

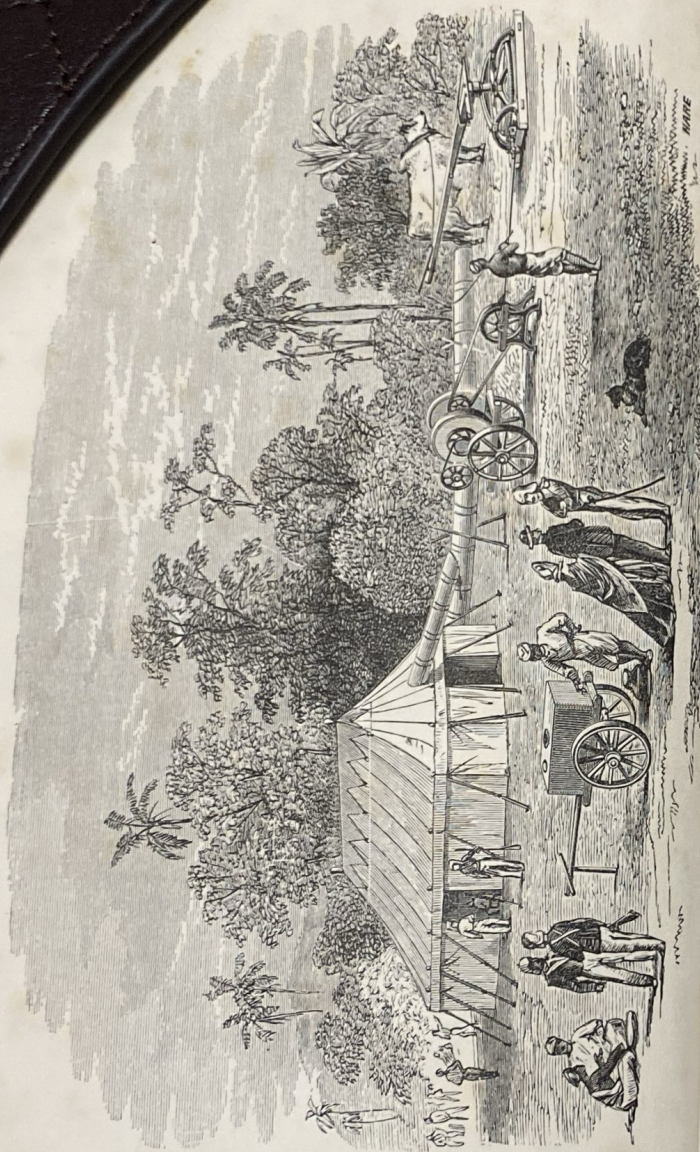
**THE
HYGIENE OF THE ARMY
IN INDIA.**



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PRACTICAL OBSERVATIONS

ON THE

HYGIENE OF THE ARMY IN INDIA:

INCLUDING REMARKS ON THE

VENTILATION AND CONSERVANCY OF INDIAN
PRISONS;

WITH A CHAPTER ON PRISON MANAGEMENT.

ILLUSTRATED WITH WOODCUTS.

By STEWART CLARK, M.R.C.S. ENG.,
INSPECTOR-GENERAL OF PRISONS, NORTH-WEST PROVINCES, INDIA.

LONDON:
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P R E F A C E .

THE sanitary condition of the British Army in India has of late been the subject of anxious inquiry. It is hoped that the practical suggestions made in this treatise may prove of use at the present time.

It has not been my object to enter into any elaborate discussion on the composition of foul air and impure water. Our knowledge of these, particularly the former, is, in some respects, involved in considerable obscurity; and many of the arguments relating to the gases, vapours, and other substances in which are supposed to lie their peculiar poisonous qualities, are purely hypothetical. But, however various the opinions regarding the particular gases or vapours in impure air which generate certain diseases, and however difficult it may be to exactly define its true character, all are agreed as to its generally baneful influence on the human constitution, and the healthful, invigorating effect of living in a pure atmosphere.

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HYGIENE OF THE ARMY IN INDIA.

