000 to 300 men ..	300,000	30,000
Staff allowance for 3 Colonies at Rs. 1,000 per mensem each for 10 years	360,000	36,000
Contingent allowances for 3 Colonies, at Rs. 1,000 each per mensem for 10 years	360,000	36,000
Compassionate fund for 3 Colonies, at Rs. 1,000 each per mensem for 10 years	360,000	36,000
Arias, ammunition, accoutrements, clothing, &c., for 300 men for 10 years ..	150,000	15,000
Building Government offices and staff residences at 3 stations	150,000	15,000
Total ..	1,695,000	169,500

According to which estimate a saving of 1,305,000 rupees (130,000*l.*)

that the permission to marry to young soldiers on the completion of their first term of service might form a very strong inducement to volunteer as a military colonist.

in ten years would accrue on the profit side, leaving a respectable margin for unforeseen expenditure.

Captain Henderson concludes his instructive lecture by quoting the words of Sir Henry Lawrence, who has already been alluded to in the preamble of this paper, as an advocate of military colonization, and for my part I cannot but consider that it must commend itself to all well-wishers of the European soldier and his family. It is interesting also to observe how nearly Sir H. Lawrence, forbearing to go into details, hits off as it were by intuition about what the actuarial calculation corroborates.

It would be quite impossible in this *introductory* lecture to enter upon further details. The remaining space allowed must now be devoted to a cursory sketch of some localities adapted for the placing of such colonies as have been suggested.

18. The sentimental aspect of military colonies as affording pleasant homes for Englishmen in the East, and its moral advantages to the soldier, need not here be mentioned. Such, perhaps Utopian, ideas were introduced into my lecture on this subject in India; and (if I mistake not) were sneered at as visionary. Utilitarians as we English sometimes are inclined to be, we are, perhaps, too apt to regard our soldiers simply from a financial point of view, and to think of them as mere machines for war—food for powder in short—but after all they are *men*, and their value moral as well as material. It is believed that the philosophic soldiers of Germany owe much of their success to the full recognition of the Napoleonic maxim, that the “moral is to the material as 3 to 1;” and no doubt the probable improvement both in the physical and moral health of the soldier from military colonization scarcely admits of question. Setting aside humane views, is it not our *interest* to fortify the soul and spirit of the soldier, amidst the grand aspects of nature and the breezes of a temperate zone? I may, perhaps, be pardoned if I here quote my own former words, which I see annotated as “*Arcadia rediviva, the sentimental aspect of military colonies.*”

“Gazing on the charming landscape, perchance in fair Cashmere, or “green Kangra, on the grassy slopes and downs of the Neilgherries, “or even at this tea-growing ‘bright spot’ Darjeeling, the idea has “sometimes occurred to me that haply in this fair land may arise the “homes of a happy Anglo-Saxon population; perchance in times to “come of cheerful English homesteads amidst the orchards and sheep- “walks of the north; or the tea and coffee gardens of the south in “which the Indian veteran might cultivate his plot of land, and rear “a healthy family, his robust sons growing up the future defenders “of the State. . . . Then, should the clouds of war arise and “danger to the State, I have pictured a robust and valiant citizen army. “—*The Reserve Force of India*—ready to descend full of health and “confidence on the foe! These ideas are perhaps Utopian, but after all, “why should *sojourn* such future for the mountains of Hindostan “not be?”

I must not forget, however, that I am addressing a calm-judging audience on a practical question. I must refrain from such senti-

mental themes ; I need not to indulge in rhetorical platitudes but proceed to the strategic aspects of the question.

19. The occupation of a ridge of mountains forming the water-parting, whence issue the rivers which fertilize the adjacent lowlands, must at once strike the eye of the military critic as the true line of domination of the plain country embraced within those rivers.

There is one Hill country (were it ours) above all others, calculated both from its topographical features, as well as its geographical position, to afford flanking strategic value for "Military Colonies" such as I would advocate, viz., Cashmere.

This position I have sought to establish in a former paper entitled "The Strategic Value of Cashmere," in connection with the defence of our N. W. Frontier, and I suggested that the flanking value of that country as commanding the five Doäbs embraced within the five Punjab rivers was inestimable, and should form a prominent feature in any Imperial scheme of defence for the Punjab and N.W. Frontiers of India. If that position be conceded, it follows as a corollary, though perhaps with less emphasis than in the more marked case of the Punjab, that the mountains flanking the entire Gangetic valley, viz., the Himalayan watershed, whence issue the rivers that flow into it, must, in like manner, be the true crown of domination of the deltas embraced by those affluents, and therefore probably the true points for occupation by a dominant race, so numerically inferior *in partibus infidelium*.

