

THE DWELLINGS OF  
THE LABOURING CLASSES,

Their Arrangement and Construction ;

WITH

THE ESSENTIALS OF A HEALTHY DWELLING.

ILLUSTRATED BY REFERENCES TO THE  
MODEL HOUSES

OF THE

Society for Improving the Condition of the Labouring Classes,

OF HIS ROYAL HIGHNESS THE LATE PRINCE CONSORT,

OF THE ROYAL WINDSOR SOCIETY,

AND OTHER RECENT BUILDINGS.

With Plans and Elevations

OF DWELLINGS ADAPTED TO TOWNS AND TO  
RURAL DISTRICTS.

BY

HENRY ROBERTS, F.S.A.,

FELLOW OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS,  
HONORARY MEMBER OF THE ACADEMY OF FINE ARTS, FLORENCE, &c.,  
A VICE-PRESIDENT AND FORMERLY HONORARY ARCHITECT TO THE SOCIETY FOR  
IMPROVING THE CONDITION OF THE LABOURING CLASSES.

*SIXTH THOUSAND, REVISED AND AUGMENTED EDITION.*

PUBLISHED BY REQUEST, AND SOLD FOR THE BENEFIT OF  
THE SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES,  
AT NO. 21, EXETER HALL, STRAND, LONDON ;  
ALSO BY HATCHARD'S, PICCADILLY ; RIVINGTON'S, WATERLOO PLACE ;  
SEELEY & CO., FLEET STREET ; J. W. PARKER & CO., WEST STRAND ;  
AND NISBET & CO., BERNERS STREET.

To the Memory of

HIS LATE ROYAL HIGHNESS

ALBERT, PRINCE CONSORT, K.G.,

*THE FORMER PRESIDENT;*

TO HIS GRACE

THE ARCHBISHOP OF CANTERBURY,

*AND TO THE OTHER VICE-PATRONS AND VICE-PRESIDENTS;*

TO THE RIGHT HONOURABLE

THE EARL OF SHAFTESBURY, K.G.,

*PRESIDENT,*

AND TO MY FORMER COLLEAGUES ON THE COMMITTEE

OF THE

SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES,

THE PRESENT REVISED AND ENLARGED EDITION OF

**This Essay**

IS RESPECTFULLY DEDICATED.

# SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES.

INCORPORATED BY



ROYAL CHARTER.

Patron.

HER MOST GRACIOUS MAJESTY THE QUEEN.

President.

THE RIGHT HON. THE EARL OF SHAFTESBURY, K.G.

Vice-Patrons.

HIS GRACE THE ARCHBISHOP OF CANTERBURY.  
HIS GRACE THE DUKE OF MARLBOROUGH.  
THE RIGHT HON. THE EARL OF HARROWBY, K.O.  
THE RIGHT HON. THE EARL OF VERULAM.  
THE RIGHT HON. THE EARL OF EFFINGHAM.  
THE RIGHT HON. EARL RUSSELL, K.G.  
THE RIGHT HON. AND REV. VISCOUNT MIDLETON.  
THE RIGHT HON. VISCOUNT BARRINGTON.  
THE RIGHT HON. LORD RAYLEIGH.

THE RIGHT HON. LORD CALTHORPE.  
THE RIGHT HON. LORD EBURY.  
THE RIGHT HON. LORD KINNAIRD, K.T.  
THE RIGHT HON. AND RIGHT REV. THE BISHOP OF LONDON.  
THE RIGHT REV. THE BISHOP OF PETERBOROUGH.  
THE HON. AND RIGHT REV. THE BISHOP OF CARLISLE.  
THE RIGHT REV. THE BISHOP OF RIPON.

Vice-Presidents.

RIGHT HON. EARL SPENCER, K.O.  
RIGHT HON. EARL FORTESCUE.  
RIGHT HON. EARL OF DUCIE.  
RIGHT HON. LORD TEIGNMOUTH.  
THE LORD ASHLEY.  
LORD HENRY CHOLMONDELEY.  
THE RIGHT HON. WILLIAM F. COWPER, M.P.

THE HON. WILLIAM ASHLEY.  
THE HON. ARTHUR KINNAIRD, M.P.  
SIR BROOK W. BRIDGES, BART., M.P.  
SIR ARTHUR DE CAPEL BROOKE, BART.  
SIR WILLIAM MILES, BART.  
B. BOND CABBELL, ESQ.  
J. W. CHILDERS, ESQ.

W. A. MACKINNON, ESQ., M.P.  
R. BRINSLEY SHERIDAN, ESQ., M.P.  
THE VERY REV. THE DEAN OF CARLISLE.  
JOHN C. COLQUHOUN, ESQ.  
THE RECORDER OF LONDON.  
SIR WALTER G. STIRLING, BART  
HENRY ROBERTS, ESQ., F.S.A.

Committee.

THE RIGHT HON. THE EARL OF SHAFTESBURY, K.G., CHAIRMAN.

GEORGE ARBUTHNOT, ESQ.  
THE LORD CHARLES BRUCE, M.P.  
THE REV. EMILIUS BAYLEY.  
THE RIGHT HON. W. F. COWPER, M.P.  
ROBERT DIMSDALE, ESQ., M.P.  
ALEXANDER HALDANE, ESQ.

H. HARWOOD HARWOOD, ESQ.  
THE REV. EDMUND HOLLAND.  
H. POWYS-KECK, ESQ.  
WILLIAM LONG, ESQ.  
CHARLES A. MOODY, ESQ.  
THE REV. SAMUEL MINTON.  
THE REV. WALTER MITCHELL.

WILLIAM JAMES MAXWELL, ESQ.  
THE REV. J. M. NISBET.  
THE REV. J. B. OWEN.  
ABEL SMITH, ESQ., M.P.  
JOHN SPERLING, ESQ.  
J. G. SHEPPARD, ESQ.  
THE REV. A. W. THOROLD.

Treasurer—THE RIGHT HON. THE EARL OF LEVEN AND MELVILLE.

Bankers—MESSRS. WILLIAMS, DEACON, & Co.

Secretary—MR. CHARLES PAYNE.

Offices and Committee Room—Nos. 20 and 21, Exeter Hall.

The Society seeks to promote the important objects for which it is constituted by the following means:—

*First*—By arranging and executing Plans, as Models, for the Improvement of the Dwellings of the Labouring Classes, in the Metropolis and also in the manufacturing and agricultural districts.

*Secondly*—By the issue of Publications calculated to promote and facilitate the construction of Improved Dwellings for the Working Classes.

*Thirdly*.—By correspondence with Landed Proprietors, Clergymen, and others desirous of improving the condition of the Labouring Classes in their own neighbourhood.

## PREFACE.

THE following observations having been originally addressed to the scientific body of which the Author is a member, some unavoidable technicalities will, he trusts, be excused by the general reader.

At the request of the Earl of Shaftesbury, and of several gentlemen distinguished for the interest they have taken in the social improvement of the Labouring Classes, the original Essay was prepared for publication, with the addition of Notes and an Appendix.

The translation into French,\* made and extensively circulated by order of the Emperor when President of the Republic, was from the First Edition, which was also the case generally with the large portions of it published in Germany and in the United States of America.

On the demand for a Third Edition, after a circulation of 3000 copies, the Author revised it, and added to the Appendix such supplementary matter as further experience enabled him to supply.

After the issue of 5000 copies, the Committee of the Society by which it was published having requested its Author to undertake the duty of preparing a New Edition, he has, in the hope of maintaining its practical usefulness, again revised and added to it considerably, by giving the substance of a second paper read before the Royal Institute of British Architects, on "The Essentials of a Healthy Dwelling, and the Extension of its Benefits to the Labouring Population," which, after the circulation of a large Edition, is now out of print.

The changes in his auditory, caused by a lapse of twelve years, will account for some slight, unavoidable repetitions, in the second paper, and the reference to the then recent death of the lamented Prince Consort will recall to mind the feelings of the members of both Societies on the loss of their illustrious Patron, who in the one case had manifested a high appreciation of art and science, and in the other an earnest desire that both should be rendered conducive to the well-being of those who greatly require our help.

Within the period of seventeen years, now elapsed since the First Edition was published, and of twenty-three years since the commencement of the efforts of the Society which it prominently records, there has been not only a gradual and progressively increased recognition of the necessity for the Improvement of the Dwellings of the Labouring Classes, as a most important means of ameliorating their condition, and of diminishing the serious moral and physical evils to which their circumstances render them peculiarly liable, but there has also been a wide-spread adoption of measures

---

\* At the Congrès International de Bienfaisance, held in Brussels, under Royal authority, in 1856, a French member, when presenting a Report, thus referred to this translation:—"Cette œuvre, ce résumé didactique, est devenu en France, et chez toutes les nations représentées ici, le point de départ, le guide sûr, le *vade mecum* de ceux qui ont en à se préoccuper de l'amélioration des classes laborieuses."

well calculated to effect that object. Some of a *legislative* character, which the Author pointed out and urged, were adopted within a short period, others more recently, amongst which is the Act passed in 1866, to empower the granting of loans by Government, on the security of Improved Dwellings for Working People. The efforts of *Associations* and of *private* individuals have greatly multiplied.\* The co-operative system has also been advantageously adopted in some undertakings for the increase of house accommodation. But so vast is the field, and so urgent the need, especially in the metropolis, where the evil has been much aggravated by the destruction of household property, consequent on Public Improvements and the introduction of Railways into its very centre, that no *adequate* results can be expected without greatly increased and combined efforts, more especially on the part of the employers of labour, who in the capital of Great Britain have not in this respect manifested that sense of responsibility which has led to efforts, on a large scale, in many of our agricultural, manufacturing, mining, and quarry districts.

In the Appendix is given a condensed historical sketch of the circumstances which led to, and of the progress made in, the movement for Improving the Dwellings of the Labouring Classes, as well as of the measures of a legislative character adopted in England; it has been compiled chiefly from papers contributed by the Author, and published in the Transactions of the National Association for the Promotion of Social Science, in those of the British Association for the Advancement of Science, and in the Reports of the Congrès International de Bienfaisance.

The Appendix also contains a general view and statement of the efforts which have been made in the Metropolis for Improving the Dwellings of the Labouring Classes, and notices particularly the buildings constructed by the Trustees of Mr. Peabody's munificent gift.

A protracted residence on the continent, partly for the recovery of health, has enabled the Author from personal observation to refer to numerous instances in which the movement, commenced in England, has been followed abroad.

The unacknowledged use by several subsequent writers, of the Author's various papers on the Dwellings of the Labouring Classes, which have been published by different Societies, will account for any plagiarism, if such should appear in the present volume, it having been his invariable aim so to state whenever he has profited by the writings of others.

In Mr. Chadwick's recent Report on the Dwellings Section of the Paris International Exhibition made to the Committee of Privy Council on Education, there are passages referring to the late Prince Consort's Exhibition Model Houses of 1851, so liable to produce an impression at variance with the statement of facts given by the Author at page 61, that he has, very unwillingly, felt obliged to add in a note a quotation of unquestionable authority.

THE Introduction to the French Edition of the work, which forms the First Part of the following pages, published by order of the Emperor, expresses its object so clearly, and gives so much prominence to its most salient points, that the Author thinks it not out of place to inscribe here the original text :—

AVIS DU TRADUCTEUR.

“Cet ouvrage s'adresse à tous les hommes de bien, à tous les amis du pays. Il leur est offert comme un signe de la sollicitude qui s'éveille vivement dans une autre contrée pour l'amélioration du sort des classes ouvrières, comme un exemple dont ils sauront s'inspirer.

“Procurer aux ouvriers des campagnes et à ceux des villes des habitations bien éclairées, bien aérées, sèches et propres, tel est le premier problème à résoudre.

“N'hésitons pas à dire qu'il y a longtemps qu'il serait résolu, si chacun était bien convaincu qu'une fois ces conditions réalisées, on verrait disparaître une foule de causes de maladie, de misère, de désordre et d'abâtardissement.

“Quel est le médecin qui ignore pourtant que le défaut de lumière, un air vicié, un milieu humide, un entourage sale sont autant de causes qui, séparées et à plus forte raison réunies, contribuent plus que toutes les autres à abrégér la vie et à la rendre misérable, en affligeant ceux qui s'y exposent d'une foule d'infirmités personnelles, ou héréditaires? Quel est le moraliste qui n'ait reconnu que l'âme humaine elle même se dégrade sous l'influence prolongée de telles conditions? Quel est l'homme d'état qui n'ait gémi de voir les hôpitaux et les prisons encombrés des malheureux qu'elles engendrent?

“Or, presque toujours pourtant il est facile d'obtenir pour les logements ruraux l'éclairage nécessaire. A l'égard des logements des villes, c'est une des circonstances les plus dignes de fixer l'attention des commissaires chargés par les municipalités de cette utile surveillance.

“Le renouvellement régulier de l'air dans les habitations est un problème nouveau pour la science. Elle ne l'a jamais abordé. Mais ne suffit-il pas de le poser pour qu'elle en donne bientôt une solution heureuse et pratique?

“Sous le rapport de l'humidité, l'assainissement des habitations laisse partout à désirer, même dans les maisons de la classe aisée. Portons donc vivement l'attention de nos jeunes architectes vers cet important sujet. C'est un grand titre que d'être jugé digne d'aller à Rome; c'est un grand mérite quand on revient, que d'en rapporter les plans de quelque palais destiné à faire l'ornement de nos cités; mais, celui qui trouvera ou qui propagera l'art de chasser l'humidité qui rend malsaines un si grand nombre des habitations de nos ouvriers, ruraux ou urbains, celui-là se sera acquis des droits à la reconnaissance du pays et se sera préparé une source de satisfaction inépuisable.

“En attendant, que les hommes de bien, que les jeunes gens surtout apprennent aux ouvriers qui les entourent à mettre quelque prix à ces soins de propreté qui sont le premier pas fait dans la voie de ce progrès vers le bien.

“Il serait si facile d’avoir dans chaque quartier les instruments nécessaires pour laver, éponger, blanchir une chambre ou un escalier, pour y coller du papier, pour y mastiquer les crevasses, pour y détruire les insectes ! Leur acquisition, impossible pour chaque ouvrier, faite par une association bienfaisante, servirait à améliorer le sort de tous les ménages de son ressort, presque sans dépense aucune.

“D’abord, ceux à qui on prêterait ces outils s’en serviraient mal ou médiocrement ; mais, bientôt l’enseignement mutuel intervenant chacun parviendrait à en tirer bon parti.

“Des à présent, tout, cela est praticable ; il faut donc le pratiquer. Quand notre population si bienveillante et si ingénieuse voudra se consacrer à de telles œuvres, elle en comprendra bientôt l’importance extrême, et leur bienfait se répandra avec rapidité dans tout le pays, pour le plus grand bonheur des classes laborieuses.”

# CONTENTS.

## PART THE FIRST.

### THE DWELLINGS OF THE LABOURING CLASSES.

- APPEAL TO THE INSTITUTE OF BRITISH ARCHITECTS, 1.—Duty of those who have workmen in their employ, 2.—The inability of the working classes to improve their own abodes, 2.—The past and present state of the labourers' dwellings, 2.—Description of a room in St. Giles's, an example of what may be seen in every large town, 3.—Modern street improvements have been injurious to the poor, 3.—Statistics of house accommodation for the poor in the parish of St. George's, Hanover-square, 3.—Success of Howard in the improvement of prisons a stimulant to benevolent exertion, 4.—General principles and conditions of healthy abodes in towns and in the country, 5.
- THE SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES, 5.—Their model buildings near Bagnigge Wells, 6.—Modified application of these plans to towns, 7.—Lodging-houses for single men, 7.—The Charles-street house, 8.—The George-street house, 8.—Results of a legislative character, 9.—Immunity from cholera in the lodging-houses of the Society, 9.—The Hatton-garden lodging-house, 9.—Arrangement of houses to accommodate many families in a limited space, 10.—Example in the Streatam-street model houses, 10.—Not liable to the window or to the house tax, 11.—Fire-proof construction, 11.—The Portpool-lane model dwellings built with thanksgiving-offerings, 12.
- THE WORKMEN'S DWELLINGS AT BIRKENHEAD, 13.—Report made on these buildings, 13.
- THE METROPOLITAN ASSOCIATION FOR IMPROVING THE DWELLINGS OF THE INDUSTRIOUS CLASSES, 14.—Their houses for families in the Old Paneras-road, 14.—The lodging-house, and houses for families, in Spitalfields, 15.—The Destitute Sailors' Asylum, a model for caravansary lodging-houses, note, 15.—Difference between the constitution of the Metropolitan Association and that of the Society for Improving the Condition of the Labouring Classes, 16.—Lumsden's Buildings, Glasgow, an illustration of the evil effects of the window tax, 16.—Improvement and re-modelling of old buildings profitable investments, 17.—Necessity of rigid economy in new buildings, 17.
- ON LABOURERS DWELLINGS IN AGRICULTURAL DISTRICTS, 18.—Internal comfort and picturesque effect compatible with strict economy, 18.—Influence of a single landlord in changing the aspect of a village,—instance of John Howard, 18.—Letter of the Duke of Bedford on cottage building, 19.—The cottages on his Grace's estate in Bedfordshire and Devonshire, 19.—The Duke of Northumberland and other landed proprietors carrying out similar improvements, 20.—Published plans of the Marquis of Breadalbane's cottages, 20; and those of the Duke of Bedford, 20.—Prize design of the Royal Agricultural Society, 20.—Designs for cottages published by the Society for Improving the Condition of the Labouring Classes, 20.—General description of these designs, including a lodging-house for unmarried workmen and labourers, 21.—Cost of cottages must vary according to local circumstances, 23.—Practical suggestions on cottage buildings, 23.—Hollow walling, and advantages of hollow bricks, 24.—Description of wash for rendering brick and stone impervious to moisture, note, 24.—Various materials for constructing walls and floors, 25.—Roof covering, ventilation, window lights, internal plastering, rain water, &c., 27.—Concealment of Closets, 28.

## PART THE SECOND.

### ON THE ESSENTIALS OF A HEALTHY DWELLING.

- Peculiar claims of the subject, 29.—Great interest taken in it by H. R. II. the lamented Prince Consort, and shared by Her Majesty the Queen, 29.—Motto from the words of his late Royal Highness, 29.
- The condition of HEALTHY in regard to dwellings, arises out of a combination of circumstances, which comprise—
- 1st. Those appertaining to LOCALITY, including a free circulation of pure air, 30; a good soil, 30; an efficient drainage, 31; deodorizing agents, note, 31; an ample supply of pure water, 32; a genial aspect, 33.
  - 2nd. Those which are STRUCTURAL, 33; to secure which a dwelling must be, 1st, dry in regard to its foundation, 33; dryness on ship-board, note, 33; floors, external walls, roof covering, 34; advantages of a fire-proof construction, 34; use of wood, lead, iron, 35. 2nd, it must be warm, 35. 3rd, the number and area of its apartments must be in proportion to the number of their occupants, and due provision must be made for the requisites appertaining to daily life, 35; a labourers' dwelling in the country, 36; smoking of chimneys, 36. 4th, it must be well lighted, 37. And, 5th, properly ventilated, 37; space required to keep a healthy man in full vigour, 38; mistakes on this subject and their injurious tendencies, 38; natural ventilation, 39; the means by which it is obtainable, 40; warming by ordinary grates, 40; escape of vitiated air, 40; admittance of fresh air, 41; artificial ventilation, which is mostly applicable to public buildings, 42; Report of Government Commission on warming and ventilation, 43.



## CONTENTS.

3rd. Those which are dependent mainly on the OCCUPANTS, though not wholly so—external and internal cleanliness, and a proper use of structural arrangements, 43; neglect of sanitary laws, 43; the evils to which the wealthy, the middle, and the lower classes are liable from the infringement of those laws; in the latter case especially, from intemperance, a fruitful cause as well as consequence of domiciliary wretchedness, 44.

### PART THE THIRD.

#### ON THE EXTENSION OF THE BENEFITS OF A HEALTHY DWELLING TO THE LABOURING POPULATION.

The pecuniary features of the question, 45.—Speculative builders, 45.—Architects, 46.

MEASURES FOR EFFECTING THIS OBJECT.—1st. Those of a *Legislative* character, and those for which the Executive Government are responsible, 46; a jealous respect for the rights of persons and property an impediment to the carrying out of such public improvements as have been effected with unprecedented rapidity in Paris, 46; just cause for complaint in our own metropolis, 47; population displaced in the forming of new streets productive of overcrowding and great misery, 47; scenes witnessed by the Author in Paris, 47; legislative measures adopted in England to improve the domiciliary condition of the labouring population, 47; the Earl Russell, 47; the Earl of Shaftesbury, 47; further legislative interference indispensable to the remedying of the evil of overcrowding, 48; a lost opportunity, 49; close parishes, 49; Dr. Acland's proposed cottage registration, note, 49; facilitating the transfer of land, 50; prevention of the building small houses on undrained land, and without proper sanitary arrangements, 50; opinion of the First Commissioner of Works, 50; Governments of foreign countries study our example, 50.

2nd. Measures which ought to be adopted by *Landowners* and *Employers* generally, for the benefit of their dependents, 50; the late Duke of Bedford's opinion and example on this subject, 50; the example of the Duke of Northumberland, 50; the question of remunerative return, 50; the efforts made by great manufacturers, owners of mines, quarries, railway companies, 50; police barracks, 51.

3rd. Measures undertaken from benevolent motives by *Associations* and by *Individuals*. Associations in the metropolis, 51; experience gained in regard to new buildings, and to renovated old houses, 52; necessity for enforcing sanitary improvements on the owners of unhealthy dwellings, 52; satisfactory results of the treatment of old buildings in Chelsea, and some other parts of London, 53; as well as at Hastings, 54; new buildings constructed by the Strand Building Company, 54; by the Windsor Royal Society, 54; by the Redhill and Reigate Cottage Improvement Society, 55; the Huddersfield Improvement Commissioners' Lodging-houses, 55; efforts in Scotland, and the necessity for them, 55; Edinburgh, and Glasgow, 55; the Corporation of London, and the Improved Industrial Dwellings' Company, see note, 55; efforts in Ireland, 56; reply to a charge often made, 56.

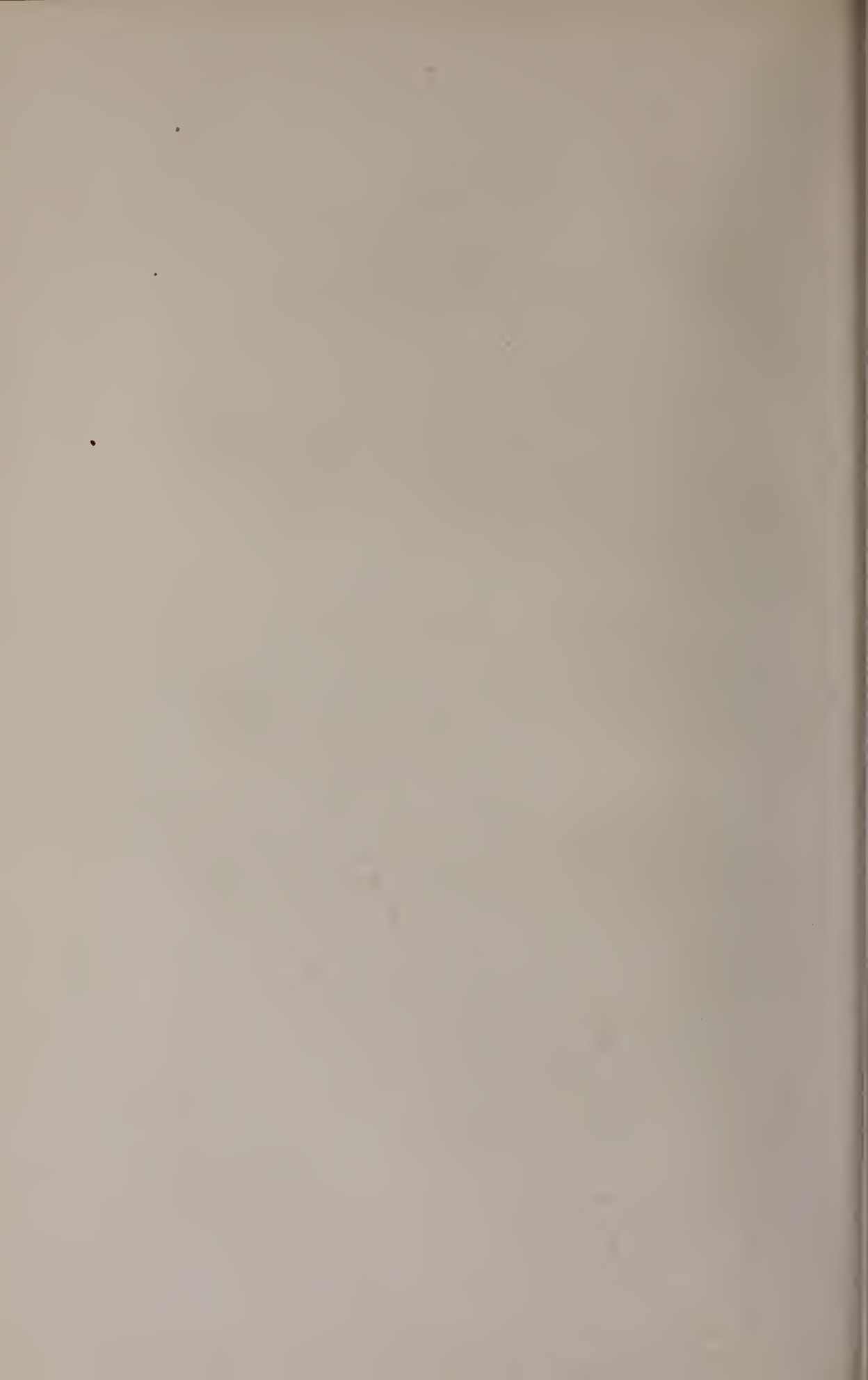
Measures adopted in Foreign Countries—in France, 56; private enterprise more successful than associated efforts stimulated by a government subvention, 58; Berlin Society under the patronage of the King of Prussia and H.R.H. Prince Frederick William, 59; St. Petersburg, Frankfort, Bremen, 59; rate of interest sought from such undertakings on the Continent, 59; extension of this movement to Sweden, Holland, Belgium, Bavaria, and other German States, Switzerland, and Italy, 60; greatly needed in Genoa and Naples, 60; model buildings constructed in New York and Boston, 60.

Measures adopted by *Individuals*, 60; Her Majesty the Queen, 60; obstacles to the profitable fulfilment of a desire expressed by George III., efforts made for their removal, encouraged and greatly stimulated by the example of the lamented Prince Consort, 61; H.R.H.'s Exhibition Model Houses, 1851, has led to the construction of separate dwellings for married soldiers, a measure promoted by the late Lord Herbert, 62; the leading features of its arrangement have been adopted in numerous places at home and abroad, 62; H.R.H. the Prince of Wales' Model Dwellings in Lambeth, 64; efforts made by Lord Kinnaird, 64; Miss Burdett Coutts, 64; Benefit Building Societies, 64; first public exhibition of Sanitary Appliances adapted to the circumstances of the working classes, 64; necessity for the instruction of the working classes in all which relates to the improvement and keeping of their houses in good order; resolution adopted at the Congrès International de Bienfaisance, 65; importance of this object urged by individuals in public addresses, 65; Lord Palmerston, 65; enormous loss of life from preventable causes, 65; beneficial results of recent sanitary ameliorations, note, 65; the misery and degradation of vast masses of the population often urged by foreigners as a reproach to England, 66; the benefits of a healthy dwelling can only be extended to the working population through the adoption of a combination of suitable measures; encouragement to effort from the ameliorations effected in prisons, military barracks, and hospitals, application of the motto, in conclusion, 66.

## CONTENTS.

### APPENDIX.

- Brief notice of the circumstances which led to, and of the progress made in the movement for improving the Dwellings of the Labouring Classes, 67.
- Declarative resolution on the necessity for sanitary instruction, passed at the Congrès International de Bienfaisance, held in Brussels, 70.
- Statistics of mortality in the principal Cities and Countries of Europe, 70.
- General view of the efforts made for improving the Dwellings of the Labouring Classes in the metropolis, 71.
- Exemption of Model Dwellings for the Industrious Classes from the Inhabited House Duty, recently granted, 72.
- Application of Mr. Peabody's gift for the benefit of the poor of London, 73.
- Tabular statement of improved or Model Dwellings in the metropolis, 74—76
- Places at which efforts have been made to establish provincial or local Associations, 76.
- List of Tenants' trades and occupations in Metropolitan Model Houses, 77.
- Tabular statements showing the cost of, and returns from, Metropolitan Model Houses, 78, 79.
- On the use and form of Hollow Bricks, with their application in walls and arches, 80—82.
- Articles of importance in the construction and fitting up of Dwellings for the Labouring Classes, 83; the Economical Museum at Twickenham, 83.
- Duties of Superintendent, and rules of Lodging Houses for Working Men, 84, 85.
- Terms and Agreements for letting cottages, 86.
- Plans and Elevations of existing Model Houses in the Metropolis, 88—105.
- The Asylum for Destitute Sailors, Dock Street—A model for Caravansary Lodging Houses, adapted for nightly lodgers, known as Trampers, &c., 107.
- Plans at large of Tenements in Model Houses, 109—111.
- Plans and Elevations for Workmen's Dwellings in towns, 113—117.
- The late Prince Consort's Exhibition Model Houses, 1851, 120—121.
- Plans for Workmen's Dwellings in towns, adapted to the higher as well as the lower paid class of working people, 123.
- Description, Plans, Elevations, &c., of the Windsor Royal Society's Cottages and Lodging House, 125—135.
- Cottages built by the Metropolitan Association in Albert Street, Spitalfields, and at Penge, 137—139.
- Suggestions for the grouping of Double Cottages, with numerous designs for Cottages and a Lodging House, adapted to agricultural, manufacturing, mining, and quarry districts, 140.



## PART THE FIRST.

# On the Dwellings of the Labouring Classes.

---

READ AT THE

ROYAL INSTITUTE OF BRITISH ARCHITECTS,

JANUARY 21, 1850.

THE EARL DE GREY, K.G., PRESIDENT,

IN THE CHAIR.

---

THE subject now submitted to the consideration of the INSTITUTE OF BRITISH ARCHITECTS is one to which their special attention has not been previously invited, although it was incidentally alluded to by my friend, Mr. Sydney Smirke, in the course of the last session.

Much has of late been said and written on the dwellings of the labouring classes; our illustrious Patron, the Prince Consort, has emphatically shown that he feels deeply interested in this subject, and has publicly announced\* that "these feelings are entirely and warmly shared by her Majesty the Queen," our most gracious Patroness. Still it is probable that but few members of the Institute have given any special attention to those details, which I shall have to bring under your notice; and certainly a yet more limited number have been professionally engaged in a field of labour, which apparently offers little scope for scientific skill, and but few attractive points to an artist's eye. Such was my own case when I undertook, in 1844, the duties of Honorary Architect to the Society for Improving the Condition of the Labouring Classes, to whose operations in this department your attention will be hereafter invited.

There appear to be many reasons which should, in an especial manner, commend this subject to the consideration of the Architect, besides those which give it so strong a claim on the philanthropist and political economist. A moment's reflection must show that the highest achievements of architecture are accomplished through the instrumentality of the working classes, whose skill and persevering industry conduce as much to the fame of the Architect as the steady valour of the soldier does to weave the crown of victory around the brow of his triumphant General.

The subject  
claims special  
consideration

---

\* At the fourth annual meeting of the Society for Improving the Condition of the Labouring Classes, 18th May, 1848, when his Royal Highness presided, and delivered an Address, the electric effect of which extended far beyond the walls of Freemasons' Hall.

I feel assured, then, that this subject will command the patient consideration of the members of the Institute, although it be devoid of those charms which render attractive so many departments of our profession. May we not also hope that it will engage the attention of some who are carrying out as Contractors the designs of the Architect. Many of them have in their employ a large number of the working classes, and without pecuniary sacrifice might do much towards securing for those, whose labour is to their employers a source of considerable profit, such dwellings as would greatly conduce to their comfort, and promote the health and good morals of themselves and their families.

Inability of the Labouring Classes to improve their dwellings.

It is only the merest fraction of the working classes who, in regard to their dwellings, have it directly within their own power in any way to help themselves. Hence, the greater claim for the kind consideration of those whose position and circumstances give them the opportunity of providing in this respect for their wants, on the sound principle of receiving in return a fair per-centage on the necessary outlay of capital.