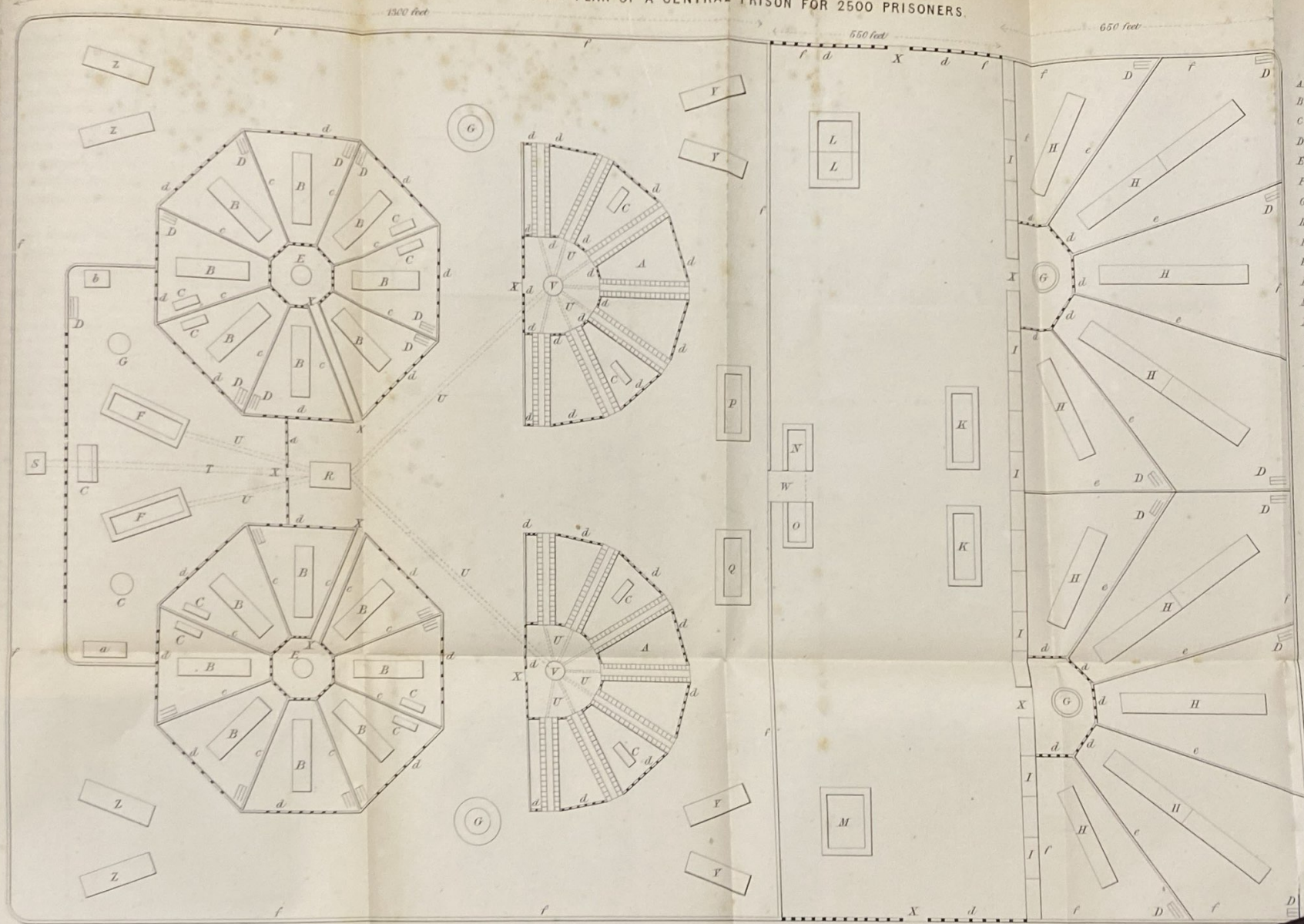
ERRATA.

- Page 24, line 11, for "foul air of the barracks," read "foul air of the barrack."
 " 41, line 15, for "three-inch tatties," read "three such tatties."
 " 41, foot-note, line 2 from bottom, for "from 150° to 120°," read "from 100° to 120°."
 " 54, line 9, for "tent and loops," read "tent by loops."
 " 57, line 2, for "Three fans," read "These fans."
 " 57, line 8, for "wall," read "walls."
 " 68, line 6 of description of Fig. 17, for "filtered reservoir," read "filter and reservoir."
 " 111, line 2 of description of Fig. 23, for "wall of urinal," read "divisional wall of urinal."
 " 112, line 6, for "quantity," read "quality."
 " 132, lines 10 and 11, for "eight lacs of rupees (8,60,000)," read "nine lacs of rupees (9,60,000)."
 " 142, lines 2 and 3, for "Superintendent-Surgeon," read "Superintending Surgeon."
 " 149, line 5 from bottom, for "by prepared," read "be prepared."

Chemistry of the Atmosphere.

The atmosphere is usually described as a gaseous fluid, containing oxygen and nitrogen in the proportions of 21 of the former to 79 of the latter, with a

GROUND PLAN OF A CENTRAL PRISON FOR 2500 PRISONERS.