Instance, that troops massed in Hill Stations between the River Sutlej and Jumna (*i.e.*, Simla and its circle) are free to march and deploy on the whole Cis-Sutlej States and N. W. Provinces, without the obstacle of an intervening river, as was instanced during the mutiny of 1857, when the troops there in garrison marched to the siege of Delhi.

Again, troops in the ranges of *Garhwāl* and *Kumāon* should command the Doäb, through the Dehra Dun, as far even as Allahabad.

The group of Hill Stations represented by *Almora*, *Nainee Tal*, and *Raniket* should command Rohilkund, Oude, &c., as far as the Ganges:

Troops at Darjeeling should command S. E. Tirhoot and Bengal as far as the River Brahmapootra, and so on. The principle admits of modification owing to local causes, but in its general aspect may, I think, be regarded as valid.

Here, then, are some of the localities on which reserve circles should be placed ; but no doubt there are many points in other parts of India equally available ; such as the Neilgherry plateau with the Annamallay and Palney mountains in the south. The Sahyodria, or Western Ghauts, in the west, and perhaps a few isolated blocks or summits throughout India, such as Mount Aboo, the Omerkantuk plateau, would do for smaller refuges throughout the land ; once let the principle of *Reserve Circles* be conceded, and many suitable localities will be found. The Khassia hills might be named ; Pachmari and a few elevated regions in Central India, in the vicinity of Seoni and Rajmehar ; and, should we retain our lately acquired territory across the Indus, perhaps

sites for *native* reserve circles or Colonies may be found in the Highlands of *India Alba*.

20. I have here the MSS. of a work which I have called "The "Highlands of India," wherein I have attempted to describe somewhat in detail these and other localities which seem suitable for military occupation, most of which points during my lengthened service in the East I have had opportunities of visiting personally.

The index on the face of the map (now before the audience) comprises the majority of these highlands, and I have assumed 4,000 feet in elevation as the demarcation of the temperate zone, above which malaria, that dire foe of Europeans in India, ceases to be formidable, though still sometimes active even between 5,000 and 6,000 feet.

The work in question will embrace perhaps 250 pages or more, and is, of course, too voluminous to be entered on except in this cursory manner here; but should time allow, I may perhaps have the honour of reading a few extracts bearing on some of the localities I have named, and so on the general subject of this lecture.

I will now ask my audience to look at the map of India before them.

I point to *Cashmere* and the *Kohistán* of the *Punjaub*, which subtends the arm of the Himalayas called the *Pir Pinjal*, behind which lies the valley of *Cashmere*.

Were *Cashmere* ours, I would at once say: "Here is your main "defensive *Refuge* and *flanking* strategic circle for the whole "frontier of Northern India—the very bastion and fortalice of the "land,"—and my reason for this opinion is that the country of *Cashmere* flanks the entire path over which any invader from *Afghánistán* could pass; as also covers the side doors towards which a certain rival Power is always creeping; on this head I cannot, I believe, do better than refer to the lecture I have alluded to on the "Strategic Value of *Cashmere*" (No. 10, "Journal of the United "Service Institute for India"), from which I find I have quoted in the work on the "Highlands of India," now before me.

It has ever been my wish to associate my military diagnosis of this question—the *Defence of India*—with the military occupation of *Cashmere* as within the scope of a grand Imperial system of defence for British India; and I hold it should be *subsidised*, as it seems our treaty obligations bind us too tightly to free our hands in this matter. Doubtless our ally, H. H. The Maharajah of *Cashmere*, the son of an astute and (for an Asiatic Prince) a steadfast and reliable friend to the British Government, which set him on his throne, has hereditary claims on us—and sufficient *savoir vivre* to support our views in all ways. His interests and ours, indeed, are (or *should be*) identical. I will not dilate on this theme, which is, moreover, fully treated of in the paper quoted.

Failing this there are sub-Alpine spurs and ranges in the *Kohistán*, subtending the Highlands of *Cashmere*, where localities may be found for stations—fit for colonies—as guards to the Indus and N.W. Doäbs of the *Punjaub*, such as *Murrie*, and *Abbottabad*, &c.

Passing S.E. along the Himalayan subsidiary watershed, we find

the station of Dalhousie, dominating the Bári Doāb, and (though less effectively) the Rechna and Jullindar Doābs. I should consider this an excellent locality for one of the Reserve Circles, Colonies, or Regiments we have been considering. I should incline to prefer it to Kangra, named by the reviewer already mentioned. At Kangra, I think a Volunteer Corps should have its head-quarters and consist of mounted infantry, *εἰμακαί*, or dragoons, as the old mounted foot-soldiers were called, *mounted rifles* of the present day. This lovely district is, as is well known, one of the chief centres of the tea-planting interest, and already a considerable European population reside there.