In addressing you on the Dwellings of the Labouring Classes, I abstain from all topics of an antiquarian and historical character; I will not occupy your time by describing the caves or the huts in which, at an early period of our history, dwelt the masses of the labouring classes in this country; nor, in order to draw a comparison, need I ask you to explore the classic ruins of other lands, to tread some narrow vias in the disinterred remains of Pompeii: neither will we stay to inquire whether the labouring classes are, in reference to their dwellings, in a worse condition now than they were one or two centuries since. The remark of Mr. Macaulay on this subject may suffice, when he says, "Of the great body of the people, of those who held the ploughs, who tended the oxen, who toiled at the looms of Norwich, and squared the Portland stone for St. Paul's, very much cannot be said; history was too much occupied with courts and camps to spare a line for the hut of the peasant, or for the garret of the mechanic."

Wretchedness resulting from their actual condition.

I do not enter into any lengthened detail of the present state of the dwellings in which a very numerous body of the labouring classes are lodged.\* My own observations most fully confirm what has been stated over and over again as to the magnitude and wide extent of the wretchedness resulting from their actual condition, which arises from the want of all those arrangements which are calculated to promote the comfort and moral training of a well-ordered family, as well as the utter absence of proper ventilation, efficient drainage, and a good supply of water; together with a system of over-crowding that would not be tolerated in the farm-yard, the stable, or even the dog-kennel.† One example may suffice. About four years since,

---

\* "A Lecture on the Unhealthiness of Towns," by Viscount Ebrington, M.P., published by the Health-of-Towns' Association, describes in so lucid and feeling a manner the miseries to which an over-crowded and badly-housed population are subject, and gives in a condensed form so many important statistical facts, that its perusal cannot fail to interest as well as instruct even those who usually shrink from such inquiries.

† The following Statistical Report of a house-to-house visitation in the parish of St. George, Hanover-square, was made in 1842, at the instance of the present Earl of Harrowby. 1465 families of the labouring classes were found to have for their

with the desire to obtain ocular demonstration as to the actual existence of such a state of things, I visited with a friend several houses in St. Giles's, the immediate neighbourhood of the Model Lodging House, George-street, to be hereafter described. In one of these houses we found a room about 22ft. by 16ft., the ceiling of which could be easily touched with the hand, without any ventilation, excepting through some half-patched broken squares of glass; here were constantly lodging from forty to sixty human beings, men, women, and children, besides dogs and cats. Further details it is unnecessary for me to describe; their very recital would disgust you.

The pulling down and clearing away of numerous dwellings occupied by the labouring classes, in order to make way for modern improvements, has greatly aggravated these evils, and even the carrying into effect the important requirements of the Health-of-Towns' Bill itself must press heavily on the poor, unless it be connected with the building or fitting-up of improved dwellings.

Evils greatly aggravated by public improvements.

residence only 2174 rooms, and 2510 beds. The distribution of rooms and beds was as follows:—

| Dwellings.                    | No. of Families. |                           |      |
|-------------------------------|------------------|---------------------------|------|
| Single room for each family . | 929              | One bed to each family .  | 623  |
| Two " " .                     | 408              | Two " " .                 | 638  |
| Three " " .                   | 94               | Three " " .               | 154  |
| Four " " .                    | 17               | Four " " .                | 21   |
| Five " " .                    | 8                | Five " " .                | 8    |
| Six " " .                     | 4                | Six " " .                 | 3    |
| Seven " " .                   | 1                | Seven " " .               | 1    |
| Eight " " .                   | 1                | Dwellings without a bed . | 7    |
| Not ascertained .             | 3                | Not ascertained .         | 10   |
| Total .                       | 1465             | Total .                   | 1465 |

These Statistics, the collection of which has been incorrectly attributed to the Author, were quoted, as recently as December 1866, by a learned Professor of Architecture, in order to show the great desideratum for the abodes of the "inferior" class of working people in the metropolis to be "single-roomed accommodation," for which he calculated the rents to return 9 per cent. on the outlay, at 3s., 3s. 6d., and 4s. per week, according to the floors; stating, very erroneously, that none of the Dwellings in the Model Lodging Houses already built were obtainable for less than 5s. to 6s. per week.

Misuse of House accommodation Statistics.

The evidence given by Dr. Letheby, that the weekly rents paid by the poor in the metropolis average 2s. 6d. per room, some being only 1s. 6d. per room, stultify such calculations of pecuniary return from single-roomed tenements for families; whilst the evidence of an eminent Architect, my friend Mr. G. Gilbert Scott, given in his "Remarks on Secular and Domestic Architecture," pointedly hints at the lamentable effects of single-roomed occupation by families. Commenting on "the neglect of providing the means of living consistently with the demands of human nature," he says in a note, "It has been my misfortune on two occasions to serve on the Grand Jury at the Old Bailey, when the crimes which have come before us, originating entirely from this cause, have been too fearful even to think of."

Both the premises and the conclusions of Professor Kerr, in his paper "on the Problem of providing Dwellings for the Poor," read at the Royal Institute of British Architects, appear to the Author most erroneous. And he can only attribute to the want of a more intimate acquaintance with the subject his having put aside, what he termed, "all sentimental considerations," as well as the imagining that "he viewed it from the sensible and practical point, namely, from a purely business point of view, as based upon figures and calculations."

The evils not restricted to large towns.

If it be said that the remarks I have made can alone apply to a metropolitan St. Giles's, or to Saffron-hill, a reference to the reports of the Health-of-Towns' Commission,\* or to the more recent and graphic descriptions in the columns of the *Morning Chronicle*, will abundantly show that our provincial towns,† our rural villages, and even many of the picturesque cottages which so much enliven the landscape of Great Britain, form no exception to the wretched condition of a large proportion of the dwellings tenanted by our labouring peasantry, artisans, and mechanics. In a provincial town, I lately entered one of three cottages approached by a passage 2ft. 6in. wide, common to the whole of them; in a ground-floor room 10ft. 6in. by 8ft., and 5ft. 10in. high, with a triangular loft in the sloping roof, were lodged a husband, a wife, and five children. The out-buildings common to these cottages I forbear to describe. Yet this is an underdrawn picture of the domiciliary wretchedness which many a dwelling in England, with its boasted civilization, refinement, and wealth, presents. Some have only one room, occupied by a great number of inmates; some have two, three, or four rooms, each occupied by a distinct and often a numerous family; in some cottages, one or more lodgers occupy the same apartment with the family, regardless of age and sex.

Encouragement derived from past successful efforts.

Great and widely extended as are these evils, morally, physically, socially, and politically considered, we are happily not without encouragement to hope that through the active operation of Christian principle, combined with an enlightened and well-directed spirit of philanthropic enterprise, as great a change will be effected in the dwellings of the working classes, as that which was brought about in the state of our prisons, mainly through the exertions of the illustrious Howard. England‡ surely cannot long allow such a contrast to exist between the comparative domiciliary comforts enjoyed by those who have forfeited their freedom as the penalty of crime, and the wretched homes from which at present too many of our labouring population are tempted to escape to the gin palace or the beer shop,§—those very portals of domestic misery and moral ruin.

---

\* These invaluable Reports bear ample testimony to the zeal and untiring energy of Mr. Chadwick in carrying on the good work to which he has been so long devoted.

† Mr. Rawlinson, the Government Inspector under the General Board of Health, assures the Author, that he believes there is not a town in Great Britain, with a population of 4000 persons, which does not exhibit a similar scene to that referred to above as witnessed by him in St. Giles's.

‡ The numerous applications made to the Society for Improving the Condition of the Labouring Classes for plans of their model dwellings, and the constant inquiries received from various parts of the country, prove that the Society has not laboured in vain; whilst it is particularly gratifying to know that our Continental neighbours and Transatlantic brethren are profiting by our example and experience, in carrying out the same plans, modified to suit their own peculiar circumstances.

§ Were the amount of evil induced throughout the country by the temptation which these places present to the labouring classes fully ascertained, and the expenses they give rise to for hospitals, for workhouses, for lunatic asylums, for police, with all the other machinery employed for the prevention and punishment of crime, summed up together, they would present an aggregate which, irrespective of the more important moral and social question, could not fail of putting aside at once all considerations of public revenue or private interest. The introduction of the monosyllable "not" in

The *practical view* of the improvement of the dwellings of the labouring classes which I desire to bring under consideration, will be most conveniently taken by first pointing out the general principles, applicable as well in towns as in the country, and afterwards by considering these two descriptions of dwellings separately.

Practical view of the subject and general principles.

The most humble abodes, whether in a town or in the country, in order to be healthy,\* must be dry and well ventilated; to secure the former, it is essential that due attention be given to the situation or locality, to the foundation, and to the drainage, as well as to the material of which the external walls and roof are constructed. To secure ventilation, there must be a free circulation of air; a sufficient number and size of openings, and adequate height of the rooms, which I should fix at not less than 7ft. 6in. to 8ft.; in town buildings I have allowed 9ft. from floor to floor. The number and area of the apartments should be in proportion to the probable number of occupants; where intended for families, there should, as a general rule, be not fewer than *three* sleeping apartments, each with a distinct and independent access; no other arrangement can secure a due separation of the sexes. The living room ought not to contain less than 140ft. to 150ft. superficial, and the parents' bed-room should at least measure about 100ft. superficial; in the latter, as a provision for sickness, a fire-place is of much importance. In every room an opening for the escape of vitiated air ought to be made near the ceiling, especially in the smaller bed-rooms for children, when there is no fire-place.

For the comfort and health of the inmates of every tenement, the protection afforded by an internal lobby or close porch is of importance, as well as the relative position of the doors and fire-places to the living room, which should be so arranged that there may be at least one snug corner free from draught. Where casement windows are used, the great difficulty which is found in the lower class of buildings of rendering them weather tight, renders it desirable that they should invariably be made to open outwards, and be properly secured by stay-bar fastenings. Zinc I have found the most satisfactory material for casements, and if the quarries are well proportioned and not too large, their effect differs very little from that of lead.

In illustrating the *general principles* which I would advocate as applicable, particularly to town buildings, it will be convenient now to refer to the dwellings erected by the Society for Improving the Condition of the Labouring Classes. This Society was established in 1844, under the patronage of Her Majesty the Queen, with the Prince Consort as its illustrious President. Influenced by the philanthropic principles so powerfully advocated by their noble chairman, Lord Ashley, and stimulated by his

Experience of the Society for Improving the Condition of the Labouring Classes.

---

the "licensed to be drunk on the premises" would certainly be a step in the right direction. One instance, which occurred recently under my own observation, strikingly manifests the evils of the present system; no sooner had a model lodging-house for single men been opened in an agricultural parish, than a beer-shop was licensed almost opposite to it.

\* For a more detailed Statement of "the Essentials of a Healthy Dwelling," see the Second Part, p. 29.



example, the committee of this Society undertook, as one most important branch of their labours, "to arrange and execute Plans as Models for the Improvement of the Dwellings of the Labouring Classes, both in the Metropolis and in the Manufacturing and Agricultural Districts." For the past five years they have been steadily engaged in presenting successive Models of Improved Dwellings adapted to the various circumstances of the Industrial Classes—a work which at the outset of the Society's labours was characterized by one of the most eminent builders in London\* as "exceedingly complicated, and which could hardly be done well, and so as to make a profit as an investment." Notwithstanding this opinion, and the advice given that the Society should limit itself to offering premiums for plans submitted in competition, and publishing such as might be most approved, it was felt that no description or reasoning, however forcible, no plans or estimates, however suitable and accurate, would be likely to make such an impression on the public as actual experiments, and the demonstration by experience that a fair return might be obtained from an investment judiciously laid out in improving the dwellings of the labouring classes.

First example of Model Dwellings at Bagnigge Wells.

With these views, the Society proceeded to build, between Gray's-inn-road and the Lower-road, Pentonville, near Bagnigge Wells, their first set of Model Dwellings† on the only eligible site of ground then offered, and which they had some difficulty in securing, owing to the adverse feeling of parties who apprehended injury to their property from the vicinity of what they regarded as likely to prove a sort of nondescript pile of pauper buildings.

The form of the site, and the unfavourable nature of the foundation for a lofty building, being newly-made ground, in some degree influenced its appropriation to a double row of two-story houses, facing each other, and on three distinct plans, to accommodate in the whole twenty-three families, and thirty single females. In their arrangement, the main object has been to combine every point essential to the health, comfort, and moral habits of the industrious classes and their families, particular attention being paid to *ventilation, drainage, and an ample supply of water.*‡

1. Nine of the families occupy each an entire house, with a living-room on the ground-floor, having an enclosed recess, or closet, large enough to receive beds for the youths of the family, two bed-rooms on the upper floor, and a small yard at the back: the rent of these houses is 6s. per week.

Adapted for giving Tenants the opportunity of becoming owners.

Such houses as these are well adapted for the carrying out a plan which has proved to be a powerful stimulant to forethought and provident habits—it is that of giving the tenants the option of paying either the ordinary rate of rent for their dwellings, or a higher rate for a fixed period, at the termination of which they become owners of the property. In the latter case, the house becomes virtually a savings'-bank to the occupier, whilst those who have built it are, without any increase of their investment, enabled to extend the benefits it is meant to confer.

2. The remaining fourteen families are distributed in seven houses, each family occupying a floor of two rooms, with all requisite conveniences; and

\* The late Mr. Thomas Cubitt.

† A view and plan of these buildings is given at pp. 88 & 89.

‡ Existing regulations of the Metropolitan Water Companies involve the inconvenience and heavy expense of double-sized cisterns, owing to the want of a regular daily supply, which, for some reasons, would be preferable to a main always charged.

as the apartments on the upper floor are approached through an outer door distinct from that leading to the lower floor, their respective occupants are thus kept entirely separate, and both floors are virtually distinct dwellings. The rent paid by each family is three shillings and sixpence per week.

A *wash-house*, with drying-ground, is provided for the occasional use of the tenants of these houses, at a small charge.

3. The centre building on the east side will accommodate thirty widows or females of advanced age, each having a room, with the use of a wash-house common to them all. The rent paid for the rooms is one shilling and sixpence per week. Subsequently, it has been thought by the Committee that this rent should have been fixed at two shillings per week.

Where space will admit of it, some modification in the arrangement of houses built after this general model would be desirable. The Society has published plans in which these alterations are embraced.\*

It may be further remarked that the use of hollow brick or tile arches in the construction of the floors in the manner hereafter to be described, would add greatly to the comfort of houses in which one family is lodged above another, and should but little, if at all, increase their cost.

In many situations where a few additional feet could be given to the width of the street, a third story, or even a fourth, might with advantage be added to the height of the houses. In such case the access to the upper stories might be from a gallery carried along the back, and approached by one or more external open staircase, similar to the arrangement of the Streatham-street houses, hereafter described; or one staircase might give access to two or more tenements on each floor.† This arrangement would obviate many of the evils to be apprehended from internal staircases common to several families, as well as secure the tenements from liability to window-tax, as it is confidently believed. In some localities an increased rent might be obtained by arranging the ground floor for small shops; the dwellings above being kept entirely distinct, in the manner just described, and of which an illustration will be given hereafter.

Encouraged by the immediate occupation of their first set of buildings, and the approval of the public, manifested by liberal contributions,‡ the Society next proceeded to exhibit a Model of an Improved Lodging House for Working Men.

It is difficult for those who have not by personal examination ascertained the state of moral as well as physical degradation, which was exhibited in the vast majority of the ordinary lodging-houses § of the labouring

\* Plans showing these alterations are given at pp. 113 & 115, and working drawings for such Buildings may be obtained at 21 Exeter Hall.

† Such an arrangement is shown at p. 117 in the lower plan, which was adopted for the Exhibition Model Houses built at the cost of H.R.H. Prince Albert, as will be seen on reference to the Appendix, p. 121. See also the plans, p. 123.

‡ In no case has the amount contributed by the public to the several model-houses of the Society been equal to its cost. The revenue, after the gradual payment of the amount borrowed for their completion, and the interest on the same, will be devoted to carrying on the general objects of the Society as prescribed by the Charter.

§ Public attention appears in the first instance to have been generally aroused to the actual state of the lodging-houses in London, by a publication of the London City

Improved  
Lodging  
House for  
Working  
Men.

classes, both in the metropolis and in the provincial towns, to imagine the extent of the evil grappled with in this undertaking.

Character of  
previously  
existing  
houses.

Many of these lodging-houses were truly described as the very hot-beds of vice and crime,—a disgrace to humanity, a reproach to the Christianity of England; and yet such sinks of iniquity and contamination were too often the abode of the young artisan on first arriving in London, or when quitting the paternal roof, and there every good principle was undermined by evil associates, until he became a pest of society, and either sank, through disease and want, into an untimely grave, or forfeited his freedom to the laws of his country.

Renovated  
Lodging  
House in  
Charles-st.

To show the practicability of effecting a great improvement in the existing lodging-houses, the Society began by taking three lodging-houses in one of the worst neighbourhoods of London—viz., Charles-street, Drury-lane.\* These they completely renovated, and converted into one house, which was fitted up with clean and wholesome beds, and all other appurtenances requisite for the health and comfort of eighty-two working men, who pay the same amount as is usually charged in the neighbouring wretched lodging-houses for a single bed—viz., fourpence per night, or two shillings per week, and cheerfully conform to the regulations of the Establishment.†

In a financial point of view, this experiment is amply remunerative, the annual return having yielded from 12 to 15 per cent. on the outlay of £1163 14s. 2d.

The main object of the Society it should be observed is, not to lower the price, but to improve the quality, of the dwellings, and in no other way to assume the position of rival landlords.

First Model  
Lodging  
House in  
George-st.

But, however valuable as an experiment, and calculated as a stimulant to produce highly beneficial results, the house in Charles-street cannot be considered as the model of what a lodging-house ought to be. The Committee therefore purchased a piece of freehold ground in George-street, Bloomsbury, surrounded by other lodging-houses, and have built on it a "MODEL LODGING-HOUSE" for 104 working men,‡ in which it has been their aim to combine everything deemed essential or valuable in such an establishment—complete ventilation and drainage; the use of a distinct living-room; a kitchen and a wash-house, a bath, and an ample supply of water; separation and retirement in the sleeping apartments; with all those conveniences which, whilst conducing to the health and physical comfort of the inmates, tend to increase their self-respect, and elevate them in the scale of moral and intellectual beings.§

The Plans fully describe the arrangement of the several floors; and the fitting-up of the principal apartments may be thus briefly stated:—The

Missionary Society, entitled "The Lodging-Houses of London," which exhibited such an appalling picture of vice and wretched degradation as to be disbelieved by many who might have found in the Reports of the Health-of-Towns' Commission sufficient to satisfy them that a concealed volcano existed in the very heart of the metropolis.

\* A view and plans of this building are given at p. 91.

† Rules adopted for the general regulation of lodging-houses are given at p. 85, in the Appendix.

‡ A view and plans of this building are given at pp. 94, 95.

§ His Royal Highness Prince Albert, in his address at Freemasons' Hall, 18th May, 1848, said, in reference to this house—"I have just come from the Model Lodging-

kitchen and wash-house are furnished with every requisite and appropriate convenience; the bath is supplied with hot and cold water; the pantry-hatch provides a secure and separate well-ventilated safe for the food of each inmate. In the pay-office, under care of the superintendent, is a small, well-selected library, for the use of the lodgers. The coffee, or common-room, 33ft. long, 23ft. wide, and 10ft. 9in. high, is paved with white tiles laid on brick arches, and on each side are two rows of elm tables, with seats; at the fire-place is a constant supply of hot water, and above it are the rules of the Establishment. The staircase, which occupies the centre of the building, is of stone. The dormitories, eight in number, 10ft. high, are subdivided with moveable wood partitions 6ft. 9in. high; each compartment, enclosed by its own door, is fitted up with a bed, chair, and clothes-box. In addition to the ventilation secured by means of a thorough draught, a shaft is carried up at the end of every room, the ventilation through it being assisted by the introduction of gas, which lights the apartment. A ventilating shaft is also carried up the staircase, for the supply of fresh air to the dormitories, with a provision for warming it, if required. The washing closets on each floor are fitted up with slate, having japanned iron basins, and water laid on.

This experiment, in providing a remedy for a great social evil, one which would recommend itself to extensive adoption, and be the means of stimulating the owners of existing houses, from self-interested motives, to improve and render them healthy abodes, was one of great practical importance. Its results speedily afforded the most powerful arguments in support of an appeal made to the Legislature for a somewhat unprecedented interference with private property—by the Act of Parliament passed in 1851 for regulating Common Lodging-houses—a measure introduced in the House of Commons by Lord Ashley, and carried by his Lordship, as Earl of Shaftesbury, through the House of Lords. It has proved the most efficacious means of ameliorating the condition of these houses, the number of which, in the metropolis alone, brought under its regulations within two years, was such, that they were occupied by not fewer than 80,000 persons, and since then the number has greatly increased.

Beneficial results of a Legislative character.

As one striking proof of the benefits resulting from this improved lodging-house system, it may be stated, that whilst the cholera was ravaging to a fearful extent the filthy and over-crowded receptacles in its immediate neighbourhood, not one case occurred amongst its 104 inmates, and but few of diarrhœa, which speedily yielded to medical treatment.

Sanitary results.

The Society subsequently fitted up in Hatton-garden a lodging-house for fifty-seven single women,\* which has been changed into a superior lodging-house for young men, and being fully occupied, it yields about 7½

Lodging House in Hatton Garden.

house, the opening of which we celebrate this day; and I feel convinced that its existence will, by degrees, cause a complete change in the domestic comforts of the labouring classes, as it will exhibit to them, that with real economy can be combined advantages with which few of them have hitherto been acquainted; whilst it will show to those who possess capital to invest, that they may do so with great profit and advantage to themselves, at the same time that they are dispensing those comforts to which I have alluded to their poorer brethren."

\* Plans of this building are given at p. 95.

per cent. on the outlay of £1077 14s. 7d. It may be referred to as the completest example of the adaptation and arrangement of an old house with all the conveniences desirable in such an establishment.

Requisites in a Model House for Families. The most important of the Society's model buildings is that now to be described. It was felt that the design of a building to accommodate a large number of families on a plan adapted to situations where the value of ground renders it necessary to occupy but a limited space, required, in a more than ordinary degree, the combination of everything worthy of imitation, with that durability and rigid economy of construction, which is indispensable in a permanent investment of capital.

The question of lodging a large number of families in one lofty pile of building has been the subject of much discussion, and in reference to it the most contradictory opinions were stated before the Health-of-Towns' Commission. Some thought it the best adapted and most economical plan to provide in one house, with a common staircase and internal passages, sufficient rooms for lodging a considerable number of families, giving them the use of a kitchen, wash-house, and other necessary conveniences, in common; others objected that such an arrangement would lead to endless contentions, and be attended with much evil in cases of contagious disease.

It must be obvious that in many localities where labourers' dwellings are indispensable, it is impossible to provide them with isolated and altogether independent tenements; and therefore, though modified by local and other circumstances, it will be found the general practice in Great Britain, as well as in the large towns on the Continent,\* for several families of the working classes to reside in one house.

The important point, then, for consideration, is, in what manner can the advantages of this economical arrangement be retained without the serious practical evils which have been referred to?

Model Houses in Streatham-st Bloomsbury. In providing for the accommodation of a large number of families in one pile of building, a leading feature of the plan should be the preservation of the domestic privacy and independence of each distinct family, and the disconnexion of their apartments, so as effectually to prevent the communication of contagious diseases. This is accomplished in the model houses for families built in Streatham-street, Bloomsbury,† by dispensing altogether with separate staircases, and other internal communications between the different stories, and by adopting one common open staircase leading into galleries or corridors, open on one side to a spacious quadrangle, and on the other side having the outer doors of the several tenements, the rooms of which are protected from draught by a small entrance lobby. The galleries‡ are

---

\* One of the most imposing buildings tenanted by the working classes is the *Albergo di Poveri* at Naples, which, in its unfinished state, when visited by the Author in 1829, contained 2600 inmates; it is six stories high, the upper being used for workshops, wherein persons of different age and sex are employed in weaving, shoe-making, tailoring, and the preparation of coral. The sleeping apartments are remarkably neat; the beds in the daytime fold up in the centre, and are covered with a cloth; above is the name, and by the side a bag for the clothes of the occupier.

† Views and plans of these buildings are given at pp. 97—100—101.

‡ The galleries may be supported by light iron columns and beams instead of brick piers and arches, which has been done in several buildings subsequently erected after this model.

supported next the quadrangle by a series of arcades, each embracing two stories in height; and the slate floors of the intermediate galleries rest on iron beams, which also carry the enclosure railing. The tenements being thus rendered *separate* dwellings, and having fewer than seven windows in each, it was confidently felt that it could not be liable to the window-tax\*—which, in a financial point of view, was a consideration of much importance—a saving of at least between seventy and eighty pounds per annum having been thus effected on the entire range of buildings.

The Plans fully describe the general arrangement of the several floors: that on a larger scale (Appendix, p. 109) exhibits two tenements or sets of apartments with their appropriate fittings, which comprise all the conveniences requisite for a well-ordered family, and include, in addition to the bed-rooms, a provision for an enclosed bed for boys in a closet out of the living-room.

The nature of the foundation rendering excavation to a considerable depth indispensable, a basement story has been formed, with a range of well-lighted and ventilated workshops; † these will doubtless prove a great convenience to some of the tenants, as will also the wash-house and bath provided for their common use, under the control of the superintendent or keeper, for whom an office is placed near the public entrance; to him will probably be also entrusted the retailing to the tenants, at low prices, coals and potatoes, for which ample stowage is provided in the basement.

The floors and roofs of these buildings are rendered fire-proof by arching with tiles or hollow bricks slightly wedge-shaped. ‡ They are 6in. deep, 4in. wide, on the top part, 9in. long,  $\frac{7}{8}$ ths to 1in. thick; the rise of the arches is from  $\frac{3}{4}$ in. to 1in. per foot on the span, and they are set in Portland cement, in the proportion of one part cement to two parts sharp sand, the tiles being well wetted before being used. The weight of the arch is 37lbs. per foot superficial; levelling up with concrete adds about 33lbs. per foot superficial.

Fire proof  
construction  
of Floors and  
Roofs.

The arrangement of the building is such as to render the floor and roof arches § a continued series of abutments to each other, excepting at the

---

\* An attempt was made to levy this tax, but on an appeal to the Judges the exemption of these houses was established, and since the removal of the window tax, freedom from liability to the substituted *house-tax* has on the same ground been maintained.

† The rooms in the basement story not letting readily for workshops, they were fitted up for families, and quickly taken at weekly rents of 2s. to 4s. per tenement, according to the extent of accommodation.

‡ Tiles resembling the form of a garden-pot, closed at both ends, have long been applied to the turning of floor arches. They appear to have been invented in France, where they are extensively employed for that purpose. The writer used them when building Fishmongers' Hall in 1833. The ceiling of St. George's Hall, Liverpool, presents the finest example of vaulting with hollow bricks. A very interesting description of it was given at the Institute of British Architects last year, by Mr. Rawlinson, C.E., whose skill had been sought in designing and executing this part of the structure after the death of Mr. Elmes, the talented architect of the magnificent building referred to.

§ Arches constructed of hollow bricks—like all brickwork of slight substance—should not be executed at a season when frost may be expected, and care should be taken that the joints are not washed out by heavy rain; their setting should on no account be let

extremities, where they are tied in with  $\frac{1}{2}$ in. iron rods, secured to cast iron or to stone springers; the latter formed with two courses of York stone, between which the tie-rods pass. The roof is levelled with concrete, and asphalted. The floors of the bed-rooms are boarded on joists 2in. square, cut out 1in. on the back of the arch, and secured to two sleepers; the remainder of the floors are in Portland cement, excepting the basement, which is of metallic lava.

In order to test the strength of this somewhat novel application of tile-arches, an experimental arch was turned about 3ft. 2in. wide, 9ft. 6in. between the points of support, and rising 7in. The abutments or springers were secured by two  $\frac{1}{2}$ in. iron rods, and left for some weeks; pig-iron was then piled on the centre, and the deflection carefully taken as follows:—3 tons,  $\frac{1}{2}$ in.; 5 tons,  $\frac{1}{4}$ in.; 6 tons, left for twenty-four hours,  $\frac{3}{8}$ in.; 7 tons, 7 cwt.,  $\frac{3}{8}$ in.; 8 tons,  $\frac{3}{8}$  and  $\frac{1}{16}$ in.; 9 tons, 4 cwt.,  $\frac{5}{8}$ in.; 9 tons, 14 cwt., broke down, the tiles cracking first at the ends through which the tension rods passed; this experiment proved that, calculating the greatest total weight, 32 cwt., which could be ever placed on such a floor if covered with people at the rate of 120lbs. per foot superficial, it would safely bear four times that weight, but broke down with six times. Owing to the difficulty of obtaining sufficient tiles, some of the narrower spaces, of 6ft. to 7ft. span, were turned with the tiles laid flatways, being 4in. deep, and others had half-brick arches.

The extra cost of rendering this building fire-proof, as well as preventing the communication of sound and all percolation of water between the several floors, by means of the tile arches, beyond the cost of construction with the ordinary combustible floors and roof, as ascertained by comparative tenders, did not exceed about 12s. per cent. on the contract for the entire pile of building, which was £7370; and, in all probability, when a regular demand arises for roof and floor arch tiles, they will be supplied at such a price as to allow of their use without any extra cost.

The Society undertook, on the completion of this building, to raise one other pile of model town dwellings, with money placed at its disposal from thanksgiving-offerings\* for the removal of the cholera; and with this view purchased an eligible freehold site in Portpool-lane, Gray's-inn-lane. The Plan of the Buildings, which with a more detailed description is given at

Thanksgiving  
Model  
Buildings,  
Portpool-  
lane.

---

as task-work. A thoroughly solid foundation is indispensable for all buildings where arching enters into the construction. The Appendix contains some further details in reference to hollow bricks, and their application to the dwellings of the labouring classes, with a section of an arched floor and roof, pp. 80—82.

\* The raising of this fund is attributable to the following suggestion of the Lord Bishop of London, in a Letter addressed to the Clergy of his Diocese, previous to the day appointed for national thanksgiving for the removal of the cholera, Nov. 15, 1849. His Lordship writes—“I venture to recommend that the alms then collected should be applied to the promotion of some well considered plan for improving the dwellings of the labouring classes. I would not be understood to prescribe the channel through which the collections should be so applied; but I would suggest that, where the funds so raised are not sufficient for carrying out a local scheme for that purpose, they may be safely entrusted to ‘The Society for Improving the Condition of the Labouring Classes,’ without fear of misapplication or waste. Much good has been already effected by that Society in setting an example of what may be done towards providing the poor with decent and commodious habitations, by an outlay which will ultimately be repaid with interest, both in a

pages 104 and 105, exhibits an arrangement adapted to the circumstances of a portion of the labouring classes not provided for in the Society's other model dwellings, and combines with 20 tenements for a poorer class of families, apartments for 128 single women, and a public wash-house.

As it is my desire to take a comprehensive view of the subject under consideration, and to point out—more especially to the junior members of the Institute—any practical defects in arrangement which experience has brought under my observation, I will proceed to notice some of the principal dwellings for the industrial classes which have been built since the establishment of the Society for Improving the Condition of the Labouring Classes, in 1844.

Motives for pointing out practical defects.

The first, in point of time, are the lofty and imposing piles of workmen's dwellings raised at Birkenhead,\* for 324 families, four stories high, and of fire-proof construction. There is much to commend in this early effort to provide suitable dwellings for the working classes; but in several important points there appears to me such great room for amendment, and experience has so fully confirmed my original impression with reference to the plans of these buildings, that I venture to refer to a Report made on them, under date May 1, 1845, and addressed to Lord Ashley, whose opinion had been requested by an influential gentleman interested in the undertaking.

Workmen's Dwellings at Birkenhead.

“The Sub-Committee on Dwellings of the Society for Improving the Condition of the Labouring Classes, have taken into consideration the plans transmitted by your lordship, for the residence of labourers employed on the Birkenhead Docks, and beg to make the following observations respecting them:—

Report of a Sub-Committee.

“1st. The width of the proposed avenues is only 18ft., whilst the houses are designed to be nearly 40ft. in height. Under the new Metropolitan Building Act, the width of such avenues ought to be not less than the height of the buildings, 40ft. Waiving, however, the application of this Act as a conclusive test, we are of opinion that, with a view to secure good ventilation, and free access for the sun, the width of the avenues should be at least 30ft., more particularly as the disposition of the greater part of them is such as to preclude that thorough circulation of air which would have been obtained by a free and unobstructed opening at each end.