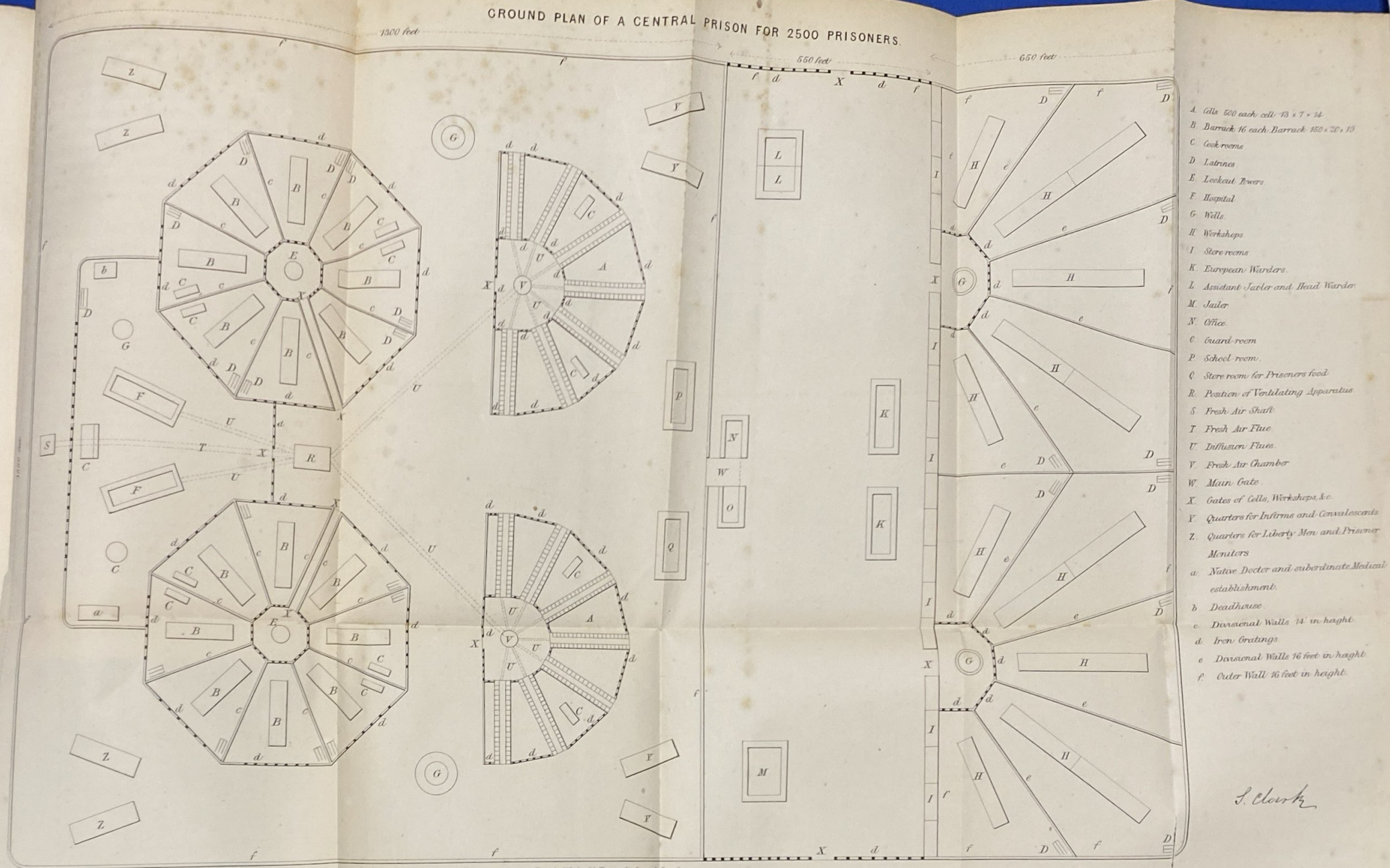
- A. Cells 500 each cell 7 x 14.
- B. Barrack 16 each Barrack 160 x 20, 10.
- C. Cook rooms.
- D. Latrines.
- E. Lockout Towers.
- F. Hospital.
- G. Wells.
- H. Workshops.
- I. Store rooms.
- K. European Warders.
- L. Assistant Jailor and Head Warder.
- M. Jailor.
- N. Office.
- O. Guard room.
- P. School room.
- Q. Store room for Prisoners food.
- R. Position of Ventilating Apparatus.
- S. Fresh Air Shaft.
- T. Fresh Air Flue.
- U. Diffusion Flues.
- V. Fresh Air Chamber.
- W. Main Gate.
- X. Gates of Cells, Workshops, &c.
- Y. Quarters for Infirmary and Convalescents.
- Z. Quarters for Liberty Men and Prisoner Monitors.
- a. Native Doctor and subordinate Medical establishment.
- b. Deathhouse.
- c. Divisional Walls 14 in height.
- d. Iron gratings.
- e. Divisional Walls 16 feet in height.
- f. Outer Wall 16 feet in height.