Going south, down the Himalayan watershed, we arrive at Simla—that imperial mountain already mentioned—where I have in my work placed what I designate the *Keyonthál* Refuge, from the name of one of the small Hill States comprising its precincts.

Chákráta, a station in the fluvial basin of the Jumna.

Mussoorie with Landaur, dominating the Dehra Dun, which some authorities have at times sought to recommend as a capital for Hindostán, and a future seat of government. No doubt this sub-Alpine region dominates the Doāb and Oude as far even as Allahabad, and in that sense might be called the capital of *Hindostán* (which is a term only properly applied to that region of India alone). Sir George Campbell, in his work, "India as it may be," has, indeed, insisted on the peculiar eligibility of Mussoorie with Dehra Dun in this point of view, and without going quite so far as that able author, it may be safely conceded that there is much force in the suggestion.

The Kumāon Hills,—Almora, Raniket, Nainee Tal,—have been mentioned as dominating Rohilkund and N. Tirhoot. They are fully described in my work. But I must pass on southwards.

Here we find a fine hill country, "Nepaul," one of the best, indeed, in the whole range, unfortunately rendered unavailable to us from the fact of being out of our territory and independent; were it otherwise, probably the Valley of Khatmandoo would afford a fine site for settlement. It is also fully described in the work.

We now pass on to Darjeeling, and the region of British Sikkim, where no doubt splendid sites may be found for industrial development or colonies such as I have advocated. With this district, having been in command two years, I am well acquainted, and can affirm that no better locality can be found throughout India for one of the small experimental colonies, the elements of which I have sketched.

Passing across the Brahmapootra, we find the *Khassia* Hills, fully described in this work, chiefly from the works of Hooker and others. This is almost the only hill district in India not personally visited by me.

In the south of India, that noble plateau the Neilgherries seems in every way suitable for a large reserve circle or colony, and having had ample opportunities of observing it, I have entered rather minutely on its resources.

I would associate the Annamally and Palnay Hills with this group.

Other blocks of mountain such as the Shervaroys and some small ranges rising above 4,000 feet, near the mouth of the Godavery, together with Coorg, Canara, the Wynaad, and the Mysore table-land, are treated of, but can only be just mentioned here.

Crossing the Toomboodra into the Dekhan we find ourselves in Mâhârâstrâ, the land of Sivaji, the Mahratta, the "Mountain Rat," as his proclivity for hill forts caused him to be called by his enemies the Moghuls. The Syhoodria Mountains or Western Ghauts are found to be the great buttress or mountain littoral of Western India, and contain a few sites for *sanitary* circles such as Mâhâbulêshwar, Mahteran, and the sites for camps echelloned along the summits of the Ghauts from Khandâla to Deolâlie. There are several summits, also, such as Mander Deo, Amber-Khind, Singhur, and others, rising to eminences above the zone of malaria, and presenting favourable *pieds de terre* for convalescent depôts and sanitarium; but most of the positions are cut off by torrent and flood in the excessive rainfall of the monsoon, and are of too restricted an area to enter into our consideration as sites for colonies, or even very large military circles.

I have entered very fully, however, on the *Hill Forts of the Dekhan* in my work, some of which are fine impregnable sites for refuges for a dominant race, numerically weak amidst rebellious populations.

Thence I have passed on into Central India, and from the plateau of Omer Kantak as centre, being the watershed or waterparting of the land (7,000), whence issue the great rivers Sône and Mahamuddy, which find their exit into the Bay of Bengal (the former through the Gangetic Valley), as also of the Nerbudda and Tapti, which, flowing westward, fall into the Indian Ocean north of Bombay, I have thence traced the courses of the various ranges such as the Vindhya, Keymore, Rajmahal, Mahadeo, and Pachmâri, &c., which ramify north-east, south, and west, and buttress in the table-land of Central India, forming steep escarpments in the courses of the rivers named. They afford but few sites for colonization of Europeans.

Thence I pass across the Nerbudda into *Upermal*, the *Highlands* of Malwah or Rajpootâna, till arriving at the *Aravelli* Mountains (the "*strong refuge*") I find the station of *Mt. Aboo* capable of holding a small reserve colony, valuable for its *strategic* position.

Various *pieds de terre* forming temporary refuges from the heat of the plains subtending them are sketched: such as a few of the *Droogs* of Southern India, *Mt. Parasnauth*, in Raj Mahal; the Mâgâsani and Mylagiri hills near Balasore, in Cuttack; and a few rock fortresses and elevated plateaux are cursorily alluded to, but they do not enter into our consideration as fit localities for *Colonies*.