“2nd. The general arrangement of the houses appears to be good; and although the height of the rooms is ample, yet in other respects the scale of building is decidedly less than the Committee can approve. All

---

social and a pecuniary point of view. It is a remarkable and encouraging fact, that in the dwellings and lodging-houses belonging to the Society there was not one case of cholera, and two only of diarrhoea, which speedily yielded to medical treatment.”

The total amount received for these buildings from church collections was about £2500; and from donations direct to the Society, about £2810.

\* A plan of two tenements in these buildings is given at p. 109.



the rooms are small, particularly those for sleeping, which measure only 9ft. 6in. by 7ft., and 9ft. 6in. by 6ft. It should further be observed, that the want of a provision for the placing a bed in a recess out of the living-room, precludes, in case of the dwelling being occupied by a family, the possibility of a due separation of the sexes.

“In reference to the dust-shaft, the greatest care will be requisite to provide for the escape of gas from the decomposed matter in the dust-cellar, which would otherwise ascend and find its way into the dwelling.

“No specific plan for ventilation being described, it is impossible to offer any opinion on this most important point, but it is highly necessary that some efficient means should be adopted for this purpose, and more particularly for carrying away the noxious products of combustion arising from the gas-light.

“We are,

“Your Lordship’s very faithful servants,

“WILLIAM DENISON, Capt. Royal Engineers.

“HENRY ROBERTS, Architect.

“JOSEPH TOYNBEE, F.R.S.”

These buildings have been completed upwards of three years, and it was with much regret, when visiting Birkenhead in October last, that I found them tenantless, owing doubtless, in a considerable measure, to the suspension of the Dock-works in contemplation when they were erected; yet being within accessible distance to a numerous and increasing working population, I apprehend another cause may be, that the gloomy appearance of the narrow alleys, on the pavement of which, in general, the sun can never shine, has had a repulsive tendency. At no great distance, a single pile of workmen’s houses,—for sixty-four families,—called “Morpeth Buildings,” has been erected on the same general plan, consisting of double houses, four stories high, with central staircase, giving access, on each landing, to two sets of apartments. These houses are not fire-proof, but enjoy the advantage of unobstructed light and air; they are near to the occupations of the tenants; are always full; and prove a great boon to the inmates, who willingly pay a rent of 2*s.* 6*d.* per week, with 3*d.* additional for gas-light.

The Metro-  
politan Asso-  
ciation Build-  
ings in Old  
Pancras.

The Metropolitan Association for Improving the Dwellings of the Industrious Classes was incorporated by Royal Charter in October, 1845, and their first range of dwellings, built in the Old Pancras-road,\* for the accommodation of 110 families, was opened for reception of the tenants, early in 1848. These buildings—from the designs of Mr. Moffet—present an extended and imposing front of about 226 feet, with advancing wings, and are five stories high. The sub-division into distinct double-houses, with a central stone staircase to each, is similar to that of the Birkenhead buildings. They are not fire-proof, but have the advantage of larger-sized apartments, and unobstructed light and air. The internal staircase arrange-

---

\* A plan of two tenements in these buildings is given at p. 111.

ment involves them equally in the heavy charge of window-tax,\* which, on the whole pile of buildings, amounts to 15*l.* 16*s.* per annum. These dwellings have been constantly occupied since their completion, and the most gratifying evidence has been given of the change produced in the health and comfort of the tenants, by their improved and salubrious abodes.

The second undertaking of the Metropolitan Association has been the building, in Spitalfields, of a lodging-house for 234 single men, with dormitories arranged on a similar plan to those in the George-street, Bloomsbury,† lodging-house, opened in 1847; the living-room accommodation is more extensive and costly, as it comprises a coffee-room 45ft. by 35ft., a kitchen 46ft. by 21ft. 9in., a lecture-room 35ft. by 21ft. 9in., and a reading-room 25ft. by 21ft. 9in. This building is just completed, from the designs of Mr. W. Beck; the charge for each lodger has been fixed at 3*s.* per week, whilst that in George-street,‡ Bloomsbury, is only 2*s.* 4*d.* per week; it remains to be seen whether the extra payment beyond 4*d.* per night, the usual charge for lodgings for single men, will be paid for such increased accommodation. It may also be questionable how far the class of men for whom lodgings in such a neighbourhood are chiefly needed, will be really benefited by the luxuries here provided, and which but few men in full employment can have much time for enjoying. It should, however, be observed, that the proximity of this establishment to the spacious range of dwellings for families, building by the same Association, affords the opportunity of appropriating to the use of the occupants of those dwellings, at fixed hours of the day, some of the accommodation afforded in this building, and thus turning to good account what might otherwise be surplus accommodation.

Buildings in  
Albert-street  
Spitalfields.

The internal plan of these dwellings for families is similar in general disposition to those in the Old Paneras-road, see plan, p. 111, the relative position of the door and fire-places in the living-rooms is better than in the latter buildings, but the entrance under the centre of the staircase, from apparent want of height, is unsatisfactory. The construction of the floors,

---

\* After many fruitless attempts to obtain its remission, as well as that of the house-tax, when substituted for that on windows, the Treasury, in June 1866, authorized the exemption of such dwellings from the inhabited house duty. See Appendix, p. 72.

† The Sailors' Home, in Well-street, London Docks, must in some respects be considered the prototype of the improved lodging-houses. It was opened in 1835; and the cost of fitting up the last dormitory was defrayed at the sole expense of her lamented Majesty the Queen Dowager, a munificent patroness of the Labouring Classes' Improvement Society. This admirable establishment, which will now lodge 300 inmates, is, with the Destitute Sailors' Asylum in the same street, a monument of the self-denying and devoted energy of the late Captain R. J. Elliot, R.N. As the latter building—to which the writer had the pleasure of acting as honorary architect in 1835—may be useful in suggesting arrangements suitable for a class below that of ordinary labourers, and not within the range of the designs carried out by the Society for Improving the Condition of the Labouring Classes, such as Ragged-school boys, or nightly lodgers, known as trampers, plans of it are given in the Appendix, p. 107. The addition of a second floor would provide for the nightly separation of the sexes in a caravansary lodging-house, a description of building much needed in all our towns, and even in many villages.

‡ The charge at George-street has been subsequently raised to 2*s.* 6*d.* per week for 44 of the Dormitories, and 3*s.* per week for 60.

originally intended to be on the ordinary plan, has, since the contract was taken, been changed to the fire-proof plan of Messrs. Fox and Barret.

Metropolitan Association based on sound principles.

The Metropolitan Association,\* by which these dwellings have been built, is established on the sound, and, indeed, only principle upon which it can be reasonably expected that an extensive improvement in the dwellings of the labouring classes in towns should be effected—viz., that of an investment of capital, with the prospect that, under good management, a fair return of interest on the outlay will be obtained. More can scarcely be expected from a benevolent public than funds sufficient, with careful economy, to effect the important object contemplated by the Society for Improving the Condition of the Labouring Classes—viz., the erection and completion of one model of each description of building required to meet the varied circumstances of the labouring classes, and at the same time the demonstration that such buildings may, with proper management, be made to yield a fair return on the outlay.

Family Houses built in Glasgow.

In Glasgow, a dwelling-house of four stories, arranged to accommodate thirty-one families, has been built, with a benevolent view, by Mr. James Lumsden. The tenements are ranged on either side of a central passage, which communicates with the common staircase, and is lighted at the ends. Each tenement consists of one apartment, with a single window, two bed-closets, and a scullery, separated from the main compartment by partitions seven feet high. A water-closet, with a dust-shaft, is placed immediately within the entrance door, having no perceptible means for ventilation. Very questionable as this arrangement must be, regarded in a sanitary point of view, it is chiefly referred to as a forcible illustration of the impediment offered by the window-tax to the proper construction of large piles of labourers' dwellings on the ordinary plan of arrangement. In these tenements three windows should have been provided where there is one only.

The policy of continuing a tax which so greatly conduces to augment the evils of an over-crowded dwelling, and at the same time presents a

---

\* The claims of this Association on public support were most powerfully advocated in the eloquent address of the Earl of Carlisle at the opening of the lodging-house in Spicer-street. "Let it be proved," said his Lordship, "that the act of doing good, in however unpretending and common-place a manner, to large masses of the struggling and impoverished, would pay its own way, and ensure its fair profit, and it would follow that benevolence, instead of being only an ethereal influence in the breasts of a few, fitful and confined in its operations, would become a settled, sober habit of the many; widening as it went, occasioning its own rebound, and adding all the calculations of prudence to all the impulses of generosity."

A well-devised parliamentary enactment, † which would facilitate the formation and general management of independent local associations, conducted on the principle of a joint-stock company, with limited liability, would doubtless greatly facilitate the extension of these improvements. At present the expense and difficulty of obtaining a charter operate as a serious barrier. Let these be removed, and there would then be no excuse for corporate and other public bodies declining to take up the subject in real earnest.

---

† Subsequent legislative enactments have afforded the facilities so greatly needed when this note was first published.

serious barrier to their improvement, by diminishing the fair return from such investments, can scarcely be matter for question.\*

Besides the new buildings to which reference has been made, the spirit of improvement has in several places manifested itself by the re-modelling of old buildings,† and fitting them up, as near as circumstances will admit, on an improved and sanitary plan, so as to render them healthy and comfortable abodes. That improvements of this description might be effected to a very great extent, with immense advantage to the working classes, and a remunerative return to those who undertake them with judgment, and who do not shrink from the trouble which they involve, the experience of the Society for Improving the Condition of the Labouring Classes has clearly demonstrated.

In adapting and fitting up old buildings, as well as in erecting new ones, experience has also taught the importance of a judicious selection of the locality, which should not be too far removed from the daily occupations of the expected tenants, nor should they be in close contact with the residences of a much higher class in society.‡

In reference to new buildings for the labouring classes, the most rigid economy of arrangement, consistent with accommodation sufficiently spacious, should be convenient and healthy, and the utmost attention to cheapness of construction, consistent with durability§ and comfort, are essential elements of a really good and suitable plan. The Architect should bear in mind that the rents which the working classes usually pay, though exorbitantly high for the wretched accommodation afforded them, will only just yield a fair return for the outlay on buildings constructed for their express use, and fitted up with all the conveniences which it is desirable they should possess. Any expenditure on unnecessary accommodation, which involves an increase of rent beyond that usually paid by the occupants of such a class of dwellings, appears to be at least hazardous, and may jeopardize the whole, or a portion of the interest to be fairly expected from the investment.

Renovated  
old build-  
ings.

Selection of  
Localities.

Necessity for  
rigid eco-  
nomy.

---

\* The removal, since the above was written, of the tax on windows and on bricks is perhaps the most important concession made to the public call for sanitary amelioration.

† The proprietors of old lodging-houses, and of tenements rented by the working classes, have, from self-interested motives, also begun to put their houses in order, and complain that lodgers are now not content without the conveniences and comforts provided for them in the model dwellings. Thus a most wholesome spirit of rivalry has already commenced its leavening influence.

‡ In a provincial city, an improved lodging-house for single men was fitted up, several months since, with every suitable accommodation for between thirty and forty inmates, but has never had above four or five lodgers. This is to be attributed to the locality being too good for the class of persons intended to be benefited; and probably the selection, for a superintendent, of a person formerly in the police, has had a repulsive tendency.

§ The interior fittings of such buildings should be as indestructible as possible; iron pipes should be used instead of lead, and the ironmongery generally ought to be of special strength and simplicity.

Dwellings in  
country dis-  
tricts.

The remaining branch of the subject, on which I have now to speak more particularly, is that of labourers' dwellings in agricultural or country districts; and whether we regard it, in its moral and social relations—in its bearing on national stability or prosperity, or even in the infinitely less important, though more artistic, light in which it may be viewed as associated with the attractive charms of English landscape, much might be said. Assuming, however, the great necessity for improvement, and proposing as my chief object practical utility, I will not dilate on these topics, but merely offer the passing remark, that fitness of style, justness of proportion, and internal comfort, are perfectly consistent with picturesque effect, and with that strict economy of construction which is indispensable in cottage architecture adapted for the masses of the people.

Example set  
by J. Howard.

The attention of landed proprietors has often been directed to the necessity for the improvement of labourers' cottages, and in not a few instances the entire aspect of a village and a neighbourhood has in this respect been completely changed by the well-directed efforts of a single landlord. Illustrations might be drawn from the example set by many noble and wealthy proprietors: in the first instance I will cite a case which shows how, with comparatively limited means, much good may in this way be effected. Mr. Dixon's recently published Memoir of John Howard records, that "when he first went to reside at Cardington, in Bedfordshire, about 1756, he found it one of the most miserable villages which could have been pointed out on the map of England. Its peasant inhabitants were wretchedly poor, ignorant, vicious, turbulent, dirty. \* \* \* With his characteristic energy and earnestness, Howard set himself, within the sphere of his own competence and influence, to ameliorate their condition both in a worldly and spiritual sense. Beginning with his own estate, he saw that the huts in which his tenantry, like all others of their class, were huddled together, were dirty, ill built, ill drained, imperfectly lighted and watered, and altogether so badly conditioned and unhealthy, as to be totally unfit for the residence of human beings. He resolved to begin his work at the true starting point, by first aiming to improve their physical condition—to supply them with the means of comfort, attaching them thus to their own fireside, the great centre of all pure feeling and sound morals—to foster and develop in them a relish for simple domestic enjoyments."

"His first step, in furtherance of these objects, was obviously a wise one, that of rendering the *homes* of the poor, dwellings fit for self-respecting men. This must indeed be the starting point of every true social and industrial reformation. In carrying his plan into effect, Howard does not seem to have troubled himself much about that paramount question, the per-centage. Though an arithmetician and a man of business, he considered that his wealth was merely held in trust for the benefit of mankind, and consequently he had no hesitation in investing it with a view to returns rather in the shape of order, virtue, intelligence, and happiness, than in money."

"Having decided that the miserable mud huts in which he found his cottagers living should be taken down, he carefully selected some good and convenient plots of ground, on which he caused a number of very superior cottages to be built, and transferred into them such persons as he most strongly approved of for tenants. His absolute requirements were—habits

of industry, temperance, and observance of the Sabbath. The doctrinal opinions of his tenants he did not interfere with."

In now directing your attention to the very important communication on the dwellings for agricultural labourers made by his Grace the Duke of Bedford, through the Royal Agricultural Society, in a letter addressed to the Earl of Chichester,\* President of that Society for the past year, I feel assured that it will not be deemed unsuitable for me to quote such high authority on the obligations of landed proprietors.

Letter from  
the Duke of  
Bedford.

"Cottage building," writes his Grace, "except to a cottage speculator, who exacts immoderate rents for scanty and defective habitations, is, we all know, a bad investment of money; but this is not the light in which such a subject should be viewed by landlords, from whom it is surely not too much to expect, that while they are building and improving farm-houses, homesteads, and cattle sheds, they will also build and improve dwellings for their labourers, in sufficient number to meet the improved and improving cultivation of the land.

"To improve the dwellings of the labouring class, and afford them the means of greater cleanliness, health, and comfort in their own homes; to extend education, and thus raise the social and moral habits of those most valuable members of the community, are among the first duties, and ought to be among the truest pleasures, of every landlord. While he thus cares for those whom Providence has committed to his charge, he will teach them that reliance on the exertion of the faculties with which they are endowed, is the surest way to their own independence and the well-being of their families.

"I shall not dwell, as I might, on the undeniable advantages of making the rural population contented with their condition, and of promoting that mutual good-will between the landed proprietor and the tenants and labourers on his estate, which sound policy and the higher motives of humanity alike recommend."

Such are the admirable principles laid down by his Grace. Their practical echo from the halls and the mansions of our nobility and landed gentry would speedily effect the much needed change.

I have lately had the pleasure of examining a considerable number of the new cottages recently built, with judgment and great care†, on the Duke's Bedfordshire property, which already exceed 100; and it is the intention of his Grace gradually to continue the rebuilding of decayed tenements in the same county, until 300 more are erected. The building establishment at Woburn Abbey is on a princely scale, comprising extensive machinery, worked by a steam-engine of twenty-five horse power, and providing employment for 200 workmen. In Devonshire the Duke is carrying out the same spirit of improvement, to the extent of sixty-four cottages.

The Duke of  
Bedford's  
Cottages.

\* The attractive appearance of the cottages on the Sussex estate of the Earl of Chichester will be remembered with pleasure by many, not only as conducing to the picturesque beauty of Stanmer Park, but also as evincing a kind consideration for the comfort of their occupants.

† The Plans of these cottages have been published, and an interesting account of them was given in a pamphlet by the Rev. C. H. Hartshorne, entitled "The System of Building Labourers' Cottages pursued on the estate of his Grace the Duke of Bedford."

Example followed by others.

The example thus nobly set by the Duke of Bedford has been speedily followed by his Grace the Duke of Northumberland. Many other great proprietors have also undertaken the same good work, which, if it do not return a full per-centage on the outlay, cannot fail to be *repaid* by those feelings of increased contentment and goodwill which are the best bonds between a landowner and the peasantry on his estate.

Plans for Agricultural Cottages.

The designing of improved dwellings for agricultural labourers, arranged on the most economical plan, with proper regard to the health and comfort of the occupants, has been repeatedly made a subject for architectural competition. In most instances the result would have been altogether unsatisfactory, but for the communications elicited from landed proprietors whose attention had been practically directed to the subject: such, for instance, are the plans of the Marquis of Breadalbane's cottages, published in the volumes for 1843, 1845, of the Transactions of the Highland and Agricultural Society of Scotland; and the plans of the Duke of Bedford's cottages, published in the Journal of the Royal Agricultural Society, for July 1849.

The same number of this Journal contains the competition design to which the first premium of fifty sovereigns was awarded by that Society, in the spring of 1849. In reference to this design, a recent talented and discriminating writer\* on labourers' cottages remarks, "I can only say, that I hope no one of its many influential members may be led—by the sanction of the Society—to build after this model."

Published Plans for Cottages.

To facilitate the adoption of plans which combine in their arrangement every point essential to the health, comfort, and moral habits of the labourer and his family, with that due regard to stability and economy of construction, which is essential to their general usefulness, the Society for Improving the Condition of the Labouring Classes published, and have circulated extensively, a series of designs for Cottages,† prepared with these special objects in view.

These plans have lately been revised, and are now republished, with the addition of others designed on the same general principles, but with such variations as will afford not only a greater choice in the number and disposition of the apartments, but also in the external elevation; so that where many cottages are built near to each other, a considerable variety may be obtained by a judicious selection and grouping. It must be obvious, however, that owing to the difference of material used in various parts of the country, no set of designs could be arranged so as to be suitable to all circumstances; hence it has been deemed advisable to adapt the arrangement of these designs to the material in which they will probably be most frequently built. Although, for this reason, brick has been selected, the designs may, with some alterations in the thickness of the walls, be executed equally well in stone, or in flint, with quoins and dressings of brick or stone.

With a view to economy, as well as for other reasons which it is unnecessary to detail, the dwellings generally are designed in pairs, care

\* The Rev. T. James, of Theddingworth, Northampton.

† Terms and agreements for letting cottages are given at p. 86.

being taken to prevent, as far as possible, the interference of adjoining families with each other, by placing the entrance doors at the opposite extremities of the cottages, whilst, by carrying up the chimney-stack in the centre, the greatest possible amount of warmth is obtained from the flues.

Each dwelling consists of a living-room, the general superficial dimensions of which are about 150ft. clear of the chimney projection. A scullery, containing not less than about 60ft. or 70ft. superficial, which is of sufficient size for ordinary domestic purposes, without offering the temptation to its use as a living-room for the family; besides a copper, and in some cases a brick oven, provision is made for a fire-place in all the sculleries, by which arrangement the necessity for a fire in the living-room through the summer is avoided. A pantry for food, a closet in the living-room, and a fuel store out of the scullery, are provided in all the cottages.

The sleeping apartments, in conformity with the principle of separating the sexes, so essential to morality and decency, are generally three in number, each having its distinct access; their dimensions somewhat vary—the parents' bed-room in no instance contains less than about 100ft. superficial, whilst the smaller rooms for the children average from 70ft. to 80ft. superficial. The height from the ground floor to the first floor is 8ft. 9in., giving nearly 8ft. clear height for the living room. The bed-rooms are 7ft. 9in. where ceiled to the collar pieces, and 4ft. to the top of the wall-plate, which, for the security of the roof, is in no case severed by the dormer windows.

Although these designs generally provide three bed-rooms, yet, as in some cases, without any infringement of decorum, a less number of sleeping apartments would be better suited to the wants and circumstances of the occupants, and the temptation to take in lodgers be avoided, three of the designs are arranged with a smaller number of bed-rooms.

Where circumstances render it desirable that the occupants of cottages should be allowed to take in a lodger, the chief evil to be deprecated may, in some measure, be guarded against, by separating his sleeping apartment entirely from those of the family; with this view the Design No. 7 has been arranged with a bed-room on the ground floor, available either for a lodger or for the boys of the family, whilst the first floor is exclusively appropriated to a bed-room for the parents and one for the girls. The rustic porch to this design formed with rough timber, would be ornamental, and, at the same time, inexpensive; it might be applied equally well to some of the other designs, or may be omitted at pleasure.

The several designs may be thus briefly described (see Lithographic Drawings at the end of the Appendix):\*

*Suggestions for the Picturesque Grouping of Double Cottages:—*

No. 1. Double Cottages with one bed-room.

No. 2. Ditto, with two bed-rooms.

Nos. 3, 4, 5, 6. Double Cottages, each with three bed-rooms; varying in internal arrangement and external elevation. The cost of the

---

\* Working drawings, with a specification and bill of quantities of most of these designs, are published by the Society, and may be obtained of the Secretary, at 21, Exeter Hall.



three latter of these cottages would progress in the same relation to each other as their numbers, but not in like proportion.

- No. 7. Double Cottages, with three bed-rooms; two on the upper and one on the ground floor, suited for a lodger or for the boys of the family.
- No. 8. Double Cottages\* for four families, with two sleeping apartments to each; two of these tenements are on the ground floor, and two above, with separate entrances, and distinct domestic conveniences. Hollow brick or tile arches tied with iron rods might advantageously be used for the intermediate floors of these cottages.
- No. 9. Two Single Cottages, with three bed-rooms, suitable for Gato Lodges; more ornamental and expensive in design than any which have preceded them.
- No. 10. A Lodging House for 14 or 16 unmarried workmen or labourers; adapted to Agricultural, Mining, and Quarry Districts, with apartments for a married superintendent.
- No. 11. Elevation of Design No. 5; showing a variation in the gable and dormer coping, with flint wall facing, brick dressings, and quoins. These alterations are equally applicable to any of the preceding designs. This plate also contains three Plans with two elevations for such out-buildings as are considered indispensable in some counties. One plan is with, the other two without, a piggery. Where the closets are in detached out-buildings, the space allotted for them in the main building will be useful for agricultural implements, &c.
- No. 12. Double cottages similar to No. 6, in general arrangement, but more commodious in the entrance, staircase, &c., and with an alternative elevation.

Lodging-  
house for  
Labourers.

The Lodging-house for unmarried Workmen or Labourers is intended to provide a comfortable, cheap, and healthy abode, free from the temptations to vice and immorality which beset the inmates of a crowded cottage, where, without regard to age or sex, the married and the unmarried too often herd together and contaminate each other. The youth who quits the parental cottage, from its want of accommodation for a growing family, or from the desire of independence, would find in such a house those comforts which the unmarried labourer rarely enjoys, and to attain which he too often marries improvidently. Instead of passing his evenings at the beer shop, he would be led to seek both amusement and instruction in the pages of a selected Library, placed under the care of the superintendent; or his leisure hours might be profitably employed in an allotment garden, if an acre to an acre and a half of ground could be thus devoted.

The number of lodgers which the proposed plan will accommodate may be either fourteen or sixteen, as two of the compartments will contain two beds; under ordinary circumstances, it would be preferable to build a second house rather than to increase its size to any considerable extent.

---

\* Double cottages for four families, with *three* sleeping-rooms to each tenement, may be arranged with an open staircase between them, similar to the plan described at p. 7, of which H.R.H. Prince Albert's Exhibition Model Houses is an example; see the Appendix, pages 117, 121, & 123, and the Windsor Royal Society's Cottages, page 130.

The arrangement provides on the ground floor two sets of apartments, one intended for the superintendent and his wife; the other, for the lodgers, comprises a living room, fitted up with tables and benches, a kitchen, with a pantry having a separate, secure, and well-ventilated safe for the food of each inmate; a fuel store, with depository for implements of tools, would be at the back.

The whole of the upper floor is occupied by the dormitory, which is sub-divided by wooden partitions, six feet six inches high, into fourteen compartments, each 8ft. 6in. by 4ft. 8in., having its own window, with a door opening from the central corridor, and being fitted up with a bed, a flap-table under the window, a stool, and a locker or clothes-box. The ventilation of the upper part of the dormitory is effected by openings over the windows in the gable walls.

The rent charged must in some measure depend on local circumstances; but it is scarcely to be expected that such accommodation can be provided for less than 2*d.* per day, or 14*d.* per week; in some places 18*d.* or even 2*s.* would not be too high a charge. Punctual payment must be strictly enforced; and the occupation should be by the week, subject to such rules\* as may ensure the order and comfort of the inmates.

The cost of Cottages,† built in a substantial manner, in the country or in the neighbourhood of London, must depend so much on the price of materials, as well as the expense of labour and cartage, that no amount can be stated which would guide with accuracy under such varying circumstances. Information of the actual cost of cottages built after the Society's plans is received with thankfulness, and may be of service to other cottage builders.

Cost of Cottages.

Some practical suggestions on the most important points connected with Cottage building may be a useful termination to the preceding remarks.

Practical Suggestions.

In reference to situation, where it is practicable the front should have somewhat of a southern aspect, the embosoming in trees should be avoided, and particular attention ought to be paid to secure a dry foundation: where this is not otherwise obtainable, artificial means should be adopted by forming a substratum of concrete, about twelve inches thick, or by bedding slate in cement, or laying asphalte through the whole thickness of the wall under the floor level. The vicinity of good water and proper drainage are points of obvious importance. A gravelly soil is always preferable to clay, and a low situation is seldom healthy.

It is desirable that every cottage should stand in its own enclosed garden of not less than about one-eighth of an acre, and have a separate entrance from the public road. One well may generally be made to answer for two or more cottages, and it is of great importance that it be so placed as not to be liable to contamination either from the drains, cesspools, or liquid manure tank; the latter should, however, invariably be made water-tight, the cost of which will soon be repaid to the tenant by its fertilizing products.

As respects the material used in the external walls of cottages, much

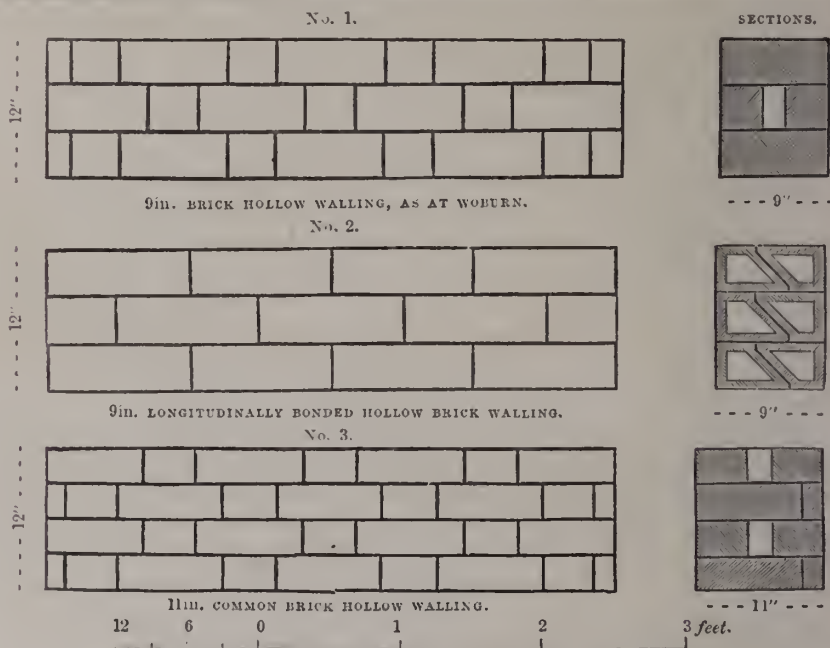
\* Rules for the guidance of the superintendent, as well as for the lodgers, are given at pp. 84 and 85.

† The contract cost of cottages built by the Royal Windsor Society is given at p. 125.

Material of  
External  
Walls.

must depend on local circumstances, and the facility for obtaining the various kinds of natural or artificial substances adapted to the purpose.

The designs published by the Society have, for the reasons previously stated, been wholly arranged for brick, but by increasing the thickness of the external walls they will be equally well adapted for cottages built with other materials. The external walls are described as 9in. thick, and when built of this substance, in order to secure their dryness,\* unless the bricks are unusually impervious to moisture, it is strongly recommended that they should be hollow; this may be effected by three methods, two of which require that the bricks be made on purpose. The plan No. 1 has been used to some extent; and unless where the bricks are so porous as to cause a transmission of moisture through the heading courses, this plan will be found to answer, rendering the walls drier and cheaper than when built in the ordinary way. Three courses, with the joints, rise 1ft., the bricks being  $3\frac{1}{2}$  square; they are of the ordinary length—viz. 9in.



Process for  
curing damp  
walls.

\* The following description of a process which has been successfully applied for rendering brick and porous stone impervious to wet, may be useful:—"Dissolve mottled soap in water, in the proportion of three-quarters of a pound to a gallon of water, and to the surface apply with a large brush this mixture, which, in order to its liquid state being retained, must be kept heated. At the expiration of twenty-four hours the application of this wash is to be followed by a second, composed of half-a-pound of alum, thoroughly dissolved in four gallons of water. In order to avoid the disturbance of the soap deposit, this solution is best applied with a syringe or common water-can, having a finely perforated hose. The alum uniting with the fat, produces an insoluble compound, which, entering into and adhering to the absorbing surface of the material, a composition of alumen soap is formed, which has the property of repelling water. Another process for CURING DAMP WALLS has been thus described in "*The Builder*:"

The other plan, No. 2, is that of hollow bricks made wedge-shaped, and bonded longitudinally over each other, so that two cavities run parallel through every course of bricks, giving a double security against moisture, as the joints are all broken, and there are no headers to pass through the wall; the rise of these bricks is also three courses to the foot,\* and they are 12in. long, which diminishes the number of joints, and gives greater boldness to the work, more resembling stone in effect. These bricks may be easily made with any tile machine at the same or at a small cost per thousand above that of sound common stocks; whilst from their increased size, which adds but little to their weight, nine of them will be found to do the same number of cube feet of walling as sixteen ordinary stocks. The saving in mortar is full 25 per cent., and the labour, to an accustomed workman, considerably less than to ordinary brickwork; whilst great facility is afforded by the cavities both for ventilation and warming. It should be added, that the bricks for the quoins and jambs may be either solid or perforated perpendicularly.

Where it is impracticable to obtain bricks made according to either of the forms above described, the walls may be built hollow, 11in. wide, with common bricks (see Plan No. 3); a cavity of 2in. being left in the centre, and the length of the headers made up with 2-inch closures, every course would bond, and a dry wall be secured.

Where flint or concrete is used, walls of either material cannot be less than 12in. thick; they may be lined † with the longitudinal bonded hollow brick, which would bond every course, and contribute to the dryness of the wall, see p. 81.

Walls of  
Flint or of  
concrete.

Concrete walls are composed of gravel, lime, and sand, and they are worked up between two planks on a frame, within which the concrete is poured; they may be "spalshed" over outside, which gives them a neat

—"Boil two quarts of tar with two ounces of kitchen grease for a quarter of an hour in an iron pot; add some of this tar to a mixture of slaked lime and powdered glass which have passed through a flour sieve, and been dried completely over the fire in an iron pot, in the proportion of two parts of lime and one of glass, till the mixture becomes of the consistence of thin plaster. This cement must be used immediately after being mixed. It is not well to mix more at a time than will coat one square foot of wall, as it quickly becomes too hard for use, and continues to increase its hardness for three weeks. Great care must be taken to prevent any moisture from mixing with the cement. For a wall that is merely damp, it will be sufficient to lay on one coating of the cement, about one-eighth of an inch thick; but should the wall be more than damp, or wet, it will be necessary to coat it a second time. Plaster made of lime, hair, and plaster of Paris, may be afterwards laid on the cement. This cement, when put in water, will suffer neither an increase nor diminution in its weight."