S. Clerk

its suit of workshops, and the men never leave the immediate vicinity of their quarters: this, on sanitary principles, is decidedly objectionable. Now I consider that the workshops should be in separate inclosures, and the system of discipline so arranged as to admit of the daily removal of the prisoners to some little distance from their sleeping quarters, during the hours allotted to labour, which would afford an opportunity for the complete ventilation of the interior of the prison during the day time, and of the workshops at night. The workshops are already separate buildings; so that, in the construction of new prisons, the additional expense would only be the cost of divisional and inclosing walls—an expenditure which would soon be repaid by the reduction in hospital charges and the generally improved condition of the prisoners, who would thereby be enabled to perform a better day's labour. The accompanying ground plan of a central prison for 2,500 prisoners would, I believe, meet the requirements alluded to, as well as admit of the introduction of an improved system of prison-discipline, which would still further improve the sanitary condition of the prisoners.

Prison-Discipline.

It would be impossible to discuss all the phases of prison-discipline in the space which can be allotted here to the subject. Such a discussion, moreover, would be perhaps out of place in a treatise of this kind. I shall, therefore, confine the following remarks chiefly to points bearing more or less on the sanitary condition of the inmates of our Indian prisons.

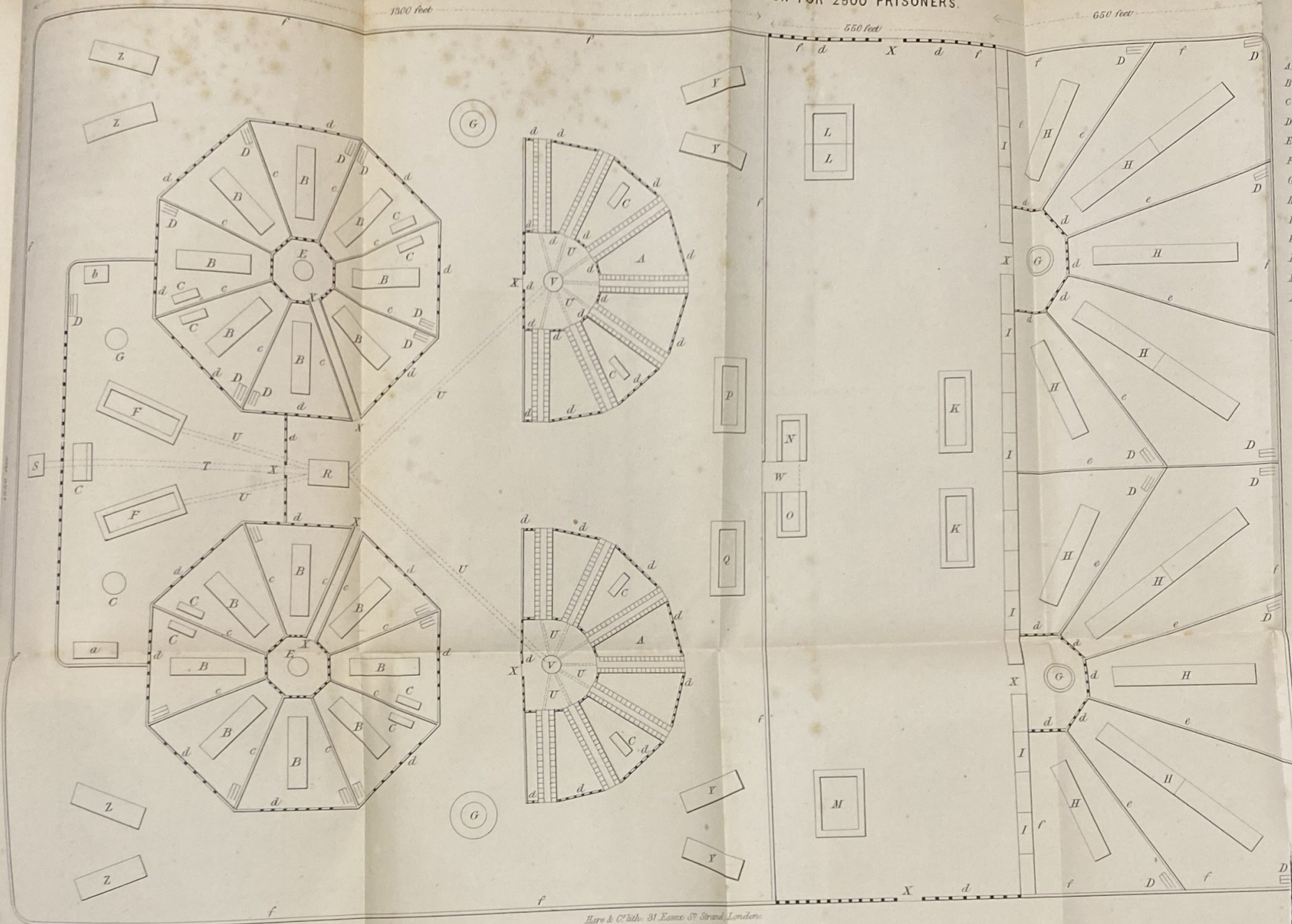


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GROUND PLAN OF A CENTRAL PRISON FOR 2500 PRISONERS.



- A. Cells 500 each cell 13 x 7 x 14.
- B. Barrack 16 each Barrack 150 x 20 x 10.
- C. Cook rooms.
- D. Latrines.
- E. Lookout Towers.
- F. Hospital.
- G. Wells.
- H. Workshops.
- I. Store rooms.
- K. European Warders.
- L. Assistant Jailor and Head Warder.
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- f. Outer Wall 16 feet in.

S. Clarke

The opinions of men who take an interest in such matters, appear to be almost equally divided regarding the relative advantages of the two systems of prison-discipline in force at present; namely, the system which requires the original sentence to be carried out in full, according to the very letter of the law; and that which contemplates the reformation of the prisoner through a carefully regulated course of prison-discipline resulting in remission of a portion of the original sentence, generally known as the Irish system.

I have always been strongly in favour of giving every prisoner at least one chance of reforming and gaining his livelihood by honest industry, after leaving the prison,* and consider that no system