I had ended my sketch of the *Highlands* of India with section 15—*Mt. Aboo* and the *Aravelli* spurs,—when the Afghân question arising, I made bold to add section 16, on the *Highlands* of *India Alba*, including the Kurrum basin (of which I have some personal knowledge). The Suleiman Ranges, on which are found the small sanitariums of Sheikh Boodeen; Fort Munro; and Dunna Towers (South), as also Peshin and the basin of the Lora, which, with the *highlands* dominating them, I have termed *India Alba*, the ancient

Arachosia of geographers. In this I have been much indebted to the valuable papers of Sir M. Biddulph, who lectured in this theatre, of Sir R. Temple, who lectured at the Royal Geographical Society, of Mr. Clements Markham, C.B., the able Secretary R.G.S., whose valuable papers on Afghanistan are almost text books on the subject: and of Captain Holdich, also a lecturer in this Institution, a most able military surveyor, whose paper has also appeared in the Journal of the Institution.

We are now retreating from our objective, Kandahar, and the subject *Highlands of India Alba*, may, perhaps, possess but diminished interest: nevertheless, if we uphold the provisions of the Treaty of Gundamuk, much highland territory will fall within our frontier, and will have to be taken into consideration.

In former papers I have long been inclined to advocate frontier military villages, as a buffer or zone of defence against savage neighbours who, in their raids, would necessarily first fall foul of our warlike villagers and receive at their hands a "Borderer's Welcome!" And here I think I see an opening at various commanding points, to plant colonies of our loyal native subjects, who, in fact, form part of the scheme for the formation of a *reserve force for India* which it has been my object to suggest: but which from various causes I fear I have but feebly put before you, trusting more to the discussion which I hope may ensue, and elicit valuable opinions, rather than to my own crude and imperfect paper on the subject, which,—deprecating any dogmatic assertion of personal opinion—I offer simply as introductory and tentative.

The CHAIRMAN: I hope that some gentlemen present who have a knowledge of British India will supplement General Newall's Lecture, by giving us any information that they are able to afford us on this subject.

General Sir ORFEUR CAVENAGH, K.C.S.I.: I cannot but take great interest in the subject of the paper which has been read by our able lecturer, and if in any remarks I make upon it I may seem to throw some doubt upon the practicability of carrying out on a large scale the scheme which he has suggested, I hope that he will not think I am doing so in any cavilling spirit. On the contrary, my object is to elicit information from those who may be able to afford it better than myself in order that the question may be thoroughly thrashed out. There can be no doubt that the formation of military colonies would add materially to our political and military strength in India, but it seems to me that the great question to be considered is the employment of the colonists. I believe we should all agree upon one point, that you could not employ Europeans in the plains of India,—that they must be located in a temperate climate. With regard to the hills, I speak with very great hesitation, because although I have been through Nepal, and have been thirty years in India, I have never visited a hill-station, and therefore as to the capabilities of the several hill-stations, and the nature of the work that might be available for Europeans there, I am speaking without personal knowledge; but as far as I have been able to gather, all the opportunities that would be afforded for giving occupation to Europeans at these stations would be confined to the employment of a few artisans, such as tailors, shoemakers, and carpenters, and of a few persons who might be employed as overseers in the great tea and cinchona plantations. There would be in this way means for employing a certain number at every station, but how far that would be sufficient to enable you to maintain one or two regiments at any one locality may be a matter of some doubt. It seems to me that it would be difficult to give them out-door employment. The soil is generally so sterile that there would be no agricultural occupation; moreover, in all probability if you attempted to

employ European labour for agricultural purposes you would be undersold by native labour, which is so much cheaper that no person would employ Europeans when he could hire natives. I believe if it were possible for military colonies to be formed on a large scale, it might be done on one range to which General Newall has alluded, that is the Neilgherries. It might perhaps be feasible to establish there large cattle farms, both for sheep and oxen as well as horses, which could be managed by Europeans. It is an undulating country, and may in places be covered with fine grasses, and which might afford suitable localities for the establishment of military colonies. I am doubtful, however, whether similar facilities exist as regards the hill-stations along the Himalayas, except in a small degree—say for 100 or 200, at each station. I speak, however, with great diffidence, because I have never visited these stations myself, and I only judge the character of the mountain ranges from my visit to Nepaul. Nepaul might certainly be colonized, but that is a perfectly independent country. You have there a fine valley with a climate in which Europeans could work almost as well as they do in this country: but our own stations are bare ridges, where it would be almost impossible to find them occupation. At the same time I hold that the matter is of great importance, and it is quite possible that in some of the plateaux towards Central India—plateaux regarding which we have very little knowledge at the present moment—some small military colonies might be established as a commencement, and I therefore hope that the question will be taken into consideration by those whose duty it is to preside over the destinies of our great Empire in the East.