\* If these bricks are made the ordinary height of course, or 2½in., they will bond in with common bricks for the quoins.

† The lining of rubble stone walls with tile was common in Roman buildings; the Colosseum may be instanced as an example, where much of the inner wall is constructed of rubble, and faced with tile, which has been covered with slabs of different coloured marble. Behind these tiles are inducts containing circular earthenware pipes for conveying the water from the top of the building. At Pompeii, a hollow tile was in some instances used for securing a dry surface to receive the fresco paintings.

appearance. Concrete formed with clean coarse gravel, sharp sand, and  $\frac{1}{10}$ th portion of Portland cement, would make a substantial wall.

Chalk Walls. Chalk has been used for the walls of cottages in some districts with satisfaction, and when hardened by immersion in silicate of potash, its value as a building material is increased. The artificial stone introduced by Mr. Ransome is a chemical combination of materials, which, when brought to maturity, may be available for the construction of cottages and their appendages.\*

Stone Walls. Where the walls are of stone, their dimensions must be increased externally to not less than eighteen inches, and in such case six inches should be added to the height of the roof, to preserve its proportions.

The main partitions on the ground floor should be of brick: hollow bricks, where obtainable, may with advantage and economy be used for this purpose; in either case, they are stronger when set in Roman or Portland cement. Where the upper floor partitions stand perpendicular over those to the ground floor, brick or tile is decidedly preferable to wood. Partitions formed with hollow bricks may in many cases be carried on a strong binding joist. Stairs may also be made of fire-brick clay, with great advantage and economy.

Floors. The ground floor should be raised not less than six inches above the external surface, and where wood floors are used they ought to be ventilated by means of air-bricks built in the external walls. The warmest and most economical floor is probably that formed with hollow bricks.† In some parts of the country lime and sand-floors are pretty generally used, and found to last, when well made, upwards of forty years. The following description of the mode of working them may be useful:—A foundation or substratum should be prepared, about six inches thick, with coarse gravel or brick-bats and lime-core, well beaten to a level surface; in damp situations, tar may be added to this concrete, on which is to be laid the lime and ash floor, thus prepared—Take good washed sand, free from all earth and small stones, together with the ashes of lime, fresh from the kiln, in the proportions of two-thirds of sand and one-third of lime ashes, (where obtainable, the substitution of one-third portion of smiths'-ashes, or pounded coke, for one-half of the sand, increases the durability and hardness of the floor). Mix the sand and lime ashes well together, and let them remain in a body for a fortnight, in order that the lime may be thoroughly slaked; then temper the mortar, and form the floor with it three inches thick, well floated, and

---

\* No particular reference is made to Pisé, mud or cob walls. In some counties they are said to answer. The Author has seen them much used in Devonshire, but cannot recommend their general adoption.

† Vide Appendix, p. 80, for a description of the form and dimensions of hollow bricks adapted for this purpose, and for additional information on the use of hollow bricks and tiles. At the reading of this Essay, Capt. Buller, R.N., mentioned that he had, in Devonshire, some years since, built with hollow bricks, at the cost of 100*l.*, a pair of cottages, each containing two rooms and a kitchen, 13 feet square, all on the ground floor. The walls, which were six inches thick, in consequence of the bricks being used singly, had not been perfectly tight at the joints, although otherwise very dry; this inconvenience is effectually remedied by the double course of bonded hollow bricks, described at pp. 24 and 81.

so worked that it be not trodden on until it has laid for three days, when it should be well rammed for several successive days, until it becomes hard, taking care to keep the surface level; then use a little water, and smooth it with a trowel; after this, keep the floor free of dirt, and when perfectly dry, it may be rubbed over twice with linseed oil, which gives the appearance of stone instead of sand. The price paid for such floors is about 6*d.* per yard for labour, and 8*d.* per yard for materials.

Tiles\* will generally be found preferable to slate for the covering of roofs, being warmer in the winter and cooler in summer; and, requiring much less lead, are more economical. In some localities, however, slate may more effectually exclude the weather.

With a view to provide for efficient ventilation, an air-flue, 9in. by 4½in., should be carried up in one of the jambs of the ground-floor chimney, commencing under the floor-level, and passing into the flue from the bed-room chimney, an opening being formed into it immediately under the ceiling of the living-room, filled in with a plate of perforated zinc. The bed-room over the living-room may be aired and warmed by a pipe 2½ inches diameter, passing through this flue from the side of the fire-place on the ground floor, and opening into the bed-room above. The lower part of the flue may be made to serve as an air-feeder to the fire-place of the living-room. The bed-rooms without a fire-place should have an aperture in the partition over the door, filled in with a perforated zinc ventilator, or an air-pipe may be carried through the roof, and bent over at the top.

The windows should have chamfered and rebated wood frames, with oak sills set on a stone or moulded brick projecting sill; they should have zinc quarry casements, hung to open outside, with proper stay-bar fastenings; the shutters of the ground-floor windows may be conveniently arranged to answer the purpose of a table, by hinging them so as to fall under the window.

The plastering to the walls of the living-room in cottages has in some cases been omitted, but with very little saving of expense, as the brickwork requires additional care; and there is certainly a diminished appearance of comfort. If a chair-rail be fixed, the wall under it rendered with cement, and above plastered with sharp sand and good lime, the annual cost of repair will be but trifling. Plastering to the walls of any other part of the ground-floor, excepting the living-room and perhaps the porch, is undesirable. Much benefit would result from a general adoption of the plan pursued by the Duke of Bedford, of having all his cottages whitewashed† once a-year, the cost being charged to the tenant at a fixed sum.

In lieu of receiving rain water from the roofs in wooden bnths, it is a greatly preferable plan to form between a pair of cottages an oval tank

---

\* Blue metallic tiles, and ridge rolls of Staffordshire manufacture, are amongst the most durable materials for roofs.

† The following composition of whitewash has been found to be very durable:— Take one peck of unslaked lime, half a pint of whiting, a gill of powdered alum, a gill of fine white salt, pour boiling water on, and mix it as thin as possible; apply it while warm, and in order to have it so, keep adding the hot water, as some of the lime will settle at the bottom of the vessel.

about 7ft. by 4ft. diameter, and 3ft. 6in. deep, divided into two compartments, with an oak flap to cover each side. The water from the gutter piping should be led into it by earthenware pipes 4in. diameter. Soil drains of any length should not be less than 6in. diameter.

In cases where the closets are constructed under the roof of the dwelling-house, though entered from the outside, it is important that pans should be used for conveying the soil to a cesspool or liquid manure tank formed without the building. They are most efficacious when supplied with water, which may be done at a little extra expense from the lift-pump in the scullery, made to fill a small cistern or reservoir fixed a little above the seat. These may be either of cast-iron, built in the wall, or of earthenware.

Artificial  
concealment  
of Closets.

The following plan has proved effectual in situations where it was otherwise difficult to blind or conceal the closets, when erected as an out-building; the appearance of a pile or stack of fuel-wood is given by a casing of split or half-round larch timber laid horizontally, and having short pieces of whole timber at the angle spiked to the ends of each alternate layer; the interior framing may be bricknogged, and the roof of slab slate, or strong zinc. These and other outbuildings might with advantage be constructed with common hollow bricks 5in. or 6in. wide, which, when put together with cement, form an economical covering.

The use of such hollow bricks for enclosure or division walls would secure greater durability, and in many cases be but little more expensive than wooden fencing.

In closing these remarks on the Dwellings of the Labouring Classes, I cannot but add that it will be to me a source of permanent satisfaction if they should prove of service to the members of the Institute, or conduce in any way to the removal of obstacles which present so formidable a barrier to the physical, the moral and the religious advancement of a very numerous and deserving class of the community.

To contribute to the welfare of our fellow-creatures, with a view to the glory of God, carries with it that durable happiness which the pursuit of wealth, of fame, or of fleeting pleasure, cannot afford.

PART THE SECOND.  
ON THE  
ESSENTIALS OF A HEALTHY DWELLING.

---

READ AT THE  
ROYAL INSTITUTE OF BRITISH ARCHITECTS,  
20TH JANUARY, 1862.

---

In acceding to the request of the Institute that I would, after an interval of twelve years, again give to its members some of the results of that experience which has been gained in my gratuitous efforts to promote the healthfulness of our dwellings, and more especially those of the labouring population, I feel that, however unattractive the subject may be in an artistic point of view, it has some peculiar claims on your attention; and that whilst many of the difficulties with which it is beset can be appreciated, their solution may probably be aided by some amongst those whom I have now the pleasure of addressing.

In my paper read the 21st January 1850, reference was made to the great interest taken in this subject by our late illustrious Patron, the deeply lamented Prince Consort, and His Royal Highness's own words were quoted, to show that "these feelings are entirely and warmly shared by Her Majesty the Queen," our most gracious Patroness. Proofs of an undiminished continuance of that interest, as well as some of its practical results, will be stated in the latter part of my present paper.

H.R.H. the  
late Prince  
Consort.

In the grief so universally manifested at the death of this great and good Prince we all participate; but those who were honoured by occasional intercourse with that illustrious person, and knew his kindly, courteous manner, must feel the loss more deeply. Some present can, no doubt, bear witness with me to the proofs of a real interest in the objects deemed by His Royal Highness worthy of his attention, and in which a remarkable appreciation of minute details was manifested—one characteristic feature, if it be permitted me to say so, of a mind as reflective as it was highly cultivated.

The deep feeling of responsibility manifested by the following words of the lamented Prince have led me to select them as a motto suitable to this occasion:—

"The blessings bestowed on us by the Almighty can only be realized in proportion to the help which we are prepared to render to each other."

In proceeding to point out the circumstances conducive to the healthfulness of a dwelling, some will be named which cannot be strictly termed "essentials," inasmuch as their absence may be compensated for. Such is

Essentials  
of Health-  
fulness in a  
Dwelling.



the case where localities, though not elevated, have a good soil and are well drained. It may, perhaps, appear scarcely necessary to add that the healthy state of a dwelling will not be ensured by any one, or even by the union of several of the features essential thereto, in the absence of others which are of equal importance.

The condition of "healthy," in regard to dwellings, arises out of a combination of circumstances, which comprise—

1. Those appertaining to the locality, including a free circulation of pure air, a good soil, an efficient drainage, an ample supply of pure water, and a genial aspect.

2. Those which are structural.

3. Those which depend mainly, though not wholly, on the occupants themselves—external and internal cleanliness, and a proper use of structural arrangements.

Locality.

*Firstly.*—IN REGARD TO LOCALITY. High and dry situations, having a free circulation of air, whether occupied by groups of buildings, as in towns, or by isolated dwellings, as in the country, are proverbially healthy; whilst those which are low and damp, or surrounded by confined air, are the opposite. Experience, afforded by the state of troops when encamped, or when in permanent barracks, or in hospitals, is conclusive on this point. It is a known fact that the mortality of troops in Jamaica has been diminished from 120 to 20 per thousand by their removal from the plains to the hills; and it is well ascertained that ague, dysentery, and fever prevail in localities where the surface of the ground is naturally wet and insufficiently drained, or where there exists an accumulation of decaying matter, of which one sure indication is the presence of an abundance of flies. Dampness of situation is also productive of mental depression and bodily feebleness, which excite a craving for intoxicating drink. The embosoming in trees, or any other obstruction to a free circulation of air immediately round a dwelling, is prejudicial to health, and should, therefore, be avoided.

Soil.

A soil of gravel is unquestionably the most healthy, and, next to it, one of sand. A soil of chalk is usually attended with the disadvantage of its being necessary to sink a considerable depth for water; whilst the chemical properties,\* imbibed in the process of filtration, are injurious to some constitutions. Tanks, or reservoirs for storing rain-water are, in such cases, often the most suitable expedient. Clay soil, which, from its non-porous nature, retains the rainfall, is a frequent cause of the dampness so prevalent in the lower stories of houses in many localities—an evil felt as much in some which are elevated as in those at a lower level, and a fruitful source of sickness amongst servants, as well as the occupants of small houses, whether in towns or in the country. The precautionary measures which

---

\* A process for softening water derived from chalk has been put in operation at Woolwich, and is said to be successful. In an article on sanitary legislation in England in the *British Almanac* for 1859, this process is noticed, and also the serious inconvenience often occurring from the oxidation of iron pipes used for soft water supplies, the only known effectual remedy for which is an internal coating, or varnish.

should be adopted when the soil is of clay will be noticed under the head of construction.

Loose soil close to a house is a frequent cause of damp, which might be remedied by a flagging of stone or asphalt, and in many situations a dry drain or area ought to be formed round the building. Care should therefore be bestowed in regard to the surface of the ground about a dwelling, as well as in the selection of its site.

*Drainage of the Soil and Surface.*—Wherever dwellings are built on naturally wet ground, it is essential to their being healthy that ample provision be made for draining the soil, as well as for ordinary surface drainage and for the carrying off of surplus fluid from the house itself. The necessity for this description of drainage is generally more manifest in the country than in towns, their gradual formation and progressive increase having been usually accompanied with surface drainage under some form or other. Good surface drainage is, however, peculiarly necessary in towns built on an uneven surface, as is the case with the metropolis, which stands on low hills in the midst of an imperfectly reclaimed swamp, partially underlaid by a stratum of peat. The lower levels on either side of the Thames, where the drainage has been most inefficient, were much more severely visited by the cholera\* than the higher parts of the metropolis.

Drainage of the soil and surface.

*House Drainage.*—The providing efficient means for house drainage, as well as a good surface drainage, is a duty which, in the case of towns, obviously devolves on the public authorities. The consequences of a past neglect of this duty have been remarkably manifested at Windsor, where the prevalence of fevers and choleraic complaints having led to an investigation, the drainage of the town was found to be very defective, and without any proper ventilation to carry off the gasses which form in the sewers; whilst, on the contrary, at the Castle,† a separate and perfect system of drainage having been provided, no disease existed. The case of Bedford might be cited as another instance recently before the public. House drainage should, as far as possible, be kept without the building, although the valuable modern improvement of glazed earthenware tubes with perfect sockets has greatly diminished the risk of leakage from defective drains, an evil formerly so prevalent. Especial care ought to be taken that the pipes which discharge into them are properly trapped, in order that they may not become a medium for the escape of foul air into the dwelling. It may be useful to point out the disinfecting properties of wood charcoal,‡ now suc-

House drainage.

\* I have the authority of Dr. Farr for stating that, if the mean of cholera epidemic of 1848 and 1854 in London be taken, nearly 11 per 1000 of those living under 10 feet of elevation died, to 1 per 1000 of those at the highest elevation; and that if London be divided into terraces of different degrees of elevation, the mortality from an epidemic of cholera is, in round numbers, inversely as the elevation.

† The official Report made by Mr. Rawlinson, since the reading of this paper, entirely confirms the fact here stated. The perfection referred to is attributable to the thoughtful care of the lamented Prince Consort.

‡ Subsequent experiments on the comparative practical value of various deodorizing agents confirm the opinion expressed by Professor Petenkoffa, in his Commentary on Cholera, as to the superiority of "Sulphate of Iron," which has been used on the Continent for disinfecting "latrines." Sifted dry earth, or clay subsoil, has been

cessfully applied as a medium of filtration in ventilating sewers, house drains, &c.

Cesspools.

*Cesspools* under basement floors, so common formerly, have been the cause of sickness and deaths innumerable. During the cholera in 1849, to my knowledge, several cases, wholly traceable to this cause, occurred in one house. Whenever these latent sources of mischief are discovered, they should be removed as quickly as possible. In many houses of the first magnitude, both in the metropolis and in the country, which are not of recent construction, this evil exists, as well as that of defective drains, causing the ground under the house to become sodden with fetid matter. The gasses which originate in these places, and diffuse themselves over the dwelling, constitute one of those conditions of local impurity which exercise a powerful influence when the state of the atmosphere is favourable to an outbreak or spread of cholera, fever, or other kindred complaints. The abolition of cesspools within all dwellings is therefore a sanitary measure of the first importance.

Pure Water,  
for which  
the Public  
Authorities  
are respon-  
sible.

*Pure Water.*—For an ample supply of pure water, one of the most important accessories to a healthy dwelling, the public authorities should, in the case of towns, be held responsible. The contamination of our rivers by their being unscrupulously, and at the same time most wastefully, made the receptacles of sewage, has rendered them very generally incapable of supplying the neighbouring population with pure water. Fully admitting the improvement which, in respect to its supply of water, has taken place in our own metropolis, it still remains far behind the metropolis of the Roman Empire, and even many of its provincial cities. Those who have traversed the Campagna di Roma can never forget the gigantic aqueducts whose ruins proclaim how abundantly, and at what cost, Rome was supplied with water. The water from Loch Katrine recently brought to Glasgow, at a cost of 1,500,000*l.*, contains only 2.35 grains of impurity per gallon, whilst the water supplied to London by six of the leading Companies is shown, by late official returns, to contain from 17.72 to 21.76 grains. The practice which has to such an extent prevailed in our towns of obtaining water from *wells*, sunk not unfrequently near to a churchyard, has been very prejudicial to health, though its sparkling appearance and freshness to the taste might lead to the contrary supposition. Its impurity is generally caused by an infiltration from some neighbouring drain, cesspool, or other deposit of putrefying matter. Many such instances in the metropolis might be referred to. One was recently mentioned to me by the medical officer to the General Post Office as having been the cause of much internal derangement to several of the *employés* in that establishment, and which had led to his recommending the use of the patent carbon filter. In late reports of the Registrar-General reference is made to a well at Sandgate as containing 40.96 grains of impurity per gallon; and in another at Hampstead as containing 53.60 grains.

---

found, when used in layers, a very efficient means of deodorizing the deposits from water-closets, &c., rendering it available for manure. (Vide "Manure for the Million," by the Rev. Henry Moule.)

For dwellings in the country, good drainage and ready access to pure water are not less essential than they are in towns, and they ought, therefore, to be made the subject of deliberate investigation before the locality of a dwelling is decided on.

*The aspect of dwellings* is often greatly dependent on local circumstances, and has an influence on their salubrity which is too much overlooked. In preference to all others, a southern aspect should be chosen, and where that is unobtainable, one inclining either to the east or to the west, so that the rays of the sun may enter at some part of the day. Rooms to be chiefly occupied in the height of summer are exceptional, though in such cases I should give the preference to an eastern or a north-eastern over a due northern aspect. In towns the difficulty of obtaining a sunny frontage may frequently be great, if not insurmountable, but the importance of having the sun's rays within the dwelling for some portion of the day, especially in rooms occupied by children or by invalids, should never be forgotten. I could point to a large convalescent asylum in the country, which is so arranged that the spacious gallery used by the patients for exercise during the greater part of the day is without the cheering and warming rays of the sun. Such defects tend to defeat the main object of the institution, and are a discredit to all concerned in the building. Aspect.

*Secondly.*—THE STRUCTURAL FEATURES essential to a healthy dwelling have now to be considered. In pointing them out, the same brevity which has characterized my remarks on those appertaining to locality will be aimed at; and not doubting that your own recollections will supply the corroborative passages which might be adduced from Vitruvius, from Alberti, and other eminent authorities, I abstain from quoting them, in order to avoid unnecessarily encroaching on your time and patience. Structural Features.

To secure the healthy condition of a dwelling, its structure must be—  
1. Dry. 2. Warm. 3. The number and area of its apartments must be in proportion to the number of their occupants; and due provision must be made for all the requisites appertaining to daily life. 4. It must be well lighted. 5. It must be properly ventilated, and be free from noxious vapours of every kind.

1. In order to a house being dry,\* it must stand on a dry *foundation*; and where this is not obtainable, artificial means should be adopted, either by forming a stratum of concrete, varying in depth according to circumstances, but never less than 12 inches;—by a bedding of slate in cement, or by a bed of asphalt laid through the whole thickness of the wall under the floor level. Dryness of Foundation

The lowest or *basement floor* should be raised not less than about 8 inches

---

\* How greatly *dryness on ship-board*, which is the sailor's dwelling, is conducive to health, may be learnt from a fact stated by Captain Murray, R.N. After being two years in H.M. Ship "Valorous," amongst the icebergs of Labrador, he proceeded thence to the Caraccas and the West-India Islands, on a long cruise, and returned to England, "without one casualty,—or indeed, having a single man on the sick list." After describing the special care taken to secure perfect dryness in every part of the vessel, Captain Murray says, "I am satisfied that a *dry* ship will always be a healthy one in any climate."

above the external surface; and if the floors are of wood, the ground beneath them ought to be excavated, so as to give a clear depth of not less than 12 inches, which should be ventilated by means of air bricks, built in the external walls.

Floors.

*Floors* of stone or of slate should either be hollow, resting on brick courses, or be laid on a dry bed, prepared for the purpose, which is also essential in the case of brick or tile floors. In some parts of the country, lime and sand floors are pretty generally used for cottages; and when properly made with a dry substratum they are said to last upwards of 40 years. I have used Portland cement for the floors of living rooms in fireproof dwellings, but in those places where there is much wear, stone is preferable. Bed-rooms ought, in our climate, when not matted or carpeted, to have boarded floors.

External Walls.

*External walls* must be weather-proof, of sufficient thickness to secure dryness and warmth. On the facilities for obtaining a good and non-porous material may depend whether brick, stone, or flint be used: whichever it be, good mortar is essential to dryness. In some places concrete, pisé or cob, with an external facing of plaster, or rough cast, may be employed with advantage, provided the foundation be dry, and the walls are well protected by an overhanging roof. Hollow walls conduce greatly to dryness and warmth: they may be formed either wholly of brick, or externally of one of the other materials before named, and be lined with brick or tile, a small hollow space being left between. The same advantages are derivable from the use of hollow bricks, and they are also well adapted for the lining of walls. A glazing on the external surface of brickwork is an effectual preventive of damp, and it is to be regretted that suitably glazed bricks are not easily obtainable at a moderate price. Their smooth surface is a great recommendation for some internal work, on account of its cleanliness and its non-retaining properties of noxious odours. Colouring or whitewash is more healthful than paper in common apartments, and it should be frequently renewed.

Covering of Roofs.

For the *covering of roofs*, slate has with us so many recommendations that its general adoption may be readily accounted for; the evils attendant on its use, arising from changes in the temperature, should be particularly guarded against by boarding, by felt, or by double plastering. Tiles are generally found to be warmer in the winter and cooler in the summer than slate, and, requiring less lead, are in that respect more economical. Projecting eaves should invariably have gutters, to prevent the drip which is often the cause of damp in the walls and foundations: the same evil too frequently arises from a stoppage of the rain-water pipes consequent on their being either too small, or their heads being unprotected from the intrusion of birds' nests, leaves, &c.

Advantage of fire-proof construction.

For the roofs of town buildings more particularly, a *fire-proof construction*,\* such as was described in my paper of 21st January, 1850, has many

---

\* I adopted the hollow-brick fire-proof construction here referred to, in the roof and floors of the two ranges of model dwellings for families built in Streatham-street, Bloomsbury, and in Portpool-lane, as well as in the Prince Consort's model houses at the Exhibition of 1851. Recently the efficacy of this mode of construction was tested at the Streatham-street houses, by a tenant who accidentally set fire to the woodwork

obvious advantages to recommend its general adoption. But the practice, so extensively prevalent, of forming rooms for servants in the roof is an impediment thereto. In reference to *fire-proof constructions* I would take this opportunity of recalling a suggestion made in a Paper, read by my friend Mr. S. Smirke, 5th November, 1860, "On the use of Coke," which, from its lightness appears to be equally suitable for the purpose of vaulting, as the volcanic scoria or pumice, known to have been thus applied in many important buildings in Italy and Sicily.

When the immense destruction of property caused by fire, and too often accompanied by the loss of life, is considered, the question of an efficient system of fire-proof construction generally applicable, appears to me to merit the very serious consideration of the Institute of British Architects, and I therefore venture this passing remark, though the suggestion is not immediately connected with my subject.

*Wood* of an inferior quality, or unseasoned, when used in any part of a dwelling-house, is a false economy, whilst the cracks and shrinkages caused thereby are, from the draught they occasion, often prejudicial to health. Wood.

*Lead*, a material which enters into the construction of most dwellings, should be used with great caution for pipes\* which convey drinking water, and ought to be dispensed with altogether for cisterns, excepting those for the service of closets, on account of the injurious effects produced by the chemical action which frequently takes place when the water in them is soft. Iron, properly varnished or enamelled, may be substituted for both purposes; and for cisterns, slate is very suitable. The offensive and unwholesome smell which often proceeds from sinks of lead or ordinary stone, renders the substitution either of slate, of glazed stone-ware, or of enamelled iron, very desirable. Lead.

2. *Warmth*.—This in a dwelling depends not only on its aspect, its dryness, the materials used, their proper application and substance, as I have already noticed, but also on the structural plan, particularly on the relative position of the doors and fire-places, as well as of the windows and spaces for beds, which should be such as that the occupants will not be exposed to draughts. Warmth.

With all our regard for comfort, it is surprising that we do not more frequently endeavour to modify the effects of our variable climate by the use of double sashes, which are so common in many parts of the Continent. This would be a means of retaining more of the small portion of genial warmth which passes into the room from our wastefully constructed open fireplaces, a subject on which, in connexion with the artificial warming and ventilation of dwellings, something more will be said hereafter.

3. *The number and dimensions of the apartments* essential to health in Number and

---

of his apartment, to which the fire was limited. Hollow bricks, with wrought-iron girders, are now very extensively used for floors in Paris. Thirty years since, when constructing Fishmongers' Hall, I used, over the kitchen and in some other places, a vaulting of earthen pots, hollow bricks being then scarcely known, though they have been found in the remains of Roman buildings in this and other countries.

\* Pipes and cisterns made of paper, rendered by a peculiar process a non-conductor are said to have resisted the action of a severe frost of some weeks continuance.

Dimensions  
of Apartments.

a dwelling, must be proportionate to the number of its occupants, and suitable provision must be made for all that appertains to a well ordered domiciliary life, not only that of the master and mistress as well as of the children, but also that of the servants, whose health and morals it is the duty of their employers to care for.

Space re-  
quired for  
health.

The amount of space required for health being greatly dependent on efficient ventilation, it will be considered under that head. In most dwellings the scale of accommodation chiefly depends on the means and circumstances of the occupants, in which the variety is so great that I shall not attempt giving any thing but a brief outline of what may be termed the minimum provision which, where practicable, ought to be made for a family consisting of parents and children of both sexes, belonging to the labouring class, undoubtedly the most numerous section of the community.

Labourer's  
dwelling.

A *labourer's dwelling* in the country should have a small entrance lobby, a living room not less than 150 feet in area, and a scullery of from 60 feet to 80 feet in area, in which there should be a stove or fire-place for use in summer, as well as a copper and sink; there should also be a small pantry. Above should be a parents' bed-room of not less than 100 feet area, and two sleeping-rooms for the children averaging from 70 to 80 feet superficial each, with a distinct and independent access. Two of the sleeping-rooms at least should have fireplaces. There ought also to be a properly lighted, ventilated, and drained closet, as well as suitable enclosed receptacles for fuel and dust. The height of the rooms, in order to their being healthy, should be scarcely less than 8 feet, and even 9 feet would be desirable but for the extra expense. With a view to ventilation, the windows should reach nearly to the ceiling, and the top be invariably made to open. In windows which have transoms as well as mullions, some of the upper compartments may be hung on centres for this purpose.

It may be deemed almost Utopian to indulge the hope of seeing such accommodation as this placed within reach of those of the labouring population who are doomed to reside in towns; but they who for several years have been striving to place the benefits of a healthy dwelling within their reach, whilst knowing by experience something of the numerous difficulties to be overcome, and being fully aware that, in many cases, it may be impossible to accomplish all that is desirable, ought not on that account to be daunted in the pursuit of an object of such great and wide-spread importance.

In returning from this digression to the structural features of a healthy dwelling, I would point out the great importance of direct external ventilation and light to all water-closets, including those in servants' use. It is obvious that constructive defects here must be a very serious evil. The water-pipes should be carefully protected from the effects of frost.

Smoking of  
Chimneys.

The *smoking of chimneys*, if not caused, as it often is, by the want of sufficient air in the apartment,\* or by bad management in the first lighting,

---

\* The late Mr. Thomas Cubitt told me that he had frequently cured smoky chimneys, in houses of his own building, well known to be amongst the best in London, by an imperceptible admission of a little air over the room doors, the woodwork fitting so closely that when they were closed sufficient air could not gain admission to the room.

or in the putting on of fuel, frequently arises from the proximity of more lofty buildings, or of trees, and too often from a defect in the construction of the flue, such as its being too large to ensure a continuous upward current—an evil which may be sometimes cured by a contraction of the throat. For ordinary chimneys, flues 9 inches square, or, which is decidedly preferable, 10 to 11 inches diameter, are quite sufficient. Those for rooms above the ordinary size and for kitchens are exceptional. The dampness of flues in a thin external wall is often the cause of their smoking. In some cases, where not caused by a structural defect in the flue, the evil has been remedied and fuel greatly economized by simply placing in the bottom of the grate a plate of iron with a few minute holes bored in it.

*Light*\* well diffused over all parts of a dwelling is essential to its being healthy. A dark house is not only gloomy and dispiriting, but is always unhealthy. We know on high medical authority that “the amount of diseases in light rooms as compared with dark ones is vastly less.” Light ought to be diffused over the whole dwelling, so that no dark corners be left to invite a deposit of that which is untidy or offensive. Happily the motive which in times past led so much to an exclusion of the light of heaven no longer exists, and though ages may pass ere the evils resulting from a vicious legislation are entirely swept away, yet the removal of the tax on windows and of that on glass, must, amidst much to discourage those who have long and zealously laboured in the cause of sanitary amelioration, be regarded as most valuable concessions in its favour. Light.

5. *Ventilation and Artificial Warming*.—These are questions of vital importance in regard to dwellings, though, judging from the neglectful indifference of multitudes, their value is far from being duly appreciated by the educated, and even by some in the scientific classes of the community. Were it otherwise, the closeness perceptible on entering many of their dwellings, the oppressive heat of the rooms, the sickening fustiness in the apartments occupied by the servants, and too often in those of the children, would certainly not exist. When the number of hours passed within doors by every human being in a civilized state is considered, it will be manifest that the breathing of vitiated air for so large a portion of the twenty-four hours must be as injurious as living on unwholesome food. Ventilation  
and warming.

Unnecessary as it is for me to describe the component parts of the air,† the process of its deterioration in passing through the lungs, or to dwell further upon those sources of impurity and other accessory influences in and about

---

\* Although the influence of light on physical life is a subject of which but little is known, some important facts are recorded. Sir James Wylie, who studied at St. Petersburg the effect of light as a curative agent, found in hospital rooms in that city, which were without light, that only one-fourth the number of patients left cured, as compared with those who had occupied properly lighted rooms.—*Vide* an article by Sir David Brewster in the *North British Review*, vol. xxix., 1858, entitled “*Researches on Light*.”

† Amongst the numerous works which may be consulted on this and other important questions connected with my subject, I would recommend “*The Principles of Physiology applied to the Preservation of Health*,” by Dr. Andrew Combe; or the more popular publications by Dr. Lankester, as well as those issued by Jarrold & Co.



Space re-  
quired for  
health.

a dwelling which tend to vitiate the air within, it may be useful, before giving the results of my own observations on the means of obtaining efficient ventilation, to notice one important preliminary consideration, that of the space required to keep a healthy man in full vigour, on which very different opinions have been expressed. Experience gained in poor-house dormitories, in prisons,\* &c., has led to the conclusion that from 450 to 500 cubic feet are requisite thereto, and that the ventilation should be such as will cause an entire renewal of the air about once in the hour.

Observations made at the Model Lodging-house, in George-street, St. Giles's, a confined situation, satisfy me that the cubical space of 535 feet, which is provided in the dormitories of that building for each inmate, is, with proper ventilation, abundantly sufficient to render them healthy: such was proved to be the case, even when the cholera raged in the neighbourhood, and had not a single victim out of the 104 men who lodged within its walls. From this fact I think it reasonable to infer that the past unhealthiness of the Wellington Barracks, Westminster, where the cubical space per man allowed in the dormitories is stated to be 500 feet, must have arisen, not from want of space, but from some other existing evils, particularly the defective ventilation pointed out in the report made to the General Board of Health by the Commission on Warming and Ventilation.