* "Agriculture, as a means of employment for Indian convicts, has not hitherto been attempted, but the marked success which has attended the cultivation of convict farms in other parts of the world is full of encouragement; and I feel confident that a properly managed farm, subordinate to each central prison, would prove of immense advantage in various ways, not the least of which would be affording available ready means of change of air and out-door labour for the weakly prisoners, and enable the superintendent to employ his convalescents profitably, instead of being at a loss, as at present, for something to divert their thoughts from their miserable state, always more or less the reason of slow restoration to perfect health, and not unfrequently the direct cause of relapse.

"The proportion of the convicts in confinement having passed a fixed probationary period in complete incarceration, should also be selected to pass the remainder of their sentence at these farms, under various degrees of surveillance, to be regulated under certain badges and tickets-of-leave.

"Under proper management waste lands might be reclaimed, new systems of agriculture and horticulture brought into play, improved management of live-stock introduced, and, in short, a stimulus given to agriculture in all its phases, a most important branch of industry very much neglected in India, but fully as deserving our best attention as industrial manufactures.

"The chief part of the produce of these farms would be consumed by the prisoners themselves; any surplus, with the exception of live-stock, would be

its suit of workshops, and the men never leave the immediate vicinity of their quarters: this, on sanitary principles, is decidedly objectionable. Now I consider that the workshops should be in separate inclosures, and the system of discipline so arranged as to admit of the daily removal of the prisoners to some little distance from their sleeping quarters, during the hours allotted to labour, which would afford an opportunity for the complete ventilation of the interior of the prison during the day time, and of the workshops at night. The workshops are already separate buildings; so that, in the construction of new prisons, the additional expense would only be the cost of divisional and inclosing walls—an expenditure which would soon be repaid by the reduction in hospital charges and the generally improved condition of the prisoners, who would thereby be enabled to perform a better day's labour. The accompanying ground plan of a central prison for 2,500 prisoners would, I believe, meet the requirements alluded to, as well as admit of the introduction of an improved system of prison-discipline, which would still further improve the sanitary condition of the prisoners.

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PRISON FO



- A. Cells 500 each cell 73 x 7 x 14.
- B. Barrack 16 each Barrack 150 x 20 x 19.
- C. Cook rooms.
- D. Latrines.
- E. Lookout Towers.
- F. Hospital.
- G. Wells.
- H. Workshops.
- I. Store rooms.
- K. European Warders.
- L. Assistant Jailor and Head Warder.

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