MR. EDWIN CHADWICK, C.B.: I beg to remark on the alleged impossibility of the English soldier working in India. Very recently an Officer of Engineers told me that he had had his men out doing road work, in a blazing sun, and that they had done it well, and were in better condition than the men kept shut up in the barracks (where they had sunstrokes) doing nothing. The old India Company entertained the objection that the English could not live and work and have succession in India. The fact is, that they did not like them to settle there, where they would be inconvenient, and troublesome to their rule as unsystematized settlements may be. It has been alleged, however, that English children cannot be reared in India. In Calcutta we have the example of an orphan asylum for the children of English parents where the death-rate has been not more than seven in a thousand, that is to say, of about one-half the general death-rate of children of the same ages here in London. Now if those same orphan children, in Calcutta, were afterwards taken into the marshy plains where life amongst the natives is, indeed, short, their lives would be brief, and there would be little chance of succession; but if they were taken to hill-districts or plains in good sanitary condition, succession might be fairly relied upon. I had the honour to preside at a meeting at the Society of Arts, where we had a very able paper read by General McMurdo, urging the expediency of colonization in India, and the same general views that are set forth in General Newall's paper, but on wide and distinct observation. At that same meeting we had the representative of a fourth generation of English India planters, and there are others in various parts of India presenting examples of good succession. It was long put forth as an absolute dogma, that no English or whites, but only blacks, could live and work in the West Indies. In the course of my enquiries as a sanitary commissioner, I had an instance presented of a colony of German religionists, who had cleared and adapted the greater part of a parish, and were then living and working there, to a third generation, and are probably living there now. But there is evidence of longer white succession in India. Philologists and ethnologists show that the Afghans are actually our relations. In the course of his service General McMurdo occupied the district reached by Alexander the Great; and there he found, with Greek remains, people of a clearly Greek type, who had no doubt been left there. Instances are stated of small unsystematized attempts to get soldiers to settle that have failed; probably so; but of what soldiers and under what conditions? The axiom of Bonaparte, for war, that whilst physique is as one, morale is as two, must be kept in view in colonization, especially for India. I should not seek colonists from such a force as the home force, where there are six thousand desertions a year, from men who here cannot be trusted near drink, nor out of sight, nor out of a severely strained control; but they should be

sought from men of at least the morale of the Metropolitan Police Force; from men trusted and accustomed to individual action, or from the best non-commissioned officers; from select steady men, good shots, from such men as were to be found in the old Scotch regiments, the sons of farmers. Such men ought to be allowed to take such civil work as they could find for themselves in the first instance, and to be left to it, or to the formation of systematized settlements, in well selected sanitary sites, to be well kept under sanitary rule, with the condition of periodical musters and of joining colours under serious conditions. A well located and productive force will be in the main a self-supporting, and the cheapest and best of forces. Indeed, if we cannot settle in India we cannot be expected to hold India. It cannot be expected to be held under such insanitary administrations, and such insanitary commands, as those which incur far more loss of life from disease than from the sword. It may and must be held, if at all, by the application of the preventive science which saved an army and sent it home in better health than it had been in before, and that by its as yet partial applications has reduced by two-thirds the previous mortality of the army in India. Insanitary conditions will, in which men die in India, lose our dominion, but good sanitary conditions, in which men will live and settle, may extend and maintain it.

I would offer an explanation that, whilst there are malarial hot and dry conditions in the plains, there are cold and damp malarial conditions in the uplands of India. There, hill stations, that are passably good, selected as sanatoria, have from defective sanitary administration been made bad by the accumulations of filth or decaying vegetation about them or beneath them. It may be confidently averred that no failure of hill stations have occurred, without adequate, avoidable or removable causes. If enquiry be made at the department of the Indian Sanitary Commission, from Dr. Sutherland, I have no doubt of the cases of failure examined, a sufficient explanation may be obtained. I might have cited examples of what has been done by General Lord Mark Ker in the preservation of force by observation; and of sanitary knowledge in the preservation of force, by dealing with the conditions of sites.

Surgeon-General Dr. C. A. GORDON: Having recently come from India, I may be permitted to make a few remarks in regard to colonization in that country. We have an example of such colonization in the Portuguese. The Portuguese rule in India began and ended in the same century, and a writer on the subject attributes much of their downfall to the fact of their intermixture with the natives, and colonizing the country. From my own personal knowledge with reference to some places that have been mentioned, I know that in actual practice the results have not been satisfactory. During the time I was in Calcutta, when I had the honour of being a member of the Bengal Sanitary Commission, Parasnath Hill was utilized as a sanitarium, and with the result that the mortality amongst those sent up, calculated for the year, amounted to 99 per cent. I question very much whether colonization could be carried on on such terms. With regard to Raman Droog, near Bellary. I myself have had a good deal to do with that sanitarium for troops, Wellington being at so great a distance, that during the hot weather, when the soldiers required change, the railway journey was so long and fatiguing as to render their transit dangerous. But, in fact, during the rainy season and the latter part of the autumn, it proved so exceedingly unhealthy, that we had to withdraw the troops, and it is now, I believe, on my own recommendation, only utilized four months in the year, namely, in the cold and dry seasons. It has been found with regard to Droogs in India, and, in fact, with regard to precipitous hills arising suddenly from the plains elsewhere, that even at a height of 4,000, 5,000, or 6,000 feet, malarial diseases are more prevalent and fatal than in the plains. This is attributed to the fact that the malaria suddenly rises, and is wafted up through the ghauts, acquiring greater intensity than it has in the plains. With reference to the healthiness of hill stations, it has been pretty well proved by statistics and actual experience that soldiers who have suffered from organic disease in the hills, so far from recovering their health, deteriorate and die in greater proportion than they do in the plains. Young men sent up to the hills on their first arrival in India, no doubt do exceedingly well: but the fact has also transpired that those men, on being sent down to the plains to join their regiment, have to undergo a more