Importance  
of accuracy  
in regard  
thereto.

As mistakes with regard to space tend to create imaginary difficulties, and either impede sanitary reform, or cause a serious unnecessary expenditure,† I think it of use to notice two recent errors on this point which have come under my observation—one in the *Quarterly Review*, where, in an article on “Labourers' Homes,” it is stated that “The Lodging-house Act requires an allowance of 700 cubic feet per person;” another in a publication by Dr. Drnutt, entitled “The Health of the Parish,” where it is said that “It has been decided at Bow-street that every inmate of a family ought to

\* The space allowed in the cells of prisons should not be regarded as an absolute criterion: at the Model Prison, Pentonville, there are about 800 cubic feet.

† The Report of the Government Commissioners on Warming and Ventilation says, at folio 99:—“Under all the circumstances, we would urgently direct the attention of the Minister-at-War and the Horse Guards to the *absolute necessity* of providing more room and accommodation for the soldier in barracks; and that instead of 500 cubic feet of space, that 700 to 800 cubic feet should be allowed per man, or, as in the case of the Wellington Barracks, that only ten persons should occupy the space allotted to sixteen; and that these regulations should be enforced as soon as extra spaces can be provided throughout the whole of the United Kingdom.” In a previous part of the report, at folio 92, are found the following apposite remarks, which scarcely appear to have emanated from the same mind:—“The continuous removal of impure air, as it arises, is of very much greater importance than the cubical contents of air in a room. In the soldiers' rooms, which are constantly occupied, the amount of cubical space can be of very little importance, for how lofty soever the rooms may be, unless the heated and impure air can pass away, the space will soon be occupied by air unfit for respiration, and the greater or the less size of the room will only resolve itself into a little more or a little less time before the air is brought into an impure condition.” “The soldiers' rooms are about 12 feet in height: with good ventilation, this might be reduced to 11 feet or even to 10 feet without disadvantage.”

have 400 cubic feet of space." On inquiring at Bow-street as to the latter decision, I learned that the magistrates have no power to determine the space, and was referred to the Assistant Commissioner of Police, who informed me "that 30 feet superficial is the space allowed to each lodger in the metropolitan common lodging-houses, the rooms averaging 8 feet high," which is equal to 240 feet cube, and that 50 feet superficial is allowed to each police-constable lodged in a station or section-house, the rooms on an average being 9 feet high," which is equal to 450 cubic feet. The Poor Law Board, without laying down any fixed rule applicable to all circumstances, adopts as a basis of calculation an allowance of 500 cubic feet for every person in sick wards,\* and 300 cubic feet for every healthy person in the dormitories. The Sanitary Inspector in Dublin requires in registered lodging-houses an allowance of 308 cubic feet to each person.

Dwellings for all classes of persons, in order to their being healthy, should be so constructed as that they will be *everywhere accessible to pure air*, and be free from stagnation in any part; and, whilst it is obvious that the state of the surrounding air must have much influence on that within the dwelling, the renewal of the latter should always be sought from the purest source, instead of the supply being drawn, as it often is, from a low damp situation or a confined internal court.

Considered practically, the *main question* with regard to ventilation is, in what way the air which has become vitiated can be renewed with a supply of pure fresh air, without the creation of a draught injurious to health? To do this the air must enter copiously, and almost imperceptibly, and when used, or become vitiated, its exit should be both continuous and complete.

Ventilation is of two kinds, *natural* and *artificial*; the former being effected by means of windows and doors, with the crevices round them, as well as by chimneys and fireplaces, which are important agents in natural ventilation, and may also, by scientific arrangements, be made conducive to an efficient system of artificial ventilation, peculiarly applicable to dwelling-houses.

In new buildings improvements may be easily adopted which are not always applicable to old buildings; but, as far as circumstances allow, they should be carried out, from a settled conviction that pure air is indispensable to a healthy state both of body and mind.

Windows properly constructed, made to open at the top as well as below, and suitably placed, afford the most ready means for the natural ventilation of dwellings, besides which are the various contrivances of louvres, of perforated glass, zinc, tin, &c.

Chimneys act as ventilators whenever a fire is lighted in a room: the lower stratum of air being immediately set in movement, a current of air is

The question of Ventilation regarded practically.

Two kinds of Ventilation.

Natural Ventilation.

---

\* In order that the amount of space now deemed requisite in hospitals may be readily compared with the above, I quote the following:—"In solid-built hospitals the progress of the cases will betray any curtailment of space much below 1500 cubic feet. In Paris 1700, and in London 2000, and even 2500 cubic feet, are now thought advisable."—Miss Nightingale's "Notes on the Sanitary Condition of Hospitals."

established from the crevices round the doors and windows, or from any other openings towards the chimney, whereby much of the vitiated air is carried off. This process of ventilation takes place in a slight degree when there is no fire in the chimney, and therefore bed-rooms are much more healthy with a chimney than without. It should not, however, be forgotten that a large portion of the vitiated air ascends above the chimney opening, and therefore it is essential that a provision be made for its removal thence, whenever perfect ventilation is desired.

An independent supply of fresh air may be introduced into most rooms which have a fireplace, by conveying it through a pipe or channel formed under the floor, or in the wall, to an air-chamber constructed at the back or sides of the stove, in order that it should be there warmed before entering the room. I have seen in Edinburgh a solid fire-clay bed-room chimney-piece and grate so formed as to leave, when it is set, a cavity round it, which appears well adapted for this purpose. The same, or a separate pipe or channel may also be used for feeding the fire with air, independent of that in the room: for this purpose it should pass out at the cheeks of the stove, rather than beneath the grate, which is liable to cause a diffusion of dust in the room.

Chimney  
Valves.

*Chimney ventilating valves* are rendered, by such a supply of air, more certain in their action than they often prove to be, owing generally to an insufficient draught in the chimney, which causes the emission of smoke into the room. These valves would be invaluable for the discharge of vitiated air, which is their intended purpose, were it not for this occasional ingress of smoke. The most effective means of avoiding that evil is carrying up an independent flue in close contact with a smoke flue, constantly in use, as that from the kitchen: the air within the ventilating flue is by this means rarefied, and the action of the valve rendered more efficient. Tubular flues, of pottery, made double for this express purpose, are found to answer well, and have the advantage of occupying but little space, whilst they are not liable to the objection pointed out to me many years since, by an eminent builder, who had found that cast-iron flue linings, having no mortar joints, acted as a dead shore in the wall. In cases where the chimney-valve, being fixed in the flue, causes an ingress of smoke, the most effectual remedy is, I believe, Dr. Arnott's smokeless grate, with the draught duly regulated by a contraction of the vacant space over the fire. These grates economize fuel considerably.

Fire-grates.

*Ordinary grates*, I may here remark, are alike wasteful of heat and fuel, both of which would be much economized by the substitution of a stove projecting slightly into the room, and combining the chief advantages of the one known as Dr. Arnott's ventilating stove, with the cheerful open fireplace. I have seen some such stoves in use on the Continent, and I believe that the only valid reason against their adoption in England, beyond the force of custom, is the difficulty—not, however, an insurmountable one—of applying them to fire places with the ornamental chimney-pieces in such general use. One of the most useful modern improvements in grates is that of forming the back and linings with fire-brick instead of iron.

Escape of  
vitiating air.

The intimate connexion between warming and ventilation has led to a digression, in returning from which I remark that, in order to render natural ventilation effectual, the openings required for the escape of vitiated

air should be placed either in the ceiling or near to it.\* How far the admission of fresh air also in the upper part of the room be objectionable, on the ground that the air vitiated by breathing, which ascends in consequence of its relative lightness, is in that case only *diluted*, and not entirely replaced by pure air, remains, I believe, yet to be determined by properly conducted experiments.

It would be a vain attempt to point out the most suitable situation, or even the level at which, under all circumstances, fresh air should be admitted. The point of greatest importance is the avoidance of a perceptible current or draught; and wherever that can be combined with the admission of a sufficient volume of pure air, there it may be allowed to enter. In some situations this may be near the floor, or a little above it, in others an arrangement suitable for the purpose may be made by fixing a hopper or a sliding ventilator over the door,† or in the upper part of it; a plan often applicable to bed-rooms, where good ventilation is so essential, though lamentably neglected. In small rooms with a fireplace, this addition to the usual means of changing the air, generally suffices to keep them in a healthy state; but where there is no fireplace there should be a distinct provision for the escape of the vitiated air, which may sometimes be effected by means of a pipe carried through the roof and bent on the top. It should be remembered that where openings can be formed on the opposite sides of rooms, the air will be most speedily and effectually changed.

Level at which fresh air should be admitted.

With all the various contrivances and arrangements proposed for the admission of fresh, and the exit of vitiated air, unaided by those appliances which are scarcely consistent with the term *natural* ventilation, none have come under my observation which secure uniform action, and fully guarantee that the distinct provision made for the exit of vitiated air shall not become the medium for the ingress of cold air, on a change of temperature in the apartment, the frequent consequence of which is a draught, more or less perceptible. In order to avoid this evil, various means have been adopted, according to circumstances, with varying success. The use made of chimney-shafts for this purpose has been already noticed. Tubes or shafts, of wood, of clay, or of metal, are also available, provided a constant outward current is maintained by such an application of heat as will sufficiently rarefy the air. Hot water has often been applied externally for this purpose with advantage. I have used gas enclosed within an upright shaft, partly of wood, the light being placed behind a square of glass, and the air entering through perforated zinc, with a hopper enclosure: by these means the combined

Difficulty in securing uniformity of action.

---

\* In a certain description of common rooms, ventilation may be effected by means of wooden tubes perforated with holes, or having chinks at the angles: in some cases they may be carried across the ceilings, and in others be fixed at the angles. They have also been used for admitting fresh as well as for the exit of vitiated air. These tubes distribute the air more generally, and are not so likely to be closed as either Sherringham's or Hart's Ventilators, both of which are very useful in many situations. A cheap cottage ventilator may be made with a piece of zinc, fixed in the upper part of a window, perforated in the centre, and with a projecting rim formed round the perforated part, in order to receive a moveable cover, which may be hinged.

† If arrangements were made for this purpose in the construction of new buildings, much benefit might be derived therefrom.

benefits of light and ventilation are obtained from the same quarter. In many situations this simple plan might be easily adopted, and in dwelling-houses generally I believe that gas might frequently be rendered a valuable contributor to ventilation, instead of being injurious to health. As a sun-light, with a double tube, it has been thus successfully employed in many public buildings.

The utilisation of heat from stove fires, from hot water, or from gas in ordinary use about a house, is apparently so natural and easy a means of obtaining a motive power to assist in the ventilation of dwelling-houses, that I have noticed them under the head of *natural*, rather than of *artificial* ventilation, to which I must now refer.

Artificial  
Ventilation.

*Artificial ventilation* is ordinarily effected by the action of valves, fans, pumps, screws, furnaces, stoves, or other artificial heat, and a variety of contrivances whereby air is either drawn out of, or forced into an apartment. In the one case, the space occupied by the vitiated air withdrawn, is replaced by an admission of pure fresh air; and in the other the pure air forced into the apartment causes a displacement of the vitiated air, for the escape of which due provision must be made. In both cases, a just proportion between the volume of air which ought to enter, and that which should be expelled, is necessary. In order that the fresh air may be adapted for use at all seasons of the year, means must be provided for warming it prior to its distribution in the apartment. The best means for effecting this is, I believe, by bringing it in contact with heated fire-brick, suitably arranged in stoves or furnaces. When heated iron is used for this purpose, the air is likely to be deteriorated, or, as is commonly said, burnt. Hot water, which is similarly employed, has not this injurious effect.

Suction or  
Propulsion.

Whether suction or propulsion be preferable as a motive power for effecting the change of air in ventilation, is a question which has been much discussed here, as well as in Paris and Brussels. After examining both systems in their practical application, the latter appears to me decidedly preferable, excepting in peculiar cases, where the power of suction may be more readily applied.

When fresh air is forced into an apartment, through suitably placed openings, it becomes more generally diffused than it does when its entrance is dependent on the withdrawal of the vitiated air by means of suction, the tendency of which is to draw the fresh air towards the point of exit, instead of leaving it to disperse and circulate freely. Suction involves the further disadvantage of setting in movement whatever noxious vapours may be within its reach.

Raising the  
Temperature  
without  
Ventilation.

Nothing can be more inconsistent with a healthy system of warming than those arrangements which provide only for raising the temperature of the air already in the apartment, vitiated as it may be. Such is mostly the case when the German hot-air stove is used, and also when hot water is circulated in pipes through the apartments; but either may be employed with impunity as an auxiliary to an open fire.

Whilst artificial ventilation is mainly applicable to public buildings, to manufactories, and to dwelling-houses of considerable magnitude, its principles may often be adopted in cases which are of ordinary occurrence in an architect's practice.

For this reason, as well as on account of the great influence which ventilation exercises on health, more has been said on this branch of my subject than some may consider necessary. I cannot, however, quit it without expressing a regret that the science of ventilation\* has not been more thoroughly mastered and its practical application more simplified than it would seem to be from the Report of the Government Commissioners on Warming and Ventilation (see note, p. 38), known doubtless to many of you, and which, with its mass of practical information, appears to me to have failed in placing the subject in that clear light which was contemplated in the suggestions made by Dr. N. Arnott, in 1849, for an investigation by "a committee of eminent scientific men, comprising chemists, engineers, and physicians."

The Science of Ventilation yet to be mastered.

*Thirdly.*—THE CIRCUMSTANCES WHICH DEPEND MAINLY, THOUGH NOT WHOLLY, ON THE OCCUPANTS THEMSELVES—external and internal cleanliness, and a proper use of structural arrangements—remain to be briefly noticed.

Circumstances dependent on the occupant.

The most suitable provision for rendering a dwelling dry, or for its efficient ventilation, will not secure the health of the occupants if those provisions are not properly used, or if there be around or within the abode an accumulation of dirt, whether in a solid or in a liquid state. Houses may, to all appearance, be very desirable dwellings, but if the drainage be out of order, or if there be cesspools within their precincts, or untrapped and foul sinks, there is no safety for the inmates. Nor can the close proximity of stables be a matter of such indifference as might be supposed from the practice so prevalent in the most wealthy parts of the metropolis; for one inevitable consequence is, that, in the summer, many windows which should be opened for ventilation remain closed, in order to exclude the noxious fumes of the dunghoops.

*Neglect of sanitary laws* is as much manifested in the country as it is in towns, and on the Continent not less than it is in England. It would be easy to point to spots where the air is unrivalled for purity, and the scenery around it of surpassing beauty; and yet the accumulations about the dwellings are such as makes it often difficult to enter the doors without wading through a stream of filth, alike offensive to the sight and to the smell. Can it be a matter of surprise if such violations of the known laws by which God regulates the health of his creatures, be visited with sickness and premature death? With equal certainty as to the issue, we may predict that those who live in close proximity to black and stagnant pools, to foul ditches, or to sluggish open drains, will periodically suffer from fever or dysentery, as we do that the house in flames will be consumed if the destructive element be not extinguished, or that the neglected garden will be overrun with weeds and become a wilderness.

Neglect of sanitary laws.

*Internal cleanliness* in the houses of the *wealthy*, and all that as matters of daily routine are connected therewith, including proper attention to the sinks and traps, as well as the ventilation generally, is, in the main, left to the care of servants†; and often, through their ignorance, rather than their

Internal cleanliness.

\* A simple test, whereby the deterioration of the air could be readily ascertained, is a great desideratum.

† The publication in a cheap form of Miss Nightingale's highly practical "Notes on Nursing" afford the means of conveying many valuable lessons on this subject

Lamentable  
results of  
ignorance.

culpable neglect, the health of the family, and especially that of the younger children, is very seriously injured, without the slightest apprehension as to the cause. Many instances might be cited in proof of a fact which is calculated to arouse even the most self-indulgent, and to induce them to co-operate in such a diffusion of sanitary knowledge as will alone insure that which is dependent on the occupants themselves, a proper use of the structural arrangements essential to a healthy dwelling. Disease may often be communicated to the wealthy through the medium of articles of clothing made in unhealthy dwellings; a fact which, if it were more palpable, might lead even the most selfish to consider their personal interest in the sanitary condition of the houses of working people.

Reluctance  
to bear the  
expense of  
sanitary im-  
provements.

The *middle classes* would contribute less grudgingly than they frequently do, towards the cost of public sanitary improvements, and would even urge their extension, if they were better acquainted with the laws of health and the heavy expenses which their infringement often involves on the community, as well as on individuals; whilst a practical knowledge of those relating to in-door life—whether it be that of the dwelling-house, the manufactory, or the workshop—would lead them duly to appreciate the advantages of cleanliness and good ventilation, and to see that their benefits were extended more generally to those hives of human industry where numbers of working people congregate for many successive hours, and those partly under the deleterious influence of gas light.

Conse-  
quences of  
ignorance  
weighty on  
the labour-  
ing popula-  
tion.

If from a want of knowledge and forethought many in the upper and middle walks of life are debarred the full enjoyment of a healthy dwelling, how much more is it the case in regard to the *labouring population*, most of whom are under the further disadvantage of having scarcely any choice as to the external circumstances of their dwellings, and but little as to the internal accommodation. The difficulties arising therefrom, which working people have to contend with in most thickly populated towns, are well known to be very great. I shall not dwell upon them here, nor attempt to point out the degree in which they are increased by habits of intemperance—the most fruitful cause as well as consequence of domiciliary wretchedness. Such a calculation as would show the probable amount expended by the working population in the metropolis and its suburbs in the 10,200 houses open for the retail sale of intoxicating liquors would be instructive, not only as to one fruitful cause of the evil, but also as to legislative measures, of an indirect character, needed for its removal.

---

to domestic servants. I have endeavoured to give some practical instruction of a more general character, in a lecture entitled “Home Reform; or, What the Working Classes may do to improve their own Dwellings;” an abridgment of which, translated into French and into Italian, has had an extensive circulation on the Continent. Several of the cheap publications issued by the Ladies’ Sanitary Association have the same object in view.

# PART THE THIRD.

ON THE EXTENSION OF THE

## THE BENEFITS OF A HEALTHY DWELLING TO THE LABOURING POPULATION.

READ WITH THE SECOND PART, 20<sup>TH</sup> JANUARY, 1862.

THE numerous discussions bearing on this question, which have taken place in Parliament, in the daily papers, as well as in other periodicals and pamphlets, might lead to the supposition that its importance is now duly estimated by the public; but those who have sounded the depth and scanned the wide-spread extent of the evil to be remedied, well know that such is not the case, and have too often seen the responsibility of contributing to its removal ignored by those who ought to feel its weight; whilst in some deeply to be regretted instances, the want of a due estimate of the difficulties to be overcome, and of the requisite practical knowledge, has led to the pursuit of measures which, owing to their non-remunerative pecuniary results, have tended seriously to retard the progress of the movement which was practically commenced in 1844.

Responsibility too often ignored.

The *pecuniary* features of the question are of such vital importance, from their necessary bearing on the adequate extension of the work, that I cannot here omit the expression of my belief, that if the actual expenditure in providing improved dwellings for the labouring classes in towns had more generally been managed with such discretion as to yield the very moderate return of 4 per cent., or even of  $3\frac{1}{2}$  per cent., after the payment of all expenses and the providing a sinking fund for the repayment of the money laid out, there would have been no difficulty in obtaining from philanthropic capitalists an amount sufficient for building a very large number of improved dwellings, in the metropolis, as well as in our provincial towns; and in evidence that such a return is obtainable numerous examples might be instanced of that and a higher rate of interest on the outlay having been regularly obtained. Whilst some of these will be noticed hereafter, I think it right to remark, in reference to certain exceptional cases, that due allowance should be made for the difficulties and extra expenses attendant on most new undertakings, as well as for the experimental nature of some of the establishments in which the accommodation provided has been of a very mixed character. The results in those instances show, I believe, invariably, that new houses for families yield a better return on the outlay than lodging-houses for single persons, a purpose to which, however, old buildings have been adapted with very satisfactory pecuniary results.

Pecuniary features of the question.

Speculative builders, or those who are merely seeking what is usually called a good investment, would not, of course, consider 4 per cent. a sufficiently remunerative return; but I confess to feeling some surprise

Its aspect in regard to Builders.



that, amongst the many who have accumulated large fortunes in connexion with the building trade in the metropolis, I know of only one firm, that of Messrs. Newson and Son, having so invested a part of the gains derived, in a large measure, from the labour of the working classes. It may, however, be owing to my limited means of information in this respect that I am unable to name other instances in the metropolis, though in Edinburgh several such examples were lately pointed out to me, which I could not but regard with peculiar interest and as well worthy of imitation. Some notice of these buildings is given in my report made at the Glasgow meeting for the Promotion of Social Science. I have also seen with pleasure, in a very useful monthly paper, the *British Workman*, which circulates extensively amongst that class of readers, a view and brief notice of a village near Lowestoft, rebuilt by Sir Morton Peto, which is described as one of the most picturesque villages in the kingdom.

Architects.

Architects have sometimes been reproached for a want of interest, and for exercising so little influence in regard to the improvement of the dwellings of the labouring classes. Knowing, as I well do, how rarely the members of the profession\* have to do with buildings of this class, such a charge is to me only one amongst many other proofs of the prevailing ignorance with regard to the measures and machinery best adapted to remedy the evil in question, and which I shall endeavour, as far as my ability and experience enable me, to point out, unbiassed by any interest whatever, and only actuated by the earnest desire of contributing to an object which I believe is most intimately connected with the physical, the moral, and the religious improvement of the masses of our population.

Measures adapted for effecting the desired reform.

The measures for effecting this much-needed reform may be classified under three heads:—

1. Those of a legislative character, and those for which the Executive Government are responsible.
2. Those which ought to be adopted by landowners and employers generally for the benefit of their dependents, whether as tenants or work-people constantly employed by them.
3. Those which originate from benevolent motives, and are undertaken either by associations or by individuals, in order to help those who need such aid in helping themselves.

In noticing successively these three classes of measures, some illustrative facts will be stated, which are partially the results of observations made during a residence of several years on the Continent for the recovery of health.

Legislative.

In considering the measures of a *Legislative character* it should be remembered that a jealous respect for the rights of persons and property,

---

\* My long and highly-esteemed friends, Mr. Sydney Smirke and Mr. G. Gilbert Scott, have manifested, in their published works, a warm interest in this object; the former, in his "Suggestions for the Improvement of the Western part of the Metropolis," published in 1834,—and the latter in his "Remarks on Secular and Domestic Architecture,"—expatiate on its importance, and propose practical measures; whilst the voice and pen of Mr. George Godwin, in his widely circulated journal, "The Builder," and elsewhere, have been exercised unceasingly for its advancement, and often in vindicating the position and feelings of the members of his profession, with regard to the question generally.

which is our security for many of the inestimable advantages enjoyed under a free government, has a manifest tendency to impede the carrying out of such public improvements as those which, under arbitrary rule, have been effected with unprecedented rapidity, on so gigantic a scale, in the metropolis of a neighbouring country. What I think, in our own metropolis, we have a right to complain of, and ought to feel ashamed of, is the bungling and pettifogging manner in which many of our new streets have been formed, and fine opportunities for obtaining magnificent effects irrecoverably lost. It would be invidious to point them out; they will readily suggest themselves to you.

Time will not allow me to dwell on the important bearing which the formation of new streets has on this subject, or many facts that have come under my own observation might be stated, particularly some with regard to that great financial failure, Victoria-street,\* where several fruitless attempts were made to obtain from the managers, on reasonable terms, back land, as sites adapted for dwellings suited to the displaced population, who, as a necessary consequence of the clearance which had been made, were huddled together in a frightful degree. This is but one example of what has so frequently taken place elsewhere in our own metropolis, owing to the want of a compulsory provision for the displaced poor.

Formation of  
New Streets.

The same neglect on the part of the Government was the cause of an incalculable amount of suffering in Paris, when the people who tenanted its narrow and winding streets were forcibly ejected, and often their few articles of furniture placed on the pavé, they themselves not knowing where to seek shelter. I visited more than once, in the spring of 1858, a kind of encampment of 600 such families, formed not far from the Barrière de l'Etoile, and heard from some of them their pitiable tale, and the exorbitant rent they were paying for temporary hovels, which the police had warned them would be pulled down in three months, and they forced again to go they knew not whither. From a sense of duty, and encouraged by the fact of the Emperor having caused the paper which I read before the Institute in 1850 to be translated and widely circulated in France, I thought it right to bring this subject under his Majesty's personal consideration, in a memorial, which was graciously received, and has, I hope, not been altogether fruitless.

Sufferings  
caused by  
neglect on  
the part of  
Government.

Our own legislative measures tending to give to the labouring population the benefits of a healthy dwelling, only comprised, when I addressed the Institute twelve years since, the passing of the Public Health Act, and the Nuisance Removal and Diseases Prevention Acts. Since then several measures, the necessity for which was dwelt upon in my paper, have been adopted, such as the removal of the tax on windows and on bricks, for both of which we are indebted to the Administration under Lord John, now the Earl Russell; the act for the regulation of common lodging-houses (one of the most, amongst the many, valuable efforts of the Earl of Shaftesbury in this cause); the empowering, under the Labourers' Dwelling Act, the formation and general management of independent local Associations,

Legislative  
measures  
have been  
adopted.

---

\* More recently several piles of Model Houses have been built in this immediate neighbourhood, which are noticed in the Appendix.

formed for providing improved dwellings, on the principle of joint-stock companies, with limited liability. Other bills have been passed for facilitating the construction of improved labourers' dwellings and cottages in Scotland and in Ireland.

During the last session, a bill which would have given to English landowners, tenants in tail, the power of raising money for building improved cottages on their estates, very similar to that already granted in Scotland, was, after it had passed the House of Commons with but little opposition, rejected by a majority of 16 to 13 in the House of Lords. The debate on this occasion had at least the appearance of showing how much less real interest is taken in this question than might have been inferred from several debates, at the opening of the session, relative to the destruction of labourers' dwellings, in consequence of the introduction of railways to the centre of the metropolis. Those debates led to the insertion of clauses in some of the railway bills obliging the companies to provide certain cheap trains, at hours suitable for the conveyance of working people, to and from the precincts of their residences out of town. A standing order, intended to apply to cases in which application is made to Parliament for power to pull down houses occupied by the working population, was passed by the House of Lords in 1853, at the instigation of the Earl of Shaftesbury, but it had, as regards practical results, become a dead letter.

Legislative  
measures  
required.

That further legislative interference is indispensable to the remedying existing evils might be proved by abundant evidence. Excepting within the City of London,\* and in the case of common lodging-houses, no adequate power has yet been granted effectually to check *the evil of over-crowding*, in regard to which the Medical Officer of Health in the City of London thus speaks:—"Without doubt, it is the worst of all the unwholesome influences with which you have to deal; and until it is corrected you will never be secure from those outbursts of disease which appear to set your sanitary measures at defiance." A report made by the Assistant-Commissioner of Police on the condition of single rooms occupied by families in the metropolis, without the precincts of the city authorities, after giving in detail about forty most painfully disgusting examples of overcrowding, says:—"It is evident from these cases, which might be greatly multiplied, that all the evils which the Acts for regulating common lodging-houses were intended to remedy still exist, almost without abatement, in single rooms occupied by families, single rooms so occupied being exempt from the operation of the Act." "The causes are, the avarice of owners, and the poverty or debasement of occupants, and the only hope of improvement seems to be in some legislative enactment."

Overcrowd-  
ing of cot-  
tages.

In regard to the *overcrowding of cottages* in country districts, I might remind you of the numerous letters on that subject which not long since

---

\* The power referred to was conferred in 1851, and, under the supervision of the able medical officer of health, it is exercised with great benefit to the poor, as a diminution in the returns of mortality from 25 to 23 in 1000, traceable to this and other sanitary measures, abundantly proves.

appeared in the *Times*,\* and were but the echo of what has been said and proved so often elsewhere. With a view to obtain reliable statistical returns on this important subject, about eighteen months since, the then Secretary of State for the Home Department was memorialized, and urged by a deputation from the Council of the National Association for the promotion of Social Science, to take advantage of the Census for this purpose, as had been done in Ireland; but, although the unobjectionable character of the inquiry, and the ease with which it could be made, were fully admitted, the application proved wholly fruitless.

A lost occasion for obtaining reliable statistical returns.

After all that has been effected within the past fifteen years by many proprietors in providing improved cottages on their estates, there are yet numbers who need to be made aware of the conditions of some on their own property,† and there is reason to fear that, with regard to other proprietors, their obligations must be pressed home in such a way as they doubtless would be were the Registrar-General enabled to instance flagrant cases of neglect, and to show what the results are by unquestionable facts. I cannot help, therefore, regarding the loss of this opportunity as a matter of very serious regret, especially when it is remembered how little the Government can do directly towards the domiciliary reform so greatly needed amongst the masses of the population.

By legislative enactments can alone be prevented the recurrence of those hardships and other great evils which have arisen out of the selfish system pursued in some "*close parishes*,"‡ where cottages have been pulled down in order to obtain relief from a burthen which is thereby thrown upon a neighbouring parish, regardless of the sufferings endured by the labourer, who is often, as a consequence, compelled to walk several miles to and from his work. A calculation of the positive loss, from the waste of valuable time and strength thus expended, was made by the late Sir Robert Peel; and yet, how many who have labourers in their constant employ need to be convinced that it is as much their interest to care for them in regard to their dwellings, as it is to provide well situated, healthy, and convenient stables for their cattle?

Evil results of "Close Parish" system.

---

\* The writer of one of these letters, "A Berkshire Magistrate," in a note to me lately, says, "I am constrained to confess, that from all I see and hear, unless the Government take up the question honestly and fully, little or nothing will be done to remedy evils which are so fearfully apparent. I brought the matter forward at a full attendance of magistrates in Berkshire last week, and of all the influential persons present, influential especially as regards this momentous question, not one seconded my motion."

† The Duke of Buccleugh, at a meeting in Edinburgh in January 1855, said "he himself pleaded guilty to a great many charges of faults of omission as well as commission. . . . Many tenants had remonstrated with him on the condition of the labourers' dwellings." On another occasion, his Grace said "he had found on his own property in England cottages quite as bad as those in Scotland."

A system of registration of the actual condition and extent of accommodation in existing cottages has been suggested by Dr. H. Acland, of Oxford, which, if generally adopted by proprietors, would doubtless elicit some very startling facts. Mr. Parker, of Oxford, will supply these forms of registration on the receipt of a postage-stamp.

‡ Recent legislation, bearing on the law of settlement, has a tendency to lessen, if it does not entirely remedy this crying evil.

Transfer of  
land.

An amendment of the laws relating to the Transfer of Land would in no small degree facilitate the providing improved cottages, and enable the working classes more easily to become the owners of their own dwellings, an object which has proved in England as well as on the Continent, a very powerful stimulant to forethought and general good conduct.

Undrained  
ground.

The only other legislative measure which I shall point out as being especially needed, is one that would operate generally to prevent the building small houses on undrained ground, and without proper sanitary arrangements. Such a fruitful source of sickness and consequent expense to the public, ought, without doubt, to be entirely interdicted; it is an evil, the extent or the magnitude of which it would be difficult to estimate with accuracy.

As bearing on this and several other points which have been referred to, I may quote the words used two years since by a right hon. gentleman, the present First Commissioner of Works:—"As yet the necessity of protecting life from the influence of poisonous dwellings has not practically been acknowledged, though the principle is in the statute book."

Governments  
of foreign  
countries  
study our ex-  
ample.

It is unnecessary to occupy your time at any length with that which has been done for the object under consideration by the Governments of other countries, where, in numerous instances, our example has been attentively watched, if not followed. In some of these cases I have had the pleasure of tracing the results of my own labours in this cause, abroad as well as at home, rendered in the former mainly through personal intercourse, and the circulation of translated papers.

Measures  
taken by land-  
owners and  
employers of  
labour.

2. In noticing the measures which ought to be adopted by *landowners and employers generally* for the benefit of their dependents, such as tenants, or workpeople in their constant employ, I would refer to a letter from the late Duke of Bedford, given at length in my former paper (p. 19), as the best reply which can be made to the excuses of many, for their neglect of duty in this respect.

The example which was set by his Grace in the building and improving the cottages on his estates in seven different counties involved, in the course of eight or ten years, an outlay of about 70,000*l.* Another instance of princely expenditure on the same object is that of the Duke of Northumberland, which has been estimated at 100,000*l.* The average cost of the cottages built by these two noblemen may be stated at from 90*l.* to 120*l.* each.

Remunerative  
returns.

The question of a *remunerative return* on the outlay in building cottages in agricultural districts, is one which impinges so closely on that of the rate of wages, that I shall not venture on its discussion. It would be hopeless to argue this point with those who think that wages of 8*s.* to 9*s.* per week can properly maintain a working man and his family, as well as pay the rent of a healthy dwelling. With the greatly increased prosperity of agriculture, such a rate of wages appears to me unaccountable, and altogether at variance with equity and sound policy.

Manufac-  
turers.

The efforts made by some of our great manufacturers for the benefit of their workpeople have been in proportion to those just noticed, particularly those in Yorkshire, by Mr. Titus Salt, Mr. Akroyd, and Messrs. Crossley. Many owners of mines, quarries, and works of various kinds, can bear testimony to the great benefits resulting from their expenditure in providing proper dwellings for the people in their employ.

The same has been the case with reference to the cottages built in considerable numbers by several of the leading railway companies. The secretaries of some of them, in speaking on the subject, referred particularly to the great advantage of the men being ready at hand, in case of need, and removed from the temptation presented by public-houses. Government has acted on the same principle in regard to the Police force, and, taking the idea originally from the model lodging-houses, barracks have been built generally for those of them who are unmarried—a good precedent, which might doubtless be adopted in many other instances with much advantage to both employers and employed. In such cases a sufficiently remunerative rent can usually be charged, and its payment be guaranteed by a deduction from the wages.

Railway Companies.

Police Barracks.

A lodging-house, established at Camden-town, by Messrs. Pickford and Co., the well-known carriers, for the unmarried men in their employ, has now 60 inmates: the payment of 2s. 6d. per week by the men, and 1s. 6d. by small boys, covers all expenses and the interest on the outlay, whilst there is “a great improvement in the men as regards orderly conduct, cleanliness, &c.” When visiting this house I noticed a common earter copying a piece of music.

It would be easy to illustrate by many other examples the practical recognition by those who have working people in their regular and exclusive employ, of an obligation to see that they are properly housed, as well as to show the benefits resulting therefrom to both parties. But other measures have yet to be noticed, which will be grouped under the last head, viz.:

3. The measures which originate from benevolent motives, and have been undertaken either by *Associations* or by *individuals*, in order to aid in helping themselves those who need such aid.

Measures taken by Associations and by individuals.

My former paper recited the establishment by philanthropic individuals of two Associations,\* one of which commenced in 1844, and the other in 1845, the building of improved or model dwellings for the working classes in the metropolis.

The first to begin the work practically was the Society for Improving the Condition of the Labouring Classes, which professed only to present a model of each of the various descriptions of buildings adapted to the circumstances of the working classes. In carrying that object into effect, the Society, with an outlay of about 36,500*l.*, established, between 1844 and 1851, six different examples of dwellings, four of new, and two of old, with a public washhouse and baths, as described in my first paper (pp. 5 to 12).

Society for Improving the Condition of the Labouring Classes.

Subsequently, in different localities, three entire courts, called Clark's-buildings, Tyndal's-buildings, and Wild-court were taken; and the condition of the houses, which in two of them was indescribably filthy,† having been completely changed, they were fitted up as separate tenements for

\* As they may be useful for reference, one of the Tabular Statements published annually by both of these Associations, showing the cost of, as well as the receipts and expenditure connected with their establishments, is given in the Appendix, pp. 78 & 79.

† My recollection of the state of these houses, and the sickening effects of a minute examination of the property, is, after the lapse of many years, most vivid.

healthy abodes of families, comprising collectively 275 rooms ; besides which there is a single men's lodging-house, with forty beds.

Comparison of pecuniary return.

From the experience gained by this Society in regard to the pecuniary return obtainable from the renovating and fitting up old buildings, it would appear that a larger return may be expected from men's lodging-houses than from houses occupied by families, as will be seen by the tabular statement given in the Appendix, pp. 78 & 79. Old buildings, often held on a short lease, ought to yield a higher return than new, in order to repay the outlay necessarily incurred in rendering them fit for habitation, which should be provided for by a sinking fund.

The Cost of repairs.

In regard to the cost of repairs, it may be taken as averaging  $\frac{5}{8}$  to  $\frac{3}{4}$  per cent. on new, and 1 to 2 per cent. on old buildings.

The Society for Improving the Condition of the Labouring Classes was, in 1862, enabled by the munificence of Miss Turner, of North Ferriby, Yorkshire, to build a Model Lodging House for families at Hull, containing thirty-two tenements, which let at rents of 2s. 6d. to 2s. 9s. per week. Their architect is Mr. Eyton, under whose direction has also been constructed the Working Men's Club and Dwelling Houses in Old Pye-street, Westminster, which originated mainly in the zealous efforts of another lady, Miss Adeline Cooper, and has, with other kindred institutions, exercised a most beneficial influence over a formerly notoriously debased neighbourhood.

Metropolitan Association.

The Metropolitan Association for Improving the Dwellings of the Industrious Classes, which is the other Society referred to, had, up to 1860, expended on its ten distinct ranges of dwellings, 89,613*l.* 14*s.* 10*d.* ; of which 71,328*l.* 2*s.* 6*d.* was laid out on six separate blocks of dwellings, in different parts of the metropolis, accommodating 395 families. The net return from these buildings, for the year ending 31st of March, 1860, after deducting all current expenses and repairs, amounted to 2687*l.* 4*s.* 4*d.*, being about 3 $\frac{3}{4}$  per cent. on the outlay.

On two lodging-houses for single men—one of them new, with accommodation for 234, and the other old, which provides for 128—the return, owing to the want of sufficient occupants, has involved a considerable loss, which proves that the buildings are either too large, or in some way unadapted to the class of men frequenting their neighbourhood.

Lodging-house at Marseilles.

It is worthy of observation that the same result has attended a similar lodging-house which I have seen at Marseilles, built outside the town, for 150 men, too far from their daily occupation ; whilst many such houses elsewhere, on a smaller scale, accommodating from 50 to 100 men, and near to their work, have fully succeeded ; in some instances they have been gradually increased, which is the case at Leeds and at Liverpool. Of two adjoining houses, built on the Boulevard des Batignolles, in Paris, to accommodate together 203 men, and having on the ground floor a restaurant and café, one was closed three years since. In this instance, however, the failure is doubtless in some degree attributable to defective management.

Limited extent of benefits conferred on the former occupants of renovated houses.

Highly valuable as must be the results of the transformation effected in two of the courts which have been referred to, where filthy dens became decent and healthy dwellings, the actual benefit arising out of these efforts was not conferred, to the extent which might be supposed, on those who were the occupants of the courts when they were taken by the Society ; a considerable portion of them having been necessarily ejected in

order not only to reduce the number of occupants within a due limit, but also to secure a more eligible set of tenants. My own conviction is very decided, that the owners of such property\* should be compelled by the law, either to put it into a healthy condition, to close it altogether, or to part with it at its fairly ascertained value, to those who may be willing to undertake the necessary outlay. At present, the fact of such property being inquired for by philanthropic persons gives to it a fictitious value; and in numerous instances, within my own experience, the object has thus been defeated, or the price paid for the property has been so high, that, with the outlay on repairs, its net return is such as to discourage any further attempts of the same kind. An Act of Parliament passed in 1855, and applicable only to Scotland, contains a clause which, in a certain degree, meets such cases; but it appears to me that the principle involved in the entire prohibition of the sale of articles of food, when in an unwholesome condition, applies, with undoubted equity, to dwellings, and that its legal enforcement is the only way of effectually remedying the evil.

Liability of the owners of unhealthy houses.

I am glad, however, to notice some instances of individual effort, completely successful in improving *old buildings*, and rendering them healthy abodes, the rents of which have yielded a remunerative return on the outlay.

Improvement of old buildings.

In the parish of Chelsea, your honorary member, the Rev. Richard Burgess, and some friends, established, in 1851, two of the earliest renovated houses for families, which have proved an admirable example for those disposed to promote this object in a quiet and unpretending way. The houses are always filled with good tenants, on whom the most favourable results have been produced; and from the net receipts, after the payment of 5 per cent. interest on the outlay, which was 300*l.*, that amount was entirely paid off at the end of eight years, and, since then, there has been a clear profit of between 30*l.* and 40*l.* per annum.

In Chelsea.

To give another example, in London:—A few months since, I went over a considerable property in the city, part of which, in a central locality, comprises dwellings for 86 families of the working class, and, in another, three entire courts. The owner is a private gentleman, who derives his

By a private owner in London.

---

\* This view has, at various times, been urged by the Author, and not without some good results, an instance of which occurred at Florence in 1854, where a personal representation to the Grand Duke of Tuscany led to the issuing a decree which empowered all municipal magistrates, within his territory, who may deem it expedient, to form a commission for providing the means of cleansing and rendering wholesome the dwelling-houses actually let or occupied by any other person than the proprietor, which are in such an unhealthy state as to be dangerous to the life and health of the community. The machinery provided for effecting the proposed object appears to be well devised. Vide *Monitore Toscano*, 9 Octobre, 1854.

In a Report lately made by Mr. Nugent Robinson on the Dwellings of the Poor in Dublin, it is stated that "the wretchedness of their dwellings is mainly owing to a class of people called 'house jobbers,' who buy up dilapidated houses, and re-let them, either by the house or by the room. As a general rule, the jobber remains behind the scenes, while the actor is some low, brutish agent, employed on commission to collect the rents by hook or by crook. The 'jobbers' are utterly averse to ameliorating the condition of their tenants, when any thing like expence has to be incurred. It is to be regretted that many men of social position belong to this class." The existence of the same evil in our own metropolis was pointed out long since.



chief income from house property. On coming into its possession he felt the responsibility of ownership, and desired to put it into a condition fit for the occupation of well-conducted tenants. I can testify to his entire success in that respect, and also to the contrast with the neighbouring property which his presents. All that he was anxious to do has been accomplished without pecuniary loss. His rent-book, kept with much exactitude, shows the greatest regularity of payment, and this he told me compensates for extra expenditures on various objects beneficial to the tenants. The following results of the experience gained in this instance may be useful. Of the gross amount received weekly and monthly for rent, about one-fourth covers the taxes and general repairs, or one-third covers the whole of the landlord's expenditure, including the collection, expenses of schools and medical attendance. A great secret of success has been the forbidding the practice of underletting as a rule, though occasionally a lodger is allowed. Another custom which has the same tendency, is that of the owner going over the property himself frequently. With much consideration and justice to the proprietor, one part of this property was, on a recent application made to Parliament by a railway company for power to take it, treated as an exceptional case, and allowed to remain as an instructive lesson to neighbouring owners: amongst others, to the railway company which coveted its possession.

Society at  
Hastings.

The success which has—doubtless, in the main, owing to careful management—attended the Society at Hastings, renders it worthy of special notice. It was established about five years since, and has now a paid-up capital of 16,000*l.*, of which 14,000*l.* has been expended in purchasing the freehold and putting into good condition about 130 old cottages and two lodging-houses. An annual dividend of 6 per cent. has been paid to the subscribers (now reduced to 5), besides laying by 1 per cent. per annum as a reserve fund. A benevolent fund is formed among the tenants, and two visitors inspect the property every fortnight.

The three examples which have been referred to in succession, after the two metropolitan societies, are instances of *old* buildings having been exclusively operated upon. I shall now briefly allude to some instances in which societies have constructed *new* buildings, with more or less pecuniary success; and as there have been, since 1850, from 25 to 30 such societies established in various provincial towns in England, besides those in London, you will not expect me even to name them all.

Strand Build-  
ing Company.

The Strand Building Company, on their houses for 25 families, in Eagle-court, has paid a dividend of 4½ per cent.

Windsor Royal  
Society.

The Windsor Royal Society, which was established in 1852, under the special patronage of Her Majesty and the lamented Prince Consort, with Major-General F. H. Seymour for its President, has now 9000*l.* invested in new cottages\* and in two lodging-houses; the net return from which, although, owing to temporary circumstances, for a time yielded only 4 per cent. to the shareholders, has generally been from 4½ to 5 per cent.

---

\* The plans given by me for twenty of these cottages, which are in pairs and in blocks of four tenements each, will be found in the Appendix, as well as their cost, p. 125.

Another Society, "The Windsor Royal Association," was established in 1850, at the special desire of the Prince Consort, for promoting habits of neatness and order in cottagers' dwellings, as well as stimulating a spirit of industry. This Society had the inestimable advantage of the constant attention of His late Royal Highness, who, by distributing in person its annual rewards, greatly increased their value.

The Redhill and Reigate Cottage Improvement Society commenced by building 19 cottages, to which 20 more have been added. The contract for the second series was at the rate of 120*l.* 7*s.* 1*d.* per cottage. A dividend of 5 per cent. has been paid to the Shareholders. These cottages are near to the railway station, and have a neat appearance; they resemble much some of those built by the Windsor Royal Society.

Amongst the efforts which may be classed with those of associations, are the model lodging-houses built by the Huddersfield Improvement Commissioners, in pursuance of powers granted by their Acts of Parliament; and this, I have been informed, is the only instance in which municipal authorities have erected such buildings at the public cost, and out of improvement rates. Provision, in this instance, is made for the accommodation of 221 men, 34 single females, and 12 married couples.

The Corporation of the city of London contemplated, in 1855, the construction of several large piles of buildings for the occupation of such of the working classes as were ejected from their dwellings in the formation of new streets; but, actually, nothing has been accomplished.\*

It is not necessary for me to notice at length what has been done in Scotland, where, both in the towns and the country, exertion is quite as much needed as it is in the south. The lack of municipal supervision in Edinburgh † was proved very recently by a melancholy catastrophe, which issued in the death of 35 human beings, and brought prominently into view the way in which the poorer population are huddled together in gigantic buildings of seven and eight stories, divided into dwellings of one and two rooms each. The painful scenes I have witnessed in Edinburgh, there obviously arising in a great measure from drunken habits, rival those met with in any part of the Continent.

In a paper which I read at the Glasgow meeting of the National Association for the Promotion of Social Science, and which is published in the Transactions of the Association for 1860, a somewhat detailed account is given of numerous blocks of improved or model dwellings which have been constructed in Edinburgh since 1850. In several of these, but very recently finished, the external gallery (supported by cantilevers) and open staircase system has been adopted; and in other

\* The imposing pile of dwellings, built by the Corporation of London, in the upper part of Farringdon-street, near Clerkenwell, had not been commenced when this was written; they as well as those built by Alderman Waterlow's Improved Industrial Dwellings Company are referred to in a note, p. 63, and in the Appendix, p. 74.

† The present Lord Provost (1867), Mr. William Chambers, has given much attention to this subject, and since he came into office has presented a scheme, the carrying out of which is calculated to efface a blot that disfigures so greatly the most picturesque of Capitals.

instances, where there is only one upper story, the dwellings in that part—for all are arranged in flats—have their approach on the opposite side of the building to that on which the ground floor is entered, and the access to each dwelling is through its own garden. The Pilrig model buildings, near Leith-walk, is an example of this arrangement; there are 44 houses, the cost of which, including drains, was 92*l.* per house, and they pay to the shareholders a dividend of 5 per cent., exclusive of additions to a sinking fund.

Glasgow.

An association in Glasgow, comprising about 12 spirited gentlemen, is engaged in purchasing the property which will enable them to cut a new street through one of the most miserable “closes,” and to improve right and left that wretched property. Through the exercise of much discretion, the greater part has been obtained for 8 years’ purchase on the rental: 15,000*l.* is advanced for the purpose by bankers, at a moderate rate of interest, on the personal guarantee of the members of the association against loss.

Ireland.

The efforts made in Ireland for improving the dwellings of the working classes may be learned from an address by Lord Talbot de Malahide, and from other papers given in the Transactions at the meeting of the National Association for Social Science in Dublin, 1861.

Reply to a charge often made.

It has been often remarked, in reference to many of the undertakings which have been referred to, “that the *most necessitous* of the working classes are not benefited thereby.” I would, in reply, say that it is the want of such houses, which, in most of our thickly-populated towns, forces so many working people into miserable, crowded, and unwholesome dwellings, where they gradually sink in the scale of physical and moral position, ending their days prematurely. Take one illustrative case, given in a Report by the Metropolitan Police:—“The occupant of room No. 1 stated, ‘I was a strong healthy man when I came into this Court four years ago; now I am fast sinking into the grave. I have scarcely had a day’s health since I have been here.’”

Efforts on the Continent.

The measures for improving the dwellings of the labouring classes, which, from benevolent motives, have been taken by Associations on the Continent, and in the North American States, are so distinctly traceable to our own in England, that it would not be right to pass them entirely over in silence.

In France.

On the *Continent* our example has been much followed. At the Paris Exhibition, 1855, there were many views of workmen’s dwellings erected by their employers. In two of them particularly, the leading features of the Prince Consort’s Exhibition Model Houses were strongly marked. One, constructed in 1853, at Bourges, provides accommodation for four families on the ground floor, and for twenty single men in the upper floor. The other is that of the Cité Ouvrière des Verriers, at Escautpont, near Valenciennes, which comprises, in a central building, schools and other apartments used in common, with some dwelling-houses, but the latter are chiefly contained in two detached blocks, forming the sides of a hollow square. The frequent repetition of recessed entrances, with galleries to the upper floor, is, from the contrast of light and shade, productive of a novel and good effect.

I have visited dwellings for workpeople built by their employers in At Mulhouse. Brussels, at Lisle, and also at Mulhouse, one of the chief manufacturing places in France,\* where, as Dr. Pinôt, the Professor of Applied Sciences, informed me, the idea of constructing a Cité Ouvrière originated in the receipt of the translation of my former lecture, sent by order of the Emperor. It was commenced in 1853, by an association of manufacturers, headed by M. Jean Dollfus, on a scale more extensive and complete than that of any similar establishment in France. A spacious road, planted on either side, runs between the main groups of cottages, and parallel roads run behind them. The houses are chiefly arranged in detached blocks of four dwellings each, placed in the centre of a square plot of garden ground, which is divided equally between the tenants; two of these dwellings front the main central road, and two the minor or back road—an economical arrangement in regard to cost of construction, and one which admits of good internal ventilation, though not so perfect as when houses are built in pairs. The dwellings, though not precisely uniform in their disposition, have mostly a wide entrance, fitted up with a cooking-stove and sink; beyond is a staircase, leading to three bed-rooms and a closet. The remainder of the ground floor is devoted to the living-room, with a large recess behind the staircase, of sufficient dimensions to contain a full-sized bed; this compartment has a side window, and, in some cases, being partitioned off from the living-room, it forms a small separate room. There are, besides these, several rows of double houses, built back to back, each having a narrow strip of garden ground; their arrangement cannot be commended as consistent with good ventilation, and the general appearance of the tenants indicated a decidedly inferior class of occupants. Baths, a washhouse, and a bakehouse, as well as a public kitchen and *restaurant*, conducted by a Société Alimentaire, were opened when I visited the cité in 1856; since which have been added a reading-room, a school, a lodging-house for unmarried men, and one for men on the tramp.

In the summer of 1860 there were completed 480 houses, two-thirds of which had been sold to the occupiers, and 90 more were in the course of construction, land having been bought for 800 in the whole.

The outlay on the roads, fencing and planting, was defrayed out of a Government subvention of 300,000 francs, or 12,000*l.*; being a part of 10,000,000 francs appropriated to such purposes by the Emperor, with a view to stimulate the work in France. The tenants have the option of purchasing the houses by a gradual payment of their cost price, which

---

\* The Familistère, or Workmen's Home, at Guise, not far from St. Quintin, is the The Familistère at Guise. most important recent undertaking of the kind in France known to the author, who visited it in June last,—*vide* "Labourers' Friend" for October, 1866. It differs in most respects from the Cité Ouvrière, at Mulhouse, and was built by M. Godin Lemaire, the proprietor of extensive Iron Works, for his workpeople, about 800 in number. It more closely resembles the Model Houses in Streatham-street, with its open galleries, than any other in England. When completed it will comprise three quadrangular piles of dwellings of imposing exterior, each having an internal court, covered with a glazed roof, and the whole forming a hollow square. There are magazines for supplying the tenants with articles of food, clothing, firing, &c. Well conducted schools are also provided for the children, and a nursery for infants.

ranges from 72*l.* to 120*l.* each, and two-thirds of them have done so, to the very marked benefit of themselves and families, and with the further good result of providing the funds necessary for continuing the buildings, without increase of capital on the part of the projectors, to whom, as well as to M. Emile Muller, of Paris, under whose direction they were built, the greatest credit is due.

In the neigh-  
bourhood of  
Paris.

I have thought that these details may be useful, and perhaps suggestive, with reference to schemes often projected for building workmen's dwellings in large numbers out of our own metropolis, with a view to their occupants being conveyed to and fro by cheap railway trains. With the same object, I notice having seen near Paris an entire village, then all but completed, which had been built by a Parisian tailor for his work-people. It comprises wooden houses, or chalets, for 76 families, 28 intended for single, and 48 for groups of families, each occupying a separate tenement, and having two, three, or four rooms. There are two spacious workshops, and although some defects might easily be pointed out, an air of neatness and order gives the whole a very pleasing effect. Here the work, which is sold in the very heart of the city, and has hitherto been done by workmen residing with their families in miserable, unhealthy, and at the same time high-rented dwellings, will be done under the advantage of abundant light and pure air, greatly to the benefit of the consumer, the employer, and the employed, as well as of the pockets of those who have generally to bear the burden of supporting the working man and his dependents in ease of sickness.

The  
10,000,000*l.*  
appropriated  
by the  
Emperor.

All that was done in Paris, to the summer of 1858, I have seen; and having conversed on the subject with those most competent to form a correct opinion, feel warranted in saying that the good intentions of the Emperor, in appropriating 10,000,000*l.* to the encouragement of this object, in the form of a subvention of one-third the outlay, have not, excepting in a few instances, been duly seconded. Most of those who engaged in the enterprise to any extent appear to have done so exclusively as a commercial speculation, expecting to derive a considerable pecuniary profit, and uninfluenced by benevolent motives. In addition to this unfavourable feature, the leading French Society had a similar misfortune to that which befell one of the earliest established Societies in London, through the misconduct of the then secretary, causing in both instances a very serious discouragement to the work. It is necessary to refer to these adverse occurrences, as they alone will account, in a great measure, for the sudden check which this movement had in both capitals some years since.\*

Turning to a brighter feature of the case, I mention with pleasure, that when passing through Paris last autumn, it was stated to me, on reliable authority, that a very considerable number of suitably arranged dwellings

---

\* Those who desire to know something of the actual condition of the working classes in France, will do well to consult a recent work, "L'Ouvrier," par Jules Simons. Valuable information was also given, on the same subject, in the two Reports presented by Le Vicomte A. de Melun and Le Baron H. de Triquete to the Congrès International de Bienfaisance, held in London in 1862. *Vide* Transactions, published by the National Association for the Promotion of Social Science.

have been recently built in different directions by private enterprise, and with a return of full 8 per cent. on the outlay. Thus, as in our own experience, private enterprise has proved more successful, in a pecuniary point of view, than similar work undertaken by Societies.

The first Society on the Continent to follow the example given in England, is stated by Dr. Huber, who was for some years its secretary, to have been that in Berlin, formed under the patronage of His Majesty the King, to whose enlightened and personal interest in the work I can testify, having on two occasions had the honour of conversing with His Majesty on this subject. At a late meeting of the Society, over which His Royal Highness the Prince Frederick William presided, it appeared that the capital embarked is about 34,655*l.*, and that there are dwellings for about 219 families and 31 workshops; the number of occupants being 1168. The shareholders received a dividend of 4 per cent., and the available addition to the reserve fund amounted in one year to about 3195*l.*, one-half of which was, however, repaid to the tenants. At the same time, the annual meeting was held of a kindred, but smaller, Society, called the "Alexandra Stiftung," by desire of the Emperor Nicholas of Russia, who, at its formation in 1852, gave 1000 roubles to the funds. They amounted, in 1858, to about 21,338*l.*, partly arising out of donations and partly from loans at 4 per cent.

With an express view to the construction of suitable dwellings for the working classes in St. Petersburg, where they are greatly needed, an architect was deputed to visit London about three years since, and a large number of such houses have been built by a company formed for that purpose.

At Frankfort, a Society formed on a strictly commercial principle, to supply a want greatly felt in that city, is now in successful operation, under the guidance of its energetic and philanthropic promoter, Dr. Varrentrapp, who visited England eighteen months ago to obtain information on the subject.

More recently, a gentleman from Bremen has been to me for advice regard to the carrying out of an extensive undertaking, which contemplates the building a very large number of workmen's houses on church property, without the city. The remarkably favourable terms required for the ground, and the unusually low rate of interest sought for by the projectors, prove the earnestness of all engaged in this good cause, and how really anxious they are to meet the necessities of a case, which is here seen to be, as it is in reality everywhere else, most intimately connected with the well-being of the masses of the population. The study of this example might be profitable to some in our own country.

The usual rate of interest which is sought from such undertakings on the Continent appears to be 4 per cent., with a small sinking fund for paying off the capital. In some few instances it is 5 per cent.; and the opportunity is frequently afforded the tenants of becoming the owners of their own dwellings, by a gradual payment, in addition to the rent—a system which renders the dwelling a savings bank, and has been found greatly to stimulate habits of forethought and sobriety.

Much time would be occupied were I to enter on any detailed account of what has been done for this object in other countries besides those named

Society at  
Berlin.

St. Peters-  
burg.

Frankfort.

Bremen.

Rate of inter-  
est sought on  
the Continent.

Countries in  
the North of  
Europe.

- Switzerland and Italy. already. The movement has extended to Norway, Denmark, Sweden, to various towns in Holland, and to Belgium,\* where enlightened views on the subject have been advocated in two International Congresses, held under the patronage of the King and the royal Princes. In Bavaria, and in several of the minor German states, in many parts of Switzerland and Italy, model houses now exist. One of the earliest and best arranged is in Florence; it accommodates 100 families; and another range is in progress. How greatly sanitary improvements have long been needed in most parts of Italy, many of my auditors can testify, whose first recollections of Rome and Naples are of a more recent date than mine, which go back to 1828-29. When at Genoa, in 1856, its chief magistrate told me that the municipality had there been put to an expense of 500,000*l.* sterling during the recent attack of cholera, mainly in relieving those of the population who live in narrow streets and filthy dwellings; and he added, "I can now, from experience, confirm what is stated in the publications you formerly gave me, as to the heavy expense which may be incurred in consequence of a defective sanitary state." It is rejoicing to know that Naples is in this respect greatly benefited by its emancipation from a rule so jealous of the semblance of foreign interference, that, in 1855, our ambassador cautioned me against the attempt to diffuse any of that light which even Cardinal Antonelli had spoken of as being especially needed in Naples.
- Florence.
- Sanitary Improvement greatly needed in Italy
- Naples.
- United States of America.
- A periodical which has a wide circulation in the United States of America, published much of my first paper read before the Institute in 1850, together with plans of the Streatham-street model houses for families; and since then, partly, no doubt, owing to the great interest taken in this object by the late Mr. Abbott Lawrence, American Minister in London during the Great Exhibition, piles of well-arranged model dwellings for families, five stories high, have been constructed in New York and in Boston.† In the former city the return on the capital invested is 4 per cent., and in the latter, 6 per cent.; with reference to which it is stated that "the effect of proving that houses for the poor can be built on the best plan for the health and comfort of their inmates, and, at the same time, be good investments of property, is manifest in many private undertakings. Several large houses have been already built on similar plans; old lodging-houses have been in many instances remodelled and otherwise improved."
- Individual efforts.
- The measures adopted by *individuals*, with a view to aid those in helping themselves who need such aid, remain to be noticed.
- Her Majesty the Queen.
- Our most gracious Sovereign has honoured by her royal patronage, two societies established for this object, which have been already noticed, and has given substantial proofs of interest in their success; whilst the labourers'

---

\* The Belgian Government has published an instructive series of resolutions on the construction of dwellings, which was drawn up and adopted at the meeting of the Congrès Général d'Hygiène, held in Brussels in 1852.

† These buildings in Boston owe their origin to a legacy of 50,000 dollars bequeathed for that purpose by Mr. Abbott Lawrence. His son, Colonel Lawrence, has informed me that they fully realize the desire of their founder, and yield a good return, of which some portion is available for the construction of additional dwellings.

dwellings belonging to Her Majesty abundantly manifest a kind and thoughtful regard for the welfare of their occupants.

Much has been done towards a fulfilment of the desire so happily expressed by an ancestor of our gracious Sovereign, "That a Bible should be placed in the dwellings of all his subjects," and we rejoice at it; but who that knows the actual state of vast numbers of those dwellings can be unaware of the obstacles they present to the profitable reading of that book, and to the embodiment of its holy precepts in the daily life of their occupants?

I have briefly stated some of the efforts made of late for the removal of those formidable impediments to the physical, the moral, and the religious improvement of the masses of the people, and have endeavoured to point out the practical means which are calculated, through their extensive adoption, to diffuse more widely the benefits of a healthy dwelling amongst our labouring population.

It is my conviction that the feeling of a weighty responsibility, which rests much more extensively on the upper and middle classes in regard to this matter than is generally admitted, needs to be pressed home and brought into more active operation than it has hitherto been.

With this view I desire to urge on all the example of that truly great and excellent Prince, whose loss must be long and deeply felt in every branch of effort connected with the objects of social science. And it is with the earnest hope of encouraging and stimulating many to follow in a path which has been trodden by one so illustrious, that I bring before you some of the many and wide-spread results traceable to a single manifestation of the great interest felt by his late Royal Highness in the subject under consideration.

Having applied to the Commissioners for the Exhibition of 1851 for a site on which to construct a model house, they replied, "That a model lodging-house does not come within the design of the Exhibition." A memorial was then presented to his late Royal Highness,\* who immediately expressed the most lively interest in the project, and a desire that the con-

Necessity for  
a feeling of  
responsibility.

Example of  
the late Prince  
Consort.

Exhibition of  
1851.

---

\* A Report on the Dwellings Section in the Paris International Exhibition, 1867, made by Mr. Chadwick, to the Committee of Privy Council on Education, and published in the *Illustrated News*, July 8, 1867, states at its commencement, "that the Model Dwellings erected within the precincts of the great building, with one exception, display no advance in principles, and no important improvement in construction, and in one most important point a falling off from those which the careful judgment of H.R.H. the Prince Consort adopted and displayed in the Model Dwellings which he caused to be erected in connection with the International Exhibition of 1851." Several subsequent references made to these houses, in the same Report, convey an impression so much at variance with the facts as above stated by the author, that it has been deemed necessary to give, though very reluctantly, the following extracts from the Minutes of the October Committee Meeting of the Society for Improving the Condition of the Labouring Classes, as published in the *Labourers' Friend* for November, 1851:—"H.R.H. Prince Albert has written to the Earl of Shaftesbury, as Chairman of the Committee, offering to place the Model Houses at their disposal when removed from Hyde Park; and to Mr. Roberts, as their honorary Architect, H.R.H. has graciously expressed, 'his best thanks for his exertions connected therewith, and the regret which he feels, that the Council Medal awarded for them being merged in the one given to His Royal Highness for the Exhibition



templated structure should be his own by paying its cost. In thus carrying my suggestion into effect I had the privilege of acting for his Royal Highness as honorary architect. With much personal trouble to the Prince, the requisite official consents of four Government departments were obtained for placing the houses in the Cavalry Barrack yard, opposite to the Exhibition. An objection to this site was made by the Commander-in-Chief, the Duke of Wellington, lest they should give rise to a feeling of dissatisfaction in the army with the want of any accommodation for married soldiers; an evil which his Grace apprehended the country to be then unprepared to remedy. I notice this fact in order to show how clearly their effects were foreseen by the great Duke, and how speedily good results arose out of their construction. Within twelve months after the Exhibition, a large and well-arranged lodging-house for married soldiers was commenced near the Vauxhall-bridge-road, by an association of officers of the Battalion of Guards, which has subsequently been purchased by the Government.

Dwellings for married soldiers.

Lord Herbert of Lea.

The Prince's Model Houses.

Their imitation in various places.