or less violent "seasoning," as it is called, with fever and other endemic diseases. We have two instances of the pernicious effects upon health exercised by residence on hill stations when necessity demands a sudden descent of the troops to the plains. One instance occurred at the time of the Mutiny, when what is now the 101st Regiment, the Bengal Fusiliers, was suddenly sent down from Kussowlie, and their sufferings from cholera were intense. A more recent instance occurs to my recollection with reference to the 58th. As the Officer who delivered this excellent lecture perfectly well remembers, Sinchal was occupied by a wing of the 58th, and it descended to Allahabad, where the corresponding wing immediately afterwards arrived from Benares. Cholera occurred at the station of Allahabad, but with reference to the 58th, it was almost entirely confined to the wing that had come from Sinchal. Of course the lesson to be learned from what I have mentioned is this: that residence in the hills renders the men who suddenly descend from the hills to the plains specially liable to any disease that may be epidemic at the time, more especially to cholera; and I believe it is a fact that many Officers and others who go to the hills periodically, as many do in India, run greater risk of becoming ill on descending to the plains than those do who continue in the plains. Then there is another point; many of those who have resided a considerable time in the plains, and are suddenly moved up to the hills, immediately become ill. There is another matter in which I believe statistics lead to erroneous conclusions, that is, with reference to the sanitary influence of the hill stations upon the troops. When the 42nd was sent there from Peshawur some time ago, suffering from cholera, no doubt they became healthy in the long run, but it was at the expense of the life of almost every man whose health had been impaired in the plains. In the 75th, also, a similar circumstance occurred. I had this from the late General Herbert, who commanded the 75th, and the honour of whose acquaintance I had. With regard to children, I can speak very distinctly on this subject, having had it brought before me when I was Principal Medical Officer in Madras. A number of children accompanying their fathers and mothers to the Neilgherries year after year died, and died in such great proportion, that the attention of the authorities was drawn to the subject. We naturally assumed that the cause of this was to be found at the headquarters of the regiment in not providing sufficient warm clothing to compensate for the sudden change of climate. Measures were taken to remedy this defect, warm clothing was provided, but the mortality still continued, and continued to a greater extent than it did amongst the children in the plains. Of course there are many other considerations connected with this interesting subject that I should be glad to allude to, and which I think demand a great deal of discussion, but these are points within my own knowledge, and I thought I might take the liberty of drawing attention to them.

MR. CHADWICK: I can only repeat my expression of confidence, that on examination adequate causes would be found at the outside, or in adjacent conditions, although inside the barracks all might be unexceptionally fair and good. I might have mentioned as respects the excessive mortality of children, held forth as inevitable, that whilst the mortality of adults was only 20 per 1,000, that of the children was upwards of 100 per 1,000; it appeared on examination, that whilst the sanitary condition of the men had been duly attended to, the children and the mothers had been so grossly neglected as fully to account for the difference.

A MEMBER: The existence and results of the Lawrence Asylum is a proof of what you have stated in regard to the effects of sanitary arrangements.

MR. CHADWICK: In respect to them generally, and to the due preservation of force, and the means of settlement, it is to be borne in mind, that for years a death-rate exceeding 60 per 1,000 was held forth confidently as the inevitable normal condition of our army; but that lately, and by the yet incomplete application of sanitary science, the army death-rates have been reduced to less than 20 per 1,000, and there is yet larger promise for civil settlement.

THE CHAIRMAN: I think we are wandering from the subject of the lecture, and entering upon a general discussion of sanitary questions connected with human life. I think we must now come back to General Newall's lecture.