The benefits resulting from this first essay soon led the Minister of War to commence building separate dwellings for the married non-commissioned officers and men at the Chatham Garrison; and a grant of 30,000*l.* has been made by Parliament for carrying out the same object elsewhere, at the instigation of that great friend of the soldier, and, I may add, of the labourer also, the lamented Lord Herbert. As recently as April last, that distinguished example of sacrifice to self-denying duty, expressed to me his "hope of seeing a great change in the next few years in the dwellings of the rural population." I mention this as an additional call to zealous effort in the good work, for "the night cometh wherein no man can work."

Amongst the number of visitors to the Prince's Model Houses,\* amounting to upwards of 350,000, many gave evidence of their having duly appreciated the object for which they were placed in the Exhibition, viz., the conveying practical information, calculated to promote the much needed improvement of the dwellings of the working classes, and also of stimulating those whose position and circumstances enable them to carry out similar undertakings, and thus, without pecuniary† sacrifice, permanently to benefit those who are greatly dependent on others for their home and family comforts. The building was adapted for the occupation of four families of the class of manufacturing and mechanical operatives who usually reside in towns, or in their immediate vicinity—those, in fact, by whose labour the larger portion of the objects in the Exhibition had been produced.

The open staircase and gallery, giving access to the upper-floor tenements, were prominent features in the arrangement of these dwellings, and their

---

generally, it is not in his power to give him the Medal, as it was his intention to do, had it been given exclusively for the Cottages, the whole merit of which he considers to be his due." Mr. Chadwick had no part whatever, either in the suggestion or the construction of these cottages.

\* A plan and elevation of these houses is given in the Appendix, p. 121, and their adaptation is shown to blocks comprising a large number of houses, p. 123.

† This point was justly held by H.R.H. to be of primary importance to the adequate extension of the work, and that 7 per cent. was the minimum net return which would induce builders to embark in such undertakings. The estimated cost, as published in detail, of the model block of four houses, was 458*l.* 5*s.* 6*d.*

subsequent adoption in buildings constructed for working people in towns, has come under my notice in Edinburgh, at Liverpool, Ramsgate, Brighton, Windsor, and other places, as well as in London,\* and on the Continent.

The example which may, perhaps, be pointed to in London as bearing the closest resemblance to the original structure, and as best answering in a pecuniary point of view, is at Cowley-street, Shadwell, close to a station on the Blackwall Railway, where a number of miserable dwellings, tenanted by the lowest class of persons, came by inheritance into the possession of a private gentleman, W. E. Hilliard, Esq., of Gray's-inn. Actuated by the most philanthropic views, he decided on endeavouring to improve, not only his own property, but also by example the immediate neighbourhood; and his efforts have been crowned with signal success. The old dwellings have been replaced by an entire street of considerable length; on both sides of which houses for accommodating in the whole 112 families have been built, on the general plan of the Prince Consort's Exhibition model houses, with open staircases, giving access to the upper-floor tenements. The twenty-eight blocks of four houses cost 487*l.* each; and, after allowing for ground-rent and all charges, I can state on the authority of the owner, that "they continue to pay upwards of 6, in fact nearly 7 per cent. as a net return on the investment; and what," he adds, "is perhaps of more consequence, they are almost constantly let, and are appreciated by the tenants, who, as a rule, are pretty stationary, and not migratory, as that class frequently are." The Report of a Public Officer on these houses, laid before Parliament, was to the following effect:

"The erection of these Albert cottages, provided with arrangements essential to health, comfort, and morals, is producing the happiest results in the neighbourhood. Tenants have become sensible of the discomforts and evils of their unwholesome dwellings, and will not remain in, or take houses, without many improvements which formerly they were content to do without, and landlords are finding it to their interest to improve their old houses; and, in constructing new ones, to provide superior accommodation and conveniences."

Scarcely any foreigners who visited the Exhibition of 1851 returned without examining the Prince's model houses, and but few left without carrying back to their several countries some of the publications bearing on the improvement of the dwellings of the labouring classes, which were there abundantly distributed. Opportunities of judging of the effect of this little structure enable me to say that it gave to the movement an impulse such as it has not received from any other single effort, the results of which have spread far and wide. My descriptive account of the building was translated into German and published at Berlin; much of it also appeared in French.

Numerous other instances of *individual effort* might be given, I shall only notice—

---

\* Of those in the metropolis the most important are the piles of dwellings recently built by the Corporation of London, by Alderman Waterlow's Industrial Dwellings Company, and the Gatliff Buildings, belonging to the Marquis of Westminster, completed in 1867.

Cowley-street,  
Shadwell.

Foreigners at  
the Exhibition  
of 1851.

Individual  
efforts.

The Duke of  
Lancaster.

1st. The building in Lambeth, on the property of His Royal Highness the Prince of Wales, as Duke of Lancaster, a considerable range of model dwellings for families, with shops on the ground floor, at a cost of 16,000*l.* The close proximity of extensive gas works has, I regret to say, impeded that full occupation which is almost invariable in such buildings elsewhere.

Lord Kin-  
naird.

2nd. The establishment, by Lord Kinnaird, in Peter-street, Westminster, of some of the earliest renovated model lodging-houses, and his promotion of similar houses in Dundee. In the latter case, the original outlay, as well as the interest thereon, has mostly been paid out of the profits. Although the beneficial operation of the Lodging-house Act has tended to diminish, in some measure, the great necessity for such houses, the adoption of a suggestion made to me by Lord Kinnaird would doubtless prove of great service to those of the working classes who migrate in search of employment. It is "that every town ought to have a model lodging-house, with notice thereof stuck up at the different railway stations."

Miss Burdett  
Coutts.

3rd. Miss Burdett Coutts has contributed in various ways to the object under consideration, the most important of which is the building, under the direction of Mr. H. A. Darbishire, a considerable range of dwellings for working people in Bethnal-green, one of the poorest parts of the metropolis. In the upper part of this structure, which is four stories high, a covered area for exercise, and a play place for children, as well as a laundry, are provided.

Benefit Build-  
ing Societies.

The scope of my paper will only admit a passing remark with reference to Benefit Building Societies,\* of which Mr. Tidd Pratt stated recently that there were 2000 with a paid-up capital of 8,000,000*l.* A machinery so extensive, and having such resources, might, if well directed, accomplish much for the object under consideration; but it is to be feared that many of the houses built in connection with these societies are inconsistent with a healthy and convenient dwelling. This evil, which has been pointed out to me by the late eminent Dr. Southwood Smith, and other sanitary reformers, would probably be most effectually remedied by the circulation of sound views on the subject, through the medium of Mechanics' Institutions and kindred associations. Here is a fruitful field for *individual effort*, in the cultivation of which much assistance might be derived from the exhibition of suitable plans for the dwellings of working people, as well as from small collections of domiciliary appliances conducive to health and comfort.

Collection of  
Sanitary Ap-  
pliances.

A collection of sanitary and other appliances adapted to the circumstances of the working classes,† which was formed under my direction at the Office of the Society for Improving the Condition of the Labouring Classes more than twelve years since, led to the first public exhibition of the kind, on a

\* Those who may desire information as to the working of some of these Societies, will find an account of the origin and progress of four such associations in Yorkshirc, given in a paper read by Mr. J. A. Binns at the Bradford meeting for Social Science, and published in the Transactions of the National Association for 1859. One of Chambers's Social Science Tracts, entitled "Building Societies," may be consulted with advantage for a more extended view of their operations.

† The Economical Museum formed by my worthy friend, Mr Twining, at Twickenham, close to the Railway Station, is a valuable expansion of the same idea. The facilities it affords for gratuitous investigation are calculated to render it highly useful.

very small scale, in the structure placed by that Society in the Exhibition Building\* of 1851, and in the Prince's Model Houses. I had hoped to see this collection continued and increased, when at the close of the Exhibition the houses were removed to Kennington Park, a proposal with that view having been made to the then Chief Commissioner, Lord Seymour. The practical value of such a collection was recognised at the Congrès General d'Hygiène, held in Brussels in 1852, when, on my proposal, "the utility of establishing in each country, and also in the principal centres of the population, a collection as complete as possible,—a kind of Museum, where shall be gathered together models, plans, specimens of materials, &c., relating to hygienic amelioration and progress," was declared unanimously.

Experience having shown me the great necessity for a general diffusion of sanitary knowledge, I was led to follow up this declarative resolution, in regard to the establishment of illustrative Museums, by proposing at the Congrès International de Bienfaisance, held in Brussels in 1856, the following resolution:—"The Congress declares that it is of public utility that the working classes be enlightened by all possible means in regard to the improvement and keeping of their houses in good order. It declares that the instruction of the young in the labouring classes ought to comprise all which relates to the benefits resulting from good ventilation, and the evils resulting from humidity. Lastly, it thinks that the study of the science of preserving health is one which ought to be rendered accessible to all." The unanimous adoption of this resolution by the representatives of upwards of twenty different countries, recognised the wide-spread extent of the ignorance referred to, as well as the serious nature of the evils resulting therefrom.

Extension  
of sanitary  
knowledge.

Amongst *individual* efforts for promoting the object under consideration, the prominence given to it as an object of vital importance, in public addresses by many distinguished statesmen, ought not to be forgotten; those of Lord Palmerston justly carried with them all the weight and high official influence of a Prime Minister.

Within the last five years many Ladies have directed their zealous efforts to objects which tend in various ways to domiciliary improvement. The Ladies' Sanitary Association, the Female Domestic Mission, connected with Bible colportage, and Meetings for the Instruction of Mothers, exercise a highly beneficial influence in this respect.

The Ladies'  
Sanitary  
Association.

Notwithstanding, however, all our recent ameliorations† it is a well-

Sacrifice of  
human life.

\* Of the 79 Council Medals given to British Exhibitors, two were awarded for objects connected with the improvement of the dwellings of the labouring classes. One of them to H.R.H. the Prince Consort, for the Exhibition Model Houses; the other to the Society for Improving the Condition of the Labouring Classes, for "improvement in the construction of bricks, and the improvement of habitations for the labouring classes."

† The beneficial results of sanitary improvements effected within ten or twelve years in several of our large towns are manifest from the following returns, out of nineteen which have been obtained. In the metropolis the death rate has been reduced from 25 in 1000 to about 23; in the Liverpool district, from 39 in 1000 to 26; in the Bradford district, from 28½ in 1000 to 20; and in the Croydon district, from 28 in 1000 to 21. Knowing, however, as we do, that the normal standard is certainly not above 17 in 1000, these results are a proof of our responsibility, as well as an encouragement to perseverance in the discharge of duty.

ascertained fact that tens of thousands of human lives are sacrificed annually in Great Britain through ignorance and the culpable neglect of means within our own power. But, owing to the noiseless and almost imperceptible way in which such multitudes are carried off by preventible diseases, and their homes desolated, we witness no manifestation of the practical sympathy so justly shown by the public, when, through some lamentable accident, a score, or perhaps a hundred miners, are suddenly deprived of life, and their families of the means of subsistence.

When recommending sanitary ameliorations to influential persons on the Continent, the misery and degradation in which vast masses of our fellow-subjects are sunk, owing, in a great measure, to their domiciliary state, has been so often pointed at as a reproach to England, that the words "Physician, heal thyself," have frequently occurred to my mind, as a call to renewed exertion for this object.

Necessity for  
a combina-  
tion of  
measures.

And now, in conclusion, if the remarks offered and the facts stated have tended to show that it is not through the exclusive adoption of any one of the means which have been pointed out, nor by any infallible specific, that the benefits of a healthy dwelling can be extended to all classes of the working population, I yet entertain a sanguine hope that, through the general and earnest adoption of a combination of suitable measures, existing evils will be greatly mitigated, if not entirely rooted out. Such an expectation is warranted by the well-known results of the improvements in our prisons, which are no longer hotbeds of fever\* and of moral contagion as they formerly were, as well as by those of the ameliorations very recently introduced in our military barracks and hospitals, which have led to a diminution by one-half in the mortality of their inmates, as was stated by Mr. Gladstone, when Chancellor of the Exchequer.

Encouraging facts like these should stimulate all to exertion in their various spheres of action, in order that the labouring population may, to use the words of the lamented Prince Consort, adopted for my motto, "participate in the blessings bestowed on us by the Almighty," through the benefits of a healthy dwelling, "but which," in their circumstances, "can only be realized in proportion to the help which we are prepared to render to them."

---

Several illustrative wood engravings have been added to those given in the former editions. Special attention is invited to those on p. 123, on account of their showing arrangements adapted to the circumstances of the lower, as well as the higher paid class of working people in towns, and admitting their occupancy in sets of 2, 3, 4, or 5 rooms, approached by open staircases and galleries, as in the Prince Consort's Exhibition Houses, 1851.

---

\* At the black assizes held in Oxford in July, 1577, the gaol fever spread from the prisoners to the Court, and within two days had killed the judge, the sheriff, several justices of the peace, most of the jury, as well as a great number of the audience, and afterwards spread amongst the inhabitants of the town.

## APPENDIX.

---

### BRIEF NOTICE OF THE CIRCUMSTANCES WHICH LED TO, AND OF THE PROGRESS MADE IN THE MOVEMENT FOR IMPROVING THE DWELLINGS OF THE LABOURING CLASSES.

*Compiled chiefly from Papers contributed by the Author, and published in the Transactions of the National Association for the Promotion of Social Science, for 1858, 1860, 1862, and 1864; in those of the British Association for the Advancement of Science, for 1862; and in the Reports of the Congrès International de Bienfaisance, particularly of that held in London in 1862; with a notice of more recent legislative measures, including those of 1866-7.*

It may be useful as well as interesting to trace the origin and early progressive stages of a movement, the wide-spread necessity for which has, within a few years of its commencement in England, been recognised, and in many cases zealously advocated, in most European countries, and in the United States of America, as well as in the Colonial and other Dependencies of the British Crown.

Although appeals were from time to time previously made, by individuals whose philanthropic or professional pursuits had made them acquainted with evils of long-standing existence, it is only during the last twenty-five years that much attention has been directed to this subject.

The sufferings of the poor during the ravages of the cholera, which in England first broke out in 1832, and was, in the eastern parts of our metropolis, followed in 1837 by a violent and wide-spread epidemic of typhus fever, led the Government department charged with the care of the poor (the Poor Law Commissioners) to institute a searching medical inquiry, and a state of things was revealed which the public generally were ignorant of. A second report, made in 1839, exhibited, as their practical results, excessive disease and premature mortality, together with a fearful amount of physical and moral degradation; whilst, by official returns, it was shown that, in the year ending 25th March, 1838, out of the 77,000 persons who in twelve months received in and out-door parochial relief, 14,000 were the subjects of fever. The statements in these reports produced so deep an impression on the public and on the Legislature, that a combination was at once formed of some of the most distinguished statesmen and philanthropists, with a view to the devising of remedial measures. For that purpose, "The Health of Towns Association" was established in 1839. A Committee of the House of Commons, to pursue the investigation, followed in 1840; whilst the subject was taken up earnestly in the House of Lords by the then Bishop of London, Dr. Blomfield. The first legislative remedial measure was introduced and carried through the House of Lords in 1841, but, owing to a prorogation of Parliament, it never reached the House of Commons. Continued practical attention to the subject was, however, manifested; and, in 1842, the Report of an "Inquiry into the Sanitary Condition of the Labouring Population" was published by the Poor Law Board. Lord Stanley, when alluding to this report in 1857, described it as "a work which from that day to the present has been the text-book of sanitary research."

In May 1842, a Royal Commission for inquiring into the state of large towns and populous districts was appointed. Amongst its members were the Duke of Buccleuch and the late Duke of Newcastle. The final clause of the instructions to this Commission directed inquiry to be made "as to how far the condition of the poorer classes of the people, and the salubrity and safety of their dwellings, may be promoted by the amendment of the laws, regulations, and usages." The first report of the Commission appeared in 1844, and the second in 1845. The mass of evidence which they contain may still be consulted with advantage on many important points; and it will be found that to certain definite conditions about their abodes were traced the true sources of the constantly recurring epidemics which carried off one-half the children born, whilst yet in childhood; destroyed by fever the heads of families, in the prime of life; and deprived this class of the population of more than one-third their

natural term of existence: a result similar to that shown by all the investigations which have been referred to, and fully borne out by the invaluable returns of the Registrar-General.

Of the *measures taken* in consequence of these disclosures, amongst the first in point of date was the establishment, by philanthropic individuals, of two Societies, formed in the metropolis with a view to work out and to exhibit a practical remedy for the great social evils resulting from the state of the dwellings of the working classes—a remedy that would recommend itself to extensive adoption, be the means of stimulating owners of existing houses, from self-interested motives, to improve and render them healthy abodes, and at the same time afford the evidence of practical results in support of appeals to the Legislature for a somewhat unprecedented interference with private property.

One of these Societies, formed in 1842, under the designation of the Metropolitan Association for Improving the Dwellings of the Industrious Classes, is based on the sound and only principle on which it can be reasonably expected that the construction of improved dwellings for the labouring population in towns can be effected on a scale at all adequate to their necessity, viz. that of an investment of capital, with the prospect that, under good management, a fair return on the outlay will be realized.

The other Society, that for Improving the Condition of the Labouring Classes, was established as a professedly model institution, under the patronage of Her Majesty the Queen; H. R. H. the late Prince Consort having been its President, and the Earl of Shaftesbury, Chairman of the Committee. It has received benevolent contributions to the extent of about one half its expenditure in the construction of a series of model or improved dwellings, adapted to the various circumstances of the industrial classes, and the renovation of numerous dwellings which were previously in a wretched and altogether unhealthy condition. As a model Society it has aimed at demonstrating by experience, that with a judicious expenditure and moderate rents, a fair return might be obtained from money so invested. This Society, although not founded until 1844, took precedence in the practical commencement of the work, by beginning in the same year its first range of model houses, whilst the Metropolitan Society did not begin to build until after its incorporation by Royal Charter in 1845.

The earliest and most important *legislative* results of the reports which have been referred to, was the passing of the Public Health Act in 1848, and of the Nuisances Removal and Diseases Prevention Act in 1848 and 1849. These Acts have been subsequently amended. The first named was so in 1858, by provisions in the Act entitled, "The Local Government Act," which effected very important changes, and provided for an extensive application of local government to the carrying out of sanitary and other kindred improvements, without recourse to a central Executive or to Parliament. By this Act the sanitary functions of the late General Board of Health were transferred to the Privy Council, and for the purpose of carrying them out, a medical officer was attached to that department of the Government. This "Local Government Act" was amended in 1860; and again by provisions in the "Sanitary Act, 1866." "The Nuisances Removal and Diseases Prevention Acts of 1848 and 1849" were amended in 1855, and again in 1860, whilst their further amendment was provided for in the second part of the Sanitary Act, 1866.\* Referring to this last named Act, Dr. Letheby, in his recent report on the Sanitary Condition of the City of London, says, "that it requires a very close and constant supervision of the houses of

---

\* The Regulations under the Sanitary Act, 1866, issued with the sanction of the Home Secretary of State, unless very carefully considered, may become oppressive, as well as perplexing in their application; and it is of importance that there should be an uniformity which does not exist in some that have come under my notice, as, for instance, the requiring by the Board of Works of St. Giles's District a space of 400 cubic feet for each person, and that white-washing should be done *four* times in every year; whilst the regulations for houses or parts of houses in the City of London let in lodgings, require, for one person, a space of 300 feet in any room used for sleeping only, and that white-washing should be done *twice* in every year.

the poor. In other respects it is an important amendment of the Nuisances Removal Acts of 1855 and 1860, for it not only enlarges the definition of a nuisance, but it adds considerably to the power of the local authorities in dealing with it."

In 1851, an Act was passed to enable parishes or boroughs, containing not fewer than 10,000 inhabitants, either to build new houses, or to adapt old ones, with a view to provide better lodgings for the labouring classes: power is also granted to raise money and to defray the attendant expenses out of the poor rates, such houses being, as far as possible, made self-supporting.

In the same year, 1851, at the instigation of the Earl of Shaftesbury, an Act was passed for regulating "Common Lodging Houses," a measure second only to the Public Health Act as to its necessity and the importance of its results. This Bill, which was amended in 1853, is in its operation compulsory, and one which local authorities are bound to carry into effect: certain conditions of cleanliness, proper ventilation, and the avoidance of overcrowding, as well as the separation of the sexes are enforced. The subjects, or the classes on which it operates, constitute the lowest portion of the population, as well as artisans and labourers, who are either on passage, or who have not the means of a better home. The want of a power of enforcing such regulations generally, in all tenements in towns let at low weekly rents to the working population, which was granted in the city of London in 1851, and there operates most beneficially, has long been felt and urged in various ways: to what extent "The Sanitary Act, 1866," will affect the much desired improvements remains to be seen.

In 1855, a Bill, entitled "The Labourers' Dwelling Act," was passed for promoting the building of dwelling-houses for the labouring classes, and providing for the registration of Joint Stock Companies formed for that purpose. This legislative measure has greatly facilitated the formation and general management of independent local Associations, conducted on the principle of Joint Stock Companies, with limited liability. Bills have been passed with the same view applicable exclusively to Scotland and Ireland; and in order to facilitate the building of cottages for labourers in those parts of the United Kingdom, separate Acts were passed in 1860. But, strange as it may appear, a Bill for effecting similar objects in England, though passed by the House of Commons in the session of 1861, was rejected by the House of Lords on a division of 16 to 13. This anomaly, however, has been subsequently remedied, by an Act much more general in its operation.

In 1866, an Act was passed to enable the Public Works Loan Commissioners to make advances towards the erection of dwellings for the labouring classes, whereby the carrying out the powers granted in the Act of 1851 are greatly facilitated, as well as the operations of Associations formed for this express object. Railway, Dock, or other Companies who employ the labouring classes, and private individuals holding land for an unexpired term of not less than fifty years, are included in the provisions of this Act, which, on some technical points, has been amended in 1867.

The other legislative measures adopted in England are, the repeal of duties that pressed heavily on the construction, or tended to impede the healthy condition of houses; and the adoption by the House of Lords of a Standing Order, with a view to ascertain the necessity for enforcing the building of suitable dwellings for the working classes, in lieu of such as may be demolished, under powers granted by Parliament for the carrying out of public improvements, or the works of large Companies, such as railways, docks, &c.

Of the *required legislative measures*, not yet adopted, perhaps the most likely to prove extensively beneficial, would be one more imperatively obliging owners of unhealthy dwellings either to put them into a good sanitary condition, to part with them to those who would do so, to close them, or to pull them down; such property would then cease to have the fictitious value which now generally renders it an unprofitable or an inadequately remunerative investment to those who, from benevolent motives, seek the ownership with a view to its renovation. The Bills hitherto introduced into Parliament with this view do not appear to have received that deliberate consideration which the difficulties surrounding it render necessary, in order to their being fully met.

The papers from which the present sketch has been chiefly drawn give numerous details tending to show the spirit which has animated not only those who have been



associated in promoting this object in towns, but also many of our great landowners, as well as the employers of labour in manufactures, mines, and quarries, in providing improved dwellings for their workpeople. Several of these have already been noticed in previous parts of this publication; and an especial reference has been made to the lively interest and the wide-spread influence which the example of the late Prince Consort had in promoting this object, particularly to the impulse it received on the Continent,\* as well as in Great Britain, from the efforts made in connection with the Exhibition of 1851. It is only left for me here to add, that the sense of responsibility, as well as the more distinct perception of self-interest in the domiciliary condition of the labouring population, is extending on every side, and their fruits may be seen in all parts of the country, although, in too many instances, at a rate by no means corresponding with the urgency of the case, and that, more especially in regard to the metropolis.

A declarative resolution proposed by the Author, and unanimously adopted at the Congrès International de Bienfaisance held in Brussels in 1856, refers to an important practical measure, in the general adoption of which it is to be hoped that England † will not be behind the Continent. "The Congress declares that it is of public utility that the working classes be enlightened by all possible means in regard to the improvement and the keeping of their houses in good order. It declares that the instruction of the young, in the labouring classes, ought to comprise all which relates to the cleanliness of their persons and of their dwellings, to the benefits resulting from good ventilation, and the evils arising from humidity. Lastly, it thinks that the study of the science of preserving health is one which ought to be rendered accessible to all."

At the Ninth Annual Meeting of the Congress of German Political Economists, held at Hamburg, as recently as the month of August of the present year, 1867, and attended by 305 members, the subject for discussion was "the Dwellings of the Poor in large cities." A leading member expressed the opinion that the general endeavour of the people to obtain a better class of dwellings was not the consequence of a greater desire for luxury, but rather the necessity that was felt for pure air and more room as a condition of health.

This opinion agrees with an observation made to me not long since by an English nobleman, a distinguished agriculturalist, that landlords are beginning to find their tenants insist on having good cottages on their farms, because good labourers are otherwise unobtainable.

---

\* In a pamphlet on "The Physical Condition of the Labouring Classes, resulting from the state of their Dwellings, and the beneficial effects of Sanitary Improvements recently adopted in England," which was written mainly for circulation in French on the Continent, the Author has given the following statistics of the mortality in the principal cities and countries of Europe, which may be useful for comparison:—

|                            |                           |                             |
|----------------------------|---------------------------|-----------------------------|
| In London . . . 24 in 1000 | In Genoa . . . 31 in 1000 | In Stockholm . . 39 in 1000 |
| Berlin . . . 25 "          | Lyons . . . 33 "          | St. Petersburg, 41 "        |
| Turin . . . 26 "           | Hamburg . . 36 "          | Vicuna . . . 49 "           |
| Paris . . . 28 "           | Moscow . . 38 "           |                             |

The mortality of different countries is—

|                             |                             |                              |
|-----------------------------|-----------------------------|------------------------------|
| In England . . . 23 in 1000 | In Holland . . . 24 in 1000 | In Sardinia . . . 30 in 1000 |
| Denmark . . . 23 "          | Sweden . . . 24 "           | Austria . . . 31 "           |
| France . . . 23·5 "         | Prussia . . . 28 "          | Russia . . . 36 "            |

† From a very recent inquiry in Parliament it would appear that the introduction of an elementary and popular Treatise on Sanitary Science in the list of books used by the National Schools in Ireland is contemplated. Popular Lectures on Sanitary Science are now delivered in some towns in Italy, as well as in other parts of the Continent.

## APPENDIX

---

### GENERAL VIEW OF THE EFFORTS MADE FOR IMPROVING THE DWELLINGS OF THE LABOURING CLASSES IN THE METROPOLIS, AND THEIR BENEFICIAL RESULTS.

THOSE who practically commenced this movement in 1844 proposed to prove by experiment what had previously been often asserted—

1. That houses having good drainage, efficient ventilation, an ample supply of water, and combining every thing essential to the health, comfort, and moral habits of the labouring classes, may be built and let to them at rents not exceeding those generally paid for very inferior and unhealthy dwellings, yielding at the same time a fair return on the capital so invested. That old buildings may also, on the same principle, be improved and rendered healthy dwellings.
2. That under the influence of efficient sanitary regulations in regard to his dwelling, the working man and his family may reasonably expect a much larger measure of health and life than statistical returns show that they generally enjoy, and which fall greatly short of the portion shared by the more wealthy classes.
3. That the improvement of the dwellings of the working classes will greatly conduce to raise large masses of this portion of the community from the state of moral and social as well as of physical degradation in which they are sunk.

Whilst the full accomplishment of the object, in its pecuniary aspect,\* will be regarded variously, according to the views entertained of a *fair return* on the capital invested in such houses, there can be no question as to the beneficial results of efforts which have led to an average annual reduction in the death rate of the tenants in the Improved Dwellings to 17 per 1000, as compared with 23 to 24 per 1000, now the general average in the metropolis and large towns of England.

After a lapse of ten years, from the building of the first model houses, the influence of such dwellings was thus described in an Official Report made by Mr. Glover, Superintending Medical Inspector of the General Board of Health, the 20th January, 1855, and laid before Parliament:—"Some of these houses have been occupied nearly three years, and the average population during that period, for the whole of the houses tenanted, has been about 450. Among this number of inhabitants, congregated in one of the worst localities of the metropolis, a large proportion of them being children, it is gratifying to find that there has been a considerable diminution, if not an almost total absence of epidemic disease. During the late epidemic there has not been a single death from cholera or diarrhoea in any of the houses." "The erection of these 'Albert Cottages,' provided with arrangements essential to health, comfort, and morals, is producing the happiest results in the neighbourhood. Tenants

---

\* The Author's views on this important branch of the question have been stated in Part I. (see p. 17), and again in Part II. (see p. 45). He has never entertained the hope of a higher return than that of 6 to 7 per cent. *net* being obtainable from new, well-constructed dwellings, let to working people at *moderate* rents, and of that only after a realization of the benefits obtainable from the experience of pioneering efforts. In more than one instance the caution he has given against exaggerated expectations, and the commencing by a payment of a higher rate of dividend than could be maintained, has been fully justified by the results. The view entertained by the late Prince Consort on the question of return, and repeatedly expressed to the Author, was, that in order to induce *Builders* so to invest their capital, 7 to 8 per cent. would be necessary; which is very different from the assertion sometimes made, that in order to induce *Capitalists* so to invest their money, 9 or even 10 per cent. must be obtainable.

The loan of money by Government, on the security of such buildings, at 4 per cent. (see pp. 69 & 72) should increase, by not less than 1 or 2 per cent., the return available for those who find the remaining half of the capital.

The appropriating of the ground-floor to shops has in some localities proved remunerative, and been the means of raising the per-centage return: judgment is, however, required with regard thereto.

have become sensible of the discomforts and evils of their unwholesome dwellings, and will not remain in or take houses without many improvements which formerly they were content to do without, and landlords are finding it to their interest to improve their old houses, and in constructing new ones, to provide superior accommodation and conveniences."

In entire accordance with this statement was that made to the Author by a superintendent of one of the establishments belonging to the Society for Improving the Condition of the Labouring Classes, situated in a neighbourhood amongst the worst of the metropolis:—"The nocturnal uproars in the adjoining streets, which constantly disturbed the inmates, when first the houses were opened, gradually diminished, and finally ceased altogether." They have, in their ameliorating influence, thus acted as silent monitors, repressing disorder, and encouraging cleanliness and propriety.

The last published Tabular Statements of the two pioneering Societies, given at pp. 78 and 79, show the extent of their operations to the present time, as well as the cost and current expenditure of each establishment; whilst the preceding returns of the tenants' trades and occupations, p. 77, disprove the assertion, occasionally made, that the occupants of the houses are not of the class for whose benefit they were intended.

The Metropolitan Association has a Guarantee, or Sinking Fund, of about £3000, and now pays its Shareholders a dividend of  $3\frac{1}{2}$  per cent. per annum, with the prospect of increase. For the purpose of extending its operations, and with a special view to building at Penge, on the line of the London, Chatham, and Dover Railway, additional cottages for workmen employed in London, who that Company will convey daily to and fro for 2s. per week per head, a Government loan of £18,000, under the Labouring Classes' Dwelling-house Act, 1866, has been recently obtained. This Act effects what the Author long since pointed out as one of the means whereby the Government might consistently render aid in the providing dwellings for the working classes, and it contains an empowering clause, the desirableness of which he suggested to Mr. Childers, during the progress of the Bill, authorizing Railway, Dock, or Harbour Companies, or any other Company or Association for trading or manufacturing purposes, who employ in their business persons of the labouring class, to erect, either on their own land or any other lands ("which they are hereby authorized to purchase and hold for the purpose"), dwellings for the accommodation of the persons so employed by them, and granting them the same powers of borrowing, as the Act confers on any other body or proprietor.

After many ineffectual appeals, the Metropolitan Association has been relieved of the onerous charge of house duty on their dwellings for families, and as the exemption applies to other cases, the letter announcing the same is given:—

*Treasury Chambers, 6th June, 1866.*

"SIR,—The Lords Commissioners of Her Majesty's Treasury, having had before them a Memorial from the Metropolitan Association for Improving the Dwellings of the Industrious Classes, pointing out that some of the dwellings erected by that and kindred Associations have been charged to the Inhabited House Duty, though each distinct tenement is of a less value than £20, I am directed by their Lordships to acquaint you that they have authorized the Commissioners of Inland Revenue to afford relief in the present and all similar cases. The enclosures to the Memorial are herewith returned.

"I am, Sir, Your obedient Servant,

C. GATLIFF, ESQ.

"H. C. CHILDERS."

The Metropolitan Association has, by an arrangement with the Marquis of Westminster, who finds the capital at a low rate of interest, undertaken the carrying out of plans, and the management of an extensive pile of Model Dwellings in Pimlico, to accommodate 149 families, in tenements chiefly of two and three rooms. They are designated Gatliff-buildings, and are near the new barracks, Chelsea Bridge-road. The architect, Mr. Thomas Cundy, jun., has adopted the open gallery system, carried round three sides of an internal quadrangle, similar to the Model Dwellings for Families in Streatham-street, Bloomsbury, where the special advantages of such an arrangement for children, was pointed out to me by an eminent physician, soon after it had been opened in 1850.