Captain J. C. R. COLOMB: As I see no one else rising, rather than allow the discussion to terminate in observations as to matters of sanitary detail, I should wish to

make one or two very general remarks upon the Imperial importance of the question that the lecturer has raised. No doubt there must be a wide divergence of opinion in matters connected with sanitary science in all the great variety and complex mass of questions which a paper such as this involves. The desirability of increasing our military or our naval strength in outlying parts of our Empire is becoming a graver question every day. The safety of our sea communications with the outlying parts of the Empire cannot now be strictly calculated upon as absolutely secure, and that being so, as a matter of defensive policy, it is necessary, it appears to me, that the nation should wake up and look with more favourable eyes than hitherto it has done to the necessity of taking measures to decentralize, to a certain extent, its military strength by developing, in other parts of the Empire, reserve war power. That is a question of increasing importance. I do not wish to detain the meeting with such general remarks, but I think there is one passage in the lecturer's excellent paper that is very appropriate. "On the other hand, the Greek colonies (as also, indeed, the North American colonies of England, afterwards the United States of America), are standing examples of what colonies should *not* be, namely, settlements of disaffected citizens who afterwards became bitterly hostile, and even subversive to the parent State." That is unquestionably true; but I would remind the meeting that when you speak outside about military colonization, or anything of that sort, it is simply pooh-poohed. I would take this opportunity of reminding those present that within our own memory we have had the problem of military colonization dealt with at the expense of English taxpayers, for the purpose of planting military settlers in our colonies; but those settlers were foreigners. I allude to the settlement of the German Legion at the Cape. There are many persons who are of opinion that that was not a wise thing. I remember this fact, and I always make use of it when I am told that the idea of developing our military war power beyond our resources in other parts of the Empire is unpractical nonsense. It is an important thing to remember. I happened to be in Portsmouth at the time, and I remember that we had to disarm very many of the German Legion. I mounted guard over them myself many times. The question was, what was to be done with the Officers and men. When we had that question to deal with, we did not think military colonization nonsense. It is useful to remember that there was other precedent for military colonization established. I think when the full importance of the broad question of developing our naval or military strength in other parts of our Empire is brought forward in the form of a proposed system of naval or military colonization it is useful to remember we have a practical example that it has actually been done in our own times, not, unfortunately, for the benefit of British soldiers and seamen who have done their duty, but for the benefit of foreigners, many of whom had to be disarmed.

General NEWALL, in reply, said: It is now my duty to offer a few remarks in reply to the objections that have been raised,—first by Sir Orfeur Cavenagh, who tells us that he thinks there would hardly be spaces on which colonies could be planted; that the regions would be restricted, and the agricultural area small. I did not read the details of the table appended to the paper with reference to the waste lands of India. Some of them are clear, and others are ready for the axe; still there are vast areas for industrial avocations, not only agricultural, but pastoral and industrial. The same objection was raised to the suggestion at the meeting to which I have alluded as having been held at Darjeeling; General Maxwell raised some objections, and my own words in reply were: "The circles suggested might be composed of various artisans, besides shepherds, husbandmen, &c., whose crafts would supplement each other; and many sources of industrial labour would arise; even native labour might be availed of to supplement that of the skilled European artisan or agriculturist. Hitherto speculators had been content to scratch the earth and put in a little tea or potato seed here and there; but the resources of the Himalayas especially are enormous, and insufficiently developed. Metals, timber, a splendid flora containing valuable products; and water-power to any extent for sawmills," &c. The rearing of live-stock would form a considerable feature. Large profits are made by floating timber down the mountain rivers. There is water-power to any extent, and there are many other sources of industry. That was my remark also at the second lecture, which was delivered by

Captain Henderson on the actuarial aspect of the question. I instanced sites in the Darjeeling district which it had been my duty to inspect partly in a military capacity, and of course I had my eyes about me. There are magnificent plateaux there where cinchona, tea, and various other products are raised. Sheep farming is carried on, and wool has been sold for 8d. and 9d. per pound. Within my own knowledge, there is stock raised in the hills almost sufficient to supply the Commissariat. There is a splendid breed of hogs there that feed upon the acorns in the forest. Sheep are becoming very scarce in India—so scarce that the British troops are fed only one day in seven upon mutton. They have beef six days in the week, and I contend that that fact alone is sufficient to account for a great deal of the invaliding and death amongst the troops. Many gentlemen with whom I have consulted have said: "We cannot bear such strong meat as beef in a tropical climate like India, and the fact that men are obliged to have it six times in the week is some-thing dreadful to think of." I have here a sketch of a little industrial farm that I had hoped might be countenanced had I continued at Darjeeling. Some experimental farms were established by the Commissariat at the instigation of Lord Strathnairn, but they would not pay, owing to circumstances which would be too long to enter upon. I put a series of questions as to why they proved a failure. We are in a dilemma in consequence of having a population of Europeans daily increasing, and interlopers in India, waifs and strays of society; were it not so, any other colony but that of India would be preferable for the location of British settlers. But we have to face different circumstances; we have to look at the political desirability of strengthening the hands of Government by a reserve; we have a dilemma to deal with on the spot, and we must avail ourselves of the floating population, which ought to be worked up into a "reserve." Sir Orfeur Cavenagh well observed that I did not defend a very large reserve. I was contented in the first instance with seconding the opinions of a reviewer in the *Calcutta Review*, who stated that 10,000 or, say, 13,000 all told, would be the number produced by his scheme. My own suggestion was that an experiment should be tried with 300 men, to see how it would answer. As far as I can see, they would maintain themselves as industrial producers, but they would have a small retaining fee, so to speak, to eke out their income. I think it is a *sine quâ non* that they should be married men. The wife would be literally the help-meet to these colonists. I think the difficulties will be overcome when we look at the unopened areas of country disclosed by Parliamentary reports amounting to millions of acres. Mr. Chadwick referred to the fact that the *morale* or the character of the British soldier was not favourable to settlement in the colonies. Now I have had some little experience as an Officer in India. We certainly received, in the first stage of our development, some very bad material to work up into good soldiers—the scourgings of Whitechapel and Westminster, in fact, men of the worst kind of morality that could possibly be, full of pot-house politics and sentiments radical in the extreme, distrusting their Officers and every one connected with them. During the time they were under my observation as soldiers, after they had met with fair and just treatment, and a patient hearing of their supposed wrongs, these reprobates developed into useful members of society. My own ideas are that every civilian would derive incalculable advantage by passing through the ranks of the army, by cultivation of habits of discipline, subordination to authority, respect for superiors, with religious sentiment as far as it can be induced, and the education which most of them receive in Army schools. I do not think there is anything in the natural character of Englishmen opposed to their being fit and proper colonists. I recommend especially that volunteering should be open to men of good character, and chiefly to married men. Surgeon-General Gordon brought forward instances of some isolated localities having been found unfit as sanitary *pieds de terre*. I did not claim anything for such spots, except as temporary refuges from the heat of the plains. They are sometimes twelve or thirteen degrees cooler than the plains at their feet. No doubt in

¹ I mention these facts because I think it probable that the suggested colonies (or circles) might supply the Commissariat with many desirable articles of food and material.

certain seasons malaria does ascend beyond the zone of 4,000 feet which I have drawn as a general line. With regard to Mount Párasnâth, which was abandoned because it was found injurious to the soldiers. A small colony of 30 or 40 was, I believe, kept there all the year round, during a season notoriously unhealthy, when this malaria does arise. As to some of the other places instanced, I only claim for them value as refuges against the heat of the plains, as summer residences during the sultry weather, nothing more. I do not include them in the areas for colonization such as I have suggested. With regard to the 58th Regiment at Sinchâl, I am rather surprised at the objection taken by Dr. Gordon, because the statistics that have been brought before us by Dr. Ambrose, Assistant-Surgeon of that very regiment, pointed to an exactly different conclusion. He points out that during the time when the right wing was at Sinchâl, a lofty hill-station over 8,000 feet elevation (too lofty probably, because diseases of a bronchial character occur there)—there were hardly any cases whatever of epidemic fever, and only 5 men died in three years out of an average strength of 435; he further says that in the left wing, which remained at Benares, seven times as many men died during the same period (1866-67-68), and Dr. Ambrose adds that there was nothing whatever but the difference of climate between the two stations to account for this amazing contrast. With regard to the mortality of children, it is a painful fact that, notwithstanding all our sanitation, the mortality of children in the plains of India remains the same; and it must be confessed that it is not appreciably affected by their removal to the hill climate, as one might suppose. That, however, is attributed by Dr. Ambrose and others whom I have consulted, and it agrees with my own observation, to deficient nourishment. The soldiers cannot afford to feed their children with the generous, liberal diet so essential to Europeans in India, and they perish from want of the proper necessaries of life. I believe that is the conclusion to which Dr. Ambrose arrived. Captain Colomb has been kind enough to support the idea of colonization from an Imperial point of view, and his political reasoning commends itself to me. I am thankful to him for any support upon a question which doubtless presents great difficulties and requires to be thought out very carefully. At any time there might be a run upon the British garrisons, and it might be necessary to withdraw them. No doubt we have a fine native army to fall back upon, but we have had warnings, and we know there are subtle enemies at work. We know what happened in the case of a previous attempt to dispossess us of the soil of India. Intrigues of every kind shake the loyalty of our native population. In a time of profound peace, it is well to look to our resources, and I do believe that a reserve for India is one of those resources. It has been long overlooked, and I think the time has now arrived for its reconsideration.

The CHAIRMAN: This is not a subject on which I can claim to be in any way an authority, it would, therefore, be presumptuous in me to offer any remarks further than to request the audience to empower me to tender a vote of thanks to General Newall for his interesting lecture.