In a record of the movement for providing Improved Dwellings for the Working Classes in the Metropolis, the most important individual effort, considering the magnitude of the fund which is rendered available for that object, claims a special notice. It is that of George Peabody, Esq., an American merchant, long resident in London. Actuated, doubtless, by feelings akin to those of his friend the late much-esteemed Ambassador from the same country, Mr. Abbott Lawrence, who, whilst he was in England, took a deep interest in the plans then carrying out for this object, and bequeathed 50,000 dollars for the building of model houses in his native town of Boston, U. S., Mr. Peabody, in a letter dated 12th of March, 1862, addressed to the United States Minister, to Lord Stanley, M.P., Sir J. Emerson Tennent, Mr. C. M. Lampson, and Mr. J. S. Morgan, announced his intention to attest his gratitude and attachment to the people of London, among whom he had spent the last twenty-five years of his life, by devoting £150,000 to ameliorate the condition, and augment the comfort of the poor, who form a recognised portion of the population of this great metropolis, subject to the condition that the fund shall "now and for all time be administered without distinction of religious persuasion or political bias." The utmost latitude was given to the Trustees in deciding on the mode of expenditure, whilst it was suggested by the munificent donor "to apply the fund, or a portion of it, in the construction of such improved dwellings for the poor as may combine, in the utmost possible degree, the essentials of healthfulness, comfort, social enjoyment, and economy."

The Trustees, influenced by the considerations stated at length in their Report of December, 1865 determined, "without precluding the consideration of other subjects hereafter, to confine their operations for the present to the object specially recommended to their notice by Mr. Peabody, namely, the improvement of dwellings for the poor of the metropolis," and they have purchased land for building sites in five different localities—Spitalfields, Islington, Shadwell, Chelsea, and Bermondsey. On the first three-named of those sites, large and commodious piles of buildings have been erected. The accommodation they provide is given in the Tabular Statement, as well as their cost, exclusive of the land, on which, £25,883 has been expended for the five localities. For these details I am indebted to their architect, Mr. Darbishire.

In their first Annual Report (December 1865), the Trustees name, as an obstacle to the usefulness of their proceedings, that which has been previously felt by others, "the large amounts levied on their buildings for poor's rate, inhabited house duty, income tax, and general assessments for sewers and drainage;" and they add, that, "looking to the fact that the fund they administer operates to the repression of the rates for the poor, in proportion to the numbers whom it saves from becoming chargeable on the public, it seems to present a reasonable ground for exemption; but as the levy is made conformably to law, they are content to express a hope that the Legislature may be induced to take the subject into consideration, with a view to the early application of a remedy."

In regard to the inhabited house duty, relief has been already afforded. See Mr. Childers' letter, p. 72.

The last Report issued by the Trustees, under date 31st of December, 1866, mentions the addition of £100,000 made by Mr. Peabody, in the preceding January, to his original gift, which now therefore amounts to £250,000, with the accumulation of interest; and it is added, that in dedicating this further amount to the same object, he has enlarged the sphere of its usefulness, by enabling the Trustees to possess themselves of freehold sites at any locality within ten miles from the Royal Exchange accessible by means of railways.

## GENERAL STATEMENT OF IMPROVED, OR MODEL DWELLINGS FOR WORKING PEOPLE IN THE METROPOLIS.

| Name of Association or of the Owners of the Property.                               | Office Address.                      | Date of Report quoted from.                  | Number of Distinct Groups of Buildings, and their general character.                   | Amount of Capital or outlay.<br>£. s. d.                       | Last Dividend.                    |
|---|--------------------------------------|--|--|--|-----------------------------------|
| Society for Improving the Condition of the Labouring Classes.                       | 21, Exeter Hall, Strand.             | 22d Annual Report, June, 1866.               | 4 new (one of which has been sold), 5 old buildings renovated (see Tabular Statement). | 37,485 8 0   | See Tabular Statement, p. 78.     |
| Metropolitan Association for Improving the Dwellings of the Industrious Classes.    | 19, Coleman-st., City.               | 22d Annual Report, June, 1866.               | 8 new, 2 old buildings renovated, (see Tabular Statement, p. 79).                      | 100,200 0 0  | 3½ per cent.                      |
| Marylebone Association . . . . .  | 65, Marylebone-road . . . . .        | 12th Annual Report, June, 1866.              | 5, chiefly old buildings, renovated . . . . .  | 16,439 4 5   | 2 per cent.                       |
| Central London Dwellings Improvement Company.                                       | 13, Cook's-court, Lincoln's-inn      | 10th Report, 12th December, 1866.            | 8 old buildings, renovated . . . . .   | 10,080 0 0   | 3 per cent.                       |
| Strand Building Company . . . . .   | 157, Strand . . . . .                | 9th Annual Report, 26th January, 1867.       | 1 new, in Eagle-court, Strand . . . . .  | 5,000 0 0  | 4½ per cent.                      |
| London Labourer's Dwelling Society (Limited).                                       | 3, Charlotte-row, Mansion-house      | 11th Half-yearly Report, 28th February, 1867 | 10 partly new, but chiefly old buildings renovated.                                    | 29,583 14 8  | 5 per cent.                       |
| Improved Industrial Dwellings Company (Limited).                                    | 2, West-street, Finsbury-circus      | 7th Half-yearly Report, 14th February, 1867. | 7 new buildings, with external galleries . . . . .                                     | Nominal, £250,000<br>Subscribed, £63,775                       | 5 per cent.                       |
| London Corporation Buildings . . . . .  | Guild-hall . . . . .                 | 4th April, 1867 . . . . .                    | 1 new building, with external galleries, Faringdon-road.                               | 54,051 0 0   | Estimated return over 4 per cent. |
| London City Baths, Laundry, and Dwellings Company (Limited), Golden-lane, Barbican. | 3, Adelaide-place, London-<br>Bridge | . . . . .                                    | 1 new building, for 80 families, 168 rooms, and 12 shops, rents 4s. 6d. to 7s. 6d.     |  |                                   |
| Working Men's Club and Dwelling-house . . . . .                                     | Old Pye-street, Westminster.         | Opened, July 1866 . . . . .                  | 1 with 60 tenements of 1, 2, and 3 rooms, rents from 1s. 9d. to 4s. 3d.                | Capital advanced by the Marquis of Westminster, at 3 per cent. |                                   |
| Gatcliff-buildings, Commercial-road, Chelsea,                                       | 19, Coleman-street . . . . .         | . . . . .                                    | 1 new building, with external gallery, to accommodate 149 families.                    | Capital advanced by the Marquis of Westminster.                |                                   |

## BUILDINGS ERECTED FROM THE DESIGNS OF MR. II. DARBISHIRE, ARCHITECT.

| Name and Address of Building.  | Owner.                                     | Opened.               | Accommodation.   | Cost.      |
|--|--|-----------------------|--|------------|
|  |  |                       |  | £ s. d.    |
| Victoria Lodging House, for married Soldiers, Francis-street, Westminster. | Government . . . .                         | August, 1854 . . . .  | 54 dwellings, or 112 rooms.<br>50 of 2 rooms at 3s. per week.<br>4 of 3 " at 4s. 6d. "   | 6690 0 0   |
| Columbia Square, Bethnal-green . . . .                                     | Miss Burdett Coutts . . . .                | May, 1862 . . . .     | 189 dwellings, or 410 rooms<br>58 of 3 rooms at 4s. to 5s. 6d. per week.<br>101 of 2 " at 3s. to 4s. 6d. "<br>29 of 1 " at 2s. to 2s. 9d. "  | 43,765 0 0 |
| Rochester Buildings, Victoria-street, Westminster                          | William Gibbs, Esq. . . .                  | January, 1864 . . . . | 168 dwellings, or 334 rooms . . . .<br>34 of 3 rooms 4s. 9d. to 5s. per week.<br>95 of 2 " 3s. to 4s. 6d. "<br>38 of 1 " 2s. 3d. to 2s. 9d. "  | 32,377 0 0 |
| Peabody Buildings, Commercial-street, Spitalfields.                        | The Trustees of Mr. Peabody's Fund . . . . | March, 1864 . . . .   | 57 dwellings, or 120 rooms, and<br>9 shops with Dwellings . . . .<br>6 dwellings of 3 rooms at 5s. per week.<br>47 " of 2 rooms at 3s. 6d. to 4s. "<br>3 " of 1 " at 2s. 6d. "<br>1 shop and dwelling, £100 per annum.<br>7 " " £15 to £55 each.<br>1 " " £20 per annum. | 25,940 0 0 |
| Peabody Square, Green-man's lane, Islington.                               | As last . . . .                            | January, 1866 . . . . | 148 dwellings, or 308 rooms . . . .<br>32 of 3 rooms at 5s. per week.<br>96 of 2 " at 4s. "<br>20 of 1 " at 2s. 6d. "  | 35,066 0 0 |
| Peabody Square, Shadwell . . . .   | As last . . . .                            | January, 1867 . . . . | 200 dwellings, or 416 rooms. . . .<br>40 of 3 rooms a 4s. 9d. to 5s. per week.<br>136 of 2 " at 3s. 6d. to 3s. 9d. "<br>24 of 1 " at 2s. 3d. to 2s. 6d. "  | 43,369 0 0 |

INDIVIDUAL EFFORTS NOT COMPRISED IN THE PRECEDING  
STATEMENT.

- In Black-horse yard, near Rathbone-place, the Rev. Thomas Ainsworth, Rector of Kimbolton, expended, in 1841-2, about £3000 in the building of 40 improved tenements, consisting of two rooms each, which let at 3s. 6d. per week.
- In Great Peter-street, Westminster, one of the earliest renovated, or Model Lodging Houses for Men, was established by Lord Kinnaird.
- In New-street, Dorset-square, in 1849, at the cost of J. H. Harlowe, Esq., a building, which provides 18 tenements of two and three rooms each, was constructed and let at 3s. 6d. to 5s. per tenement.
- In Cowley-street, Shadwell, W. E. Hilliard, Esq., of Gray's Inn, rebuilt an entire street of wretched houses, on the general plan of the Prince Consort's Model Houses, to accommodate 112 families, which yield from 6 to nearly 7 per cent. net on the outlay, as described at p. 63.
- In Grosvenor-mews, near Berkeley-square; in the Parish of St. George, Hanover-square; in Bull-head court, Snow-hill, and elsewhere, five piles of Improved Family Dwellings have been constructed by Mr. John Newson, a builder, in tenements of two and three rooms, which let at rents of 3s. 6d. to 5s., yield a net return of about 5½ per cent. on the outlay of £13,200. These buildings have all open galleries. In the planning of those in the first named locality my advice was sought and gladly given.
- The renovated Houses for Families in Chelsea—the Onslow Model Dwellings, built by Mr. Freake—the Victoria Chambers, Ebury-street—the Albion Chambers, Dean-street, Soho—the Dormitory for Girls, Dudley-street, St. Giles'.
- Amongst improved suburban dwellings may be named those built at Hampstead, by Messrs J. and H. Jackson, solicitors—the Coleridge Buildings, containing nearly 100 rooms, recently constructed by the Highgate Dwellings Improvement Company—those of Mr. Mortimer, at New Cross—and a series of cottages at Lower Norwood, belonging to a Co-operative Building Company. These two latter are mentioned favourably in the Society of Arts Report of 1864, on the Statistics of Dwellings Improvement in the Metropolis, which, in addition, names a few other suburban buildings of minor importance.

Efforts to provide improved dwellings for the working classes, made at the following places, have, with a few exceptions, led to the establishment of local associations for effecting that object :—

|             |               |                     |                  |
|-------------|---------------|---------------------|------------------|
| Bath.       | Hampstead.    | Macclesfield.       | Southampton.     |
| Birkenhead. | Hastings.     | Newcastle-on-Tyne.  | Sunderland.      |
| Bradford.   | Highgate.     | Norwich.            | Torquay.         |
| Bristol.    | Hertford.     | Nottingham.         | Tunbridge Wells. |
| Brighton.   | Huddersfield. | Ramsgate.           | Windsor.         |
| Cambridge.  | Hull.         | Red Hill & Reigate. | Wolverhampton.   |
| Dudley.     | Leeds.        | Rumsey.             | Worcester.       |
| Halifax.    | Liverpool.    | Shrewsbury.         |                  |

In Scotland, Societies have been established in Edinburgh, in Glasgow, at Greenock, at Aberdeen, Dundee, and Perth; and Ireland has its Society established in Dublin.

## LIST OF TENANTS' TRADES AND OCCUPATIONS.

IN THE HOUSES OF THE SOCIETY FOR IMPROVING THE CONDITION OF THE

LABOURING CLASSES.

|                     |                           |                                |                    |                  |
|---------------------|---------------------------|--------------------------------|--------------------|------------------|
| Artist . . . 1      | Coach-maker, 1            | Furriers . . . 3               | Librarian . . 1    | Sadlers . . . 2  |
| Bricklayers . 3     | Carpenters . 14           | French-polishers . 3           | Modeller . . 1     | Stonemasons, 6   |
| Brass-finishers . 2 | Coach-trimmers . 3        | Gasfitter . . 1                | Machinist . . 1    | Soap-maker, 1    |
| Bookbinders, 6      | Commission Agents . 12    | Grocers . . . 2                | Messengers . 3     | Servants . . 5   |
| Bootmakers, 9       | Chemist . . . 1           | Grooms . . . 3                 | Missionary . 1     | Scale-maker, 1   |
| Butcher . . . 1     | Carvers and gilders . . 6 | Hatters . . . 2                | News-agent. 1      | Silversmiths, 2  |
| Blacksmiths, 4      | Cellarmen . 3             | Harness-maker . . 1            | Nurses . . . 2     | Sawyers . . . 2  |
| Bag-maker . . 1     | Cork-cutters, 2           | Hairdressers, 7                | Optician . . 1     | Tailors . . . 14 |
| Butler . . . 4      | Charwomen. 22             | Hawkers and Costermongers . 18 | Plasterers . 2     | Travellers . 2   |
| Brewers . . . 1     | Decorators . 3            | Instrument-maker . . 1         | Painters . . 17    | Trunk-makers, 2  |
| Bakers . . . 2      | Drapers . . . 8           | Ironfounder, 1                 | Plumbers . . 3     | Turners . . . 3  |
| Bailiff . . . 1     | Dressmakers, 2            | Jeweller . . . 1               | Police-officers, 6 | Tinworker . . 1  |
| Bill-posters . 5    | Dealers . . . 6           | Labourers . 202                | Porters . . . 23   | Toy-maker . . 1  |
| Cabinet-makers . 6  | Dyers . . . 8             | Label-maker, 1                 | Printers . . 16    | Upholsterer, 1   |
| Compositors. 6      | Engraver . . 1            |                                | Pump-makers, 2     | Wood-carver, 1   |
| Clerks . . . 18     | Engineers . 2             |                                | Pensioners . 2     | Whip-maker, 1    |
| Cabmen . . . 2      |                           |                                | Reporters . 3      | Waiters . . . 3  |
|                     |                           |                                | Shopmen . . 8      | Writers . . . 7  |
|                     |                           |                                | Sempstresses, 16   | Total . . . 576  |

IN THE HOUSES OF THE METROPOLITAN ASSOCIATION FOR IMPROVING THE DWELLINGS

OF THE LABOURING CLASSES.

|                         |                       |                        |                        |                          |
|-------------------------|-----------------------|------------------------|------------------------|--------------------------|
| Actor . . . . 1         | Coach-smith, 1        | Gate-keeper, 1         | Plasterers . . 2       | Sadlers . . . 6          |
| Artists . . . 3         | Coach-maker, 1        | Grooms . . . 2         | Painters . . 13        | Sailor . . . . 1         |
| Auctioneer . 1          | Chemists . . 6        | Glass-blower, 1        | Plumbers . . 4         | Stone-masons, 2          |
| Agents . . . 3          | Cellarmen . 3         | Grocers . . . 6        | Police-men . 11        | Stokers . . . . 3        |
| Attendant at Museum . 1 | Candle-maker, 1       | Glazier . . . 1        | Police-officers . 2    | Ship-keeper . 1          |
| Armourer . . 1          | Coopers . . 10        | Gasfitter . . 1        | Pianoforte-maker . . 1 | Salesman . . . 1         |
| Bricklayers . 4         | Coalheaver . 1        | Hair-dresser, 1        | Parasol-maker . . 1    | Secretary . . 1          |
| Booksellers . 2         | Carmen . . . 25       | Hammerman, 1           | Porters . . . 35       | Servants . . . 8         |
| Bookbinders, 5          | Curriers . . 5        | Hatters . . . 2        | Portmanteau-makers . 2 | Stationers . . 3         |
| Boiler-maker, 1         | Custom-officers . 4   | Horsehair-sorter . . 1 | Perfumers . . 1        | Stereoscope-maker . . 1  |
| Button-maker, 1         | Carpet-planer . . . 1 | Horse-keepers, 2       | Packers . . . 2        | Seale-maker, 1           |
| Butchers . . 7          | Clickers . . . 2      | Iron-moulder, 1        | Perfumer . . 1         | Surveyors . . 2          |
| Blacksmiths, 3          | Chairmaker . 1        | Ivory-turner, 1        | Pier-man . . 1         | Tallow-melter, 1         |
| Basket-makers . 6       | Cheesemonger, 1       | Ironmongers, 2         | Pattern-maker . . . 1  | Teacher of Music . . . 1 |
| Billiard-marker . 1     | Cigar-makers, 8       | Last-maker, 1          | Pipe-makers, 2         | Travellers . . 6         |
| Brewer . . . 1          | Charwomen, 4          | Labourers . 37         | Publican . . 1         | Trunk-maker, 1           |
| Bakers . . . 2          | Collar-cutters, 3     | Lamp-trimmer . . . 1   | Portmanteau-makers . 2 | Teachers . . . 2         |
| Butlers . . . 3         | Drysalter . . 1       | Lighterman. 1          | Paper-folders, 2       | Turners . . . 2          |
| Brush-makers, 7         | Doll-dresser, 1       | Licensed Victualler, 1 | Printers . . 11        | Tin-workers . 5          |
| Boot-makers, 2          | Draymen . . 7         | Laundresses, 6         | Poulterers . 2         | Tailors . . . 69         |
| Brass-easter, 1         | Distiller . . 1       | Messengers, 4          | Riveter . . . 1        | Upholsterers, 3          |
| Bonnet-blocker . 1      | Dyer . . . . 1        | Machinist . . 1        | Railway-guards . . 3   | Umbrella-makers . . 2    |
| Cabinet-makers . 5      | Dress-makers, 2       | Mattress-makers . 2    | School-mistresses . 2  | Wheelwrights, 2          |
| Captain . . . 1         | Engine-driver, 1      | Moulders . . 2         | Spring-maker, 1        | Watchmaker, 1            |
| Compositors, 11         | Engravers . 3         | Meter-maker, 1         | Shoemakers, 9          | Whitesmith, 1            |
| Clerks . . . 27         | Frame-maker, 1        | Mangle-women . 3       | Saw-setter . 1         | Wood-carver, 1           |
| Cutlers . . . 6         | Farriers . . . 3      | Missionaries, 5        | Shoe-binder, 1         | Whip-makers, 2           |
| Check-takers, 3         | Footman . . 1         | Nurses . . . 3         | Smiths . . . 4         | Wine-porter, 1           |
| Cab-drivers . 4         | Furrier . . . 1       | No occupation . 25     | Shopmen . . 7          | Waiters . . . 3          |
| Coachman . . 1          | French-polishers . 2  | Organ-builders . 4     | Slater . . . . 1       | Warehousemen . . 17      |
| Carpenters . 25         | Fishmongers, 4        |                        | Sawyers . . . 2        | Watchmen . . 2           |
| Copperplate printer . 1 | Fireman . . . 1       |                        | Sempstresses, 2        | Wool-sorter, 1           |
| Carvers . . . 5         | Glass-cutters, 2      |                        | Sungar-refiners . . 2  | Wine-cooper, 1           |
| Collectors . . 5        | Gun-makers, 4         |                        |                        | Total . . . 697          |



**SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES,**  
**OFFICE: 21, EXETER HALL, STRAND.**

The first range of Model Dwellings was commenced by this Society at Bagnigge Wells in 1844. They accommodate 23 Families and 20 Single Women, see plan, p. 89. They were disposed of in 1856, to the Right Hon. W. F. Cowper, M.P., who has since sold them to the Loudon Labourers' Dwelling Society.

**TABULAR STATEMENT,**

*Showing the Rates, Taxes, Repairs, and other Expenses of each Establishment, for the year ending December 31, 1865.*

| PAYMENTS.                               | OPENED                                   |                                  |  |                              |  |   |  |  |   |            | TOTAL. |
|---|--|----------------------------------|--|------------------------------|--|---|--|--|---|------------|--------|
|   | George St. Lodging House, 104 Men, 1847. | Streatham St. 54 Families, 1850. | Portpool Lane, 20 Families, 128 Women, 1851. | Portpool Lane Laundry, 1851. | Charles St. Lodging House, 84 Men, 1847. | Hutton Garden, Lodging House, 54 Men, 1849. | Wild Court, Renovated Tenements, 1855. | Clark's Buildings, 80 Renovated Tenements, 1856. | Tyndall's Buildings, Renovated Tenements, 1857. |            |        |
| Rent                                    | 18 15 0                                  | 56 5 0                           | 25 13 4                                      | 3 10 0                       | 41 1 3                                   | 54 16 8                                     | 203 6 10                               | 269 16 11  | 226 5 10  | 798 7 6    |        |
| Poor and Police Rate                    | 7 10 0                                   | 22 10 0                          | 10 1 8                                       | 1 7 6                        | 7 10 0                                   | 8 0 0                                       | 26 5 0                                 | 27 10 0  | 28 9 4  | 201 17 8   |        |
| General Rate                            | 3 15 0                                   | 11 5 0                           | 1 7 6  | 0 3 9                        | 3 0 0                                    | 4 0 0                                       | 10 10 0                                | 11 0 0   | 11 3 8  | 81 2 10    |        |
| Sewers Rate                             | 2 10 0                                   | 7 10 0                           | 5 19 2                                       | 0 16 3                       | 1 10 0                                   | 0 13 4                                      | 5 5 0                                  | 5 10 0   | 1 10 6  | 31 0 1     |        |
| Metropolitan Rate                       | 6 15 0                                   | —                                | 7 10 0                                       | 28 2 6                       | 2 12 6                                   | 1 0 0                                       | 3 10 0                                 | 3 13 4   | 6 12 2  | 32 10 11   |        |
| House Duty                              | 9 1 2                                    | 22 7 11                          | 17 1 3                                       | 44 12 3                      | 3 19 4½                                  | 3 15 0                                      | 11 14 5                                | 10 10 8  | 1 16 0  | 74 14 9½   |        |
| Land Tax                                | 6 5 0                                    | 10 8 4                           | 9 2 6  | 7 10 0                       | 1 9 2                                    | 3 6 8                                       | 5 5 0                                  | 8 4 7  | 6 11 8  | 50 12 11   |        |
| Property and Income Tax                 | —  | 43 19 2                          | —  | —                            | —  | —   | —                                      | —  | —   | 48 19 2    |        |
| Ground Rent.                            | —  | —                                | —  | —                            | —  | —   | —                                      | —  | —   | 1 18 0     |        |
| Title                                   | 13 0 0                                   | 20 0 0                           | 0 8 0  | —                            | 2 16 0                                   | 6 1 6                                       | 15 2 0                                 | 21 0 0   | 0 13 0  | 134 5 0    |        |
| Water                                   | 42 9 3                                   | 11 7 6                           | 18 15 0                                      | —                            | 19 1 6                                   | 15 10 7                                     | 16 5 3                                 | 1 5 9  | 6 15 0  | 178 2 1    |        |
| Gas                                     | 5 19 0                                   | 3 9 0                            | 0 8 0  | —                            | 1 16 1                                   | 0 8 0                                       | 5 15 6                                 | 12 7 6   | 2 2 0   | 39 15 1    |        |
| Insurance                               | 3 14 0                                   | —                                | —  | —                            | 3 12 0                                   | 0 18 0                                      | —                                      | —  | 1 7 6   | 9 11 6     |        |
| Soap and Cleaning Materials             | 40 4 0                                   | —                                | —  | 137 10 0                     | 25 17 6                                  | 24 12 0                                     | —                                      | —  | 14 18 0   | 243 1 6    |        |
| Coal, Coke, and Wood                    | 127 8 0                                  | 52 16 0                          | 37 11 3                                      | 177 12 6                     | 68 12 0                                  | 78 15 3                                     | 65 9 10                                | 53 18 3  | 85 16 0   | 747 19 1   |        |
| Superintendants' and Servants' Salaries | 39 11 3                                  | —                                | —  | —                            | 23 10 3                                  | 14 5 6                                      | 0 2 0                                  | —  | 8 18 7  | 86 7 7     |        |
| Washing House Linen                     | 6 6 8                                    | 1 17 6                           | —  | 13 8 11                      | 2 15 7                                   | 3 3 0                                       | 0 4 0                                  | 1 4 8  | 2 8 11  | 31 9 3     |        |
| Sundries                                | 32 19 4                                  | 1 4 6                            | —  | 7 5 0½                       | 7 4 6                                    | 7 1 6                                       | 0 9 6                                  | 1 3 0  | 21 6 9  | 78 14 1½   |        |
| Furniture, Fixtures, Linen, &c.         | 62 6 6                                   | 57 16 0                          | 50 6 10                                      | 62 9 6½                      | 33 9 5                                   | 14 4 6                                      | 59 6 6                                 | 63 16 5  | 54 2 9  | 457 18 5½  |        |
| Repairs                                 | 428 9 2                                  | 327 15 11                        | 198 15 6                                     | 484 8 3                      | 253 17 1½                                | 241 11 6                                    | 433 17 4                               | 500 4 10   | 496 6 8   | 3365 6 3½  |        |
| Total charges                           | 290 18 4                                 | 411 7 4                          | 287 10 6                                     | 94 16 0                      | 153 2 4½                                 | 83 2 0                                      | 198 5 5                                | 81 10 5  | 185 5 6   | 1696 1 10½ |        |
| Net Rents, Balance of                   | 719 7 6                                  | 739 3 3                          | 486 6 0                                      | 389 12 3                     | 411 19 6                                 | 324 13 6                                    | 632 2 9                                | 581 15 3   | 631 12 2  | 4966 12 2  |        |
| Gross Rents                             | 6126 14 2                                | 8916 15 11                       | 9533 15 7                                    | 3140 12 3                    | 1163 14 2                                | 1077 14 7                                   | 3364 19 11                             | 1161 10 5  | 2699 11 0                                       | 37485 8 0  |        |
| Cost                                    | —  | —                                | —  | —                            | —  | —   | —                                      | —  | —   | —          |        |
| Yielding on Outlay                      | ¼ per cent.                              | 4 per cent.                      | 3 per cent.                                  | —                            | 13½ per cent.                            | 7½ per cent.                                | 5½ per cent.                           | 7 per cent.                                      | 6½ per cent.                                    | —          |        |

The Rentals of the Family Tenements in the Streatham-street and the Thanksgiving, or Porpool-lane Buildings, are from 4s. to 6s. per week, with a very few superior in the former at 6s. 6d. and 7s. per week. The nightly charge in the Men's Lodging House is 4d., or 2s. per week, in Charles-street and Tyndall's-buildings. In the Hutton Garden House it is 2s. 6d. to 3s. 6d. weekly. The Single Women's rooms at Porpool-lane are 1s. 6d. to 2s. weekly.

METROPOLITAN ASSOCIATION FOR IMPROVING THE DWELLINGS OF THE INDUSTRIOUS CLASSES.

OFFICE: 19, COLEMAN STREET, CITY OF LONDON.

TABULAR STATEMENT,

Showing the Rates, Taxes, Repairs and other Expenses of each Establishment, for the Year ending March, 1866.

|   | Albert Street,<br>60 Families. |       | Albert Cottages,<br>33 Families. |       | Albion Buildings,<br>20 Families,<br>4 Workshops. |       | Ingestre Buildings,<br>60 Families. |       | Nelson Square,<br>108 Families. |       | Paneras Square,<br>110 Families. |       | Queen's Place,<br>10 Families. |       | Victoria Cottages,<br>30 Families. |       | Albert Chambers,<br>234 Single Men. |       | Soho Chambers,<br>128 Single Men. |       | TOTAL. |       |
|---|--------------------------------|-------|----------------------------------|-------|---|-------|-------------------------------------|-------|---------------------------------|-------|----------------------------------|-------|--------------------------------|-------|------------------------------------|-------|-------------------------------------|-------|-----------------------------------|-------|--------|-------|
|   | £                              | s. d. | £                                | s. d. | £   | s. d. | £                                   | s. d. | £                               | s. d. | £                                | s. d. | £                              | s. d. | £                                  | s. d. | £                                   | s. d. | £                                 | s. d. | £      | s. d. |
| Rent . . . . .                                    | 83                             | 4 6   | 47                               | 8 0   | 16  | 1 8   | 294                                 | 7 6   | 80                              | 19 7  | 88                               | 2 6   | 49                             | 1 3   | 20                                 | 0 6   | 84                                  | 2 0   | 294                               | 7 6   | 725    | 18 9  |
| Poor and Police Rate . . . . .                    |                                |       |                                  |       |   |       | 59                                  | 2 6   | 9                               | 19 4  | 93                               | 15 0  | 7                              | 1 11  |                                    |       |                                     |       | 37                                | 10 0  | 529    | 5 8   |
| Lighting Rate . . . . .                           |                                |       |                                  |       |   |       |                                     |       |                                 |       | 13                               | 2 6   | 1                              | 4 1   |                                    |       |                                     |       |                                   |       | 24     | 5 11  |
| House Duty . . . . .                              |                                |       |                                  |       |   |       | 26                                  | 15 6  |                                 |       | 14                               | 12 6  |                                |       |                                    |       |                                     |       |                                   |       | 83     | 15 0  |
| Land Tax . . . . .                                |                                |       |                                  |       |   |       | 20                                  | 19 5  |                                 |       |                                  |       | 2                              | 6 0   |                                    |       |                                     |       |                                   |       | 14     | 1 3   |
| Property Tax . . . . .                            |                                |       |                                  |       |   |       | 4                                   | 9 3   | 24                              | 0 0   | 26                               | 5 0   | 1                              | 16 6  |                                    |       |                                     |       |                                   |       | 14     | 1 3   |
| Sewers and Main Drainage . . . . .                |                                |       |                                  |       |   |       | 30                                  | 18 2  | 18                              | 13 9  | 24                               | 7 6   | 1                              | 14 4  |                                    |       |                                     |       |                                   |       | 7      | 10 0  |
| General Rate . . . . .                            |                                |       |                                  |       |   |       | 14                                  | 15 8  | 23                              | 0 11  | 56                               | 5 0   | 1                              | 14 5  |                                    |       |                                     |       |                                   |       | 6      | 11 3  |
| Church Rate . . . . .                             |                                |       |                                  |       |   |       |                                     |       | 2                               | 9 10  |                                  |       | 0                              | 3 9   |                                    |       |                                     |       |                                   |       | 4      | 13 7  |
| Consolidated Rate . . . . .                       |                                |       |                                  |       |   |       |                                     |       | 7                               | 1 8   |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 7      | 1 8   |
| Ward Rate . . . . .                               |                                |       |                                  |       |   |       | 0                                   | 4 2   |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 0      | 4 2   |
| Repairs of Building . . . . .                     |                                |       |                                  |       |   |       | 95                                  | 11 7  | 110                             | 7 10  | 150                              | 6 8   | 0                              | 7 6   |                                    |       |                                     |       |                                   |       | 58     | 4 9   |
| Repairs of House Linen, Utensils, &c. . . . .     |                                |       |                                  |       |   |       |                                     |       |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 22     | 2 8   |
| Sinking Fund to redeem Leaseholds . . . . .       |                                |       |                                  |       |   |       | 17                                  | 0 0   |                                 |       | 35                               | 0 0   | 2                              | 0 0   |                                    |       |                                     |       |                                   |       | 100    | 0 0   |
| Water . . . . .                                   |                                |       |                                  |       |   |       | 5                                   | 4 0   | 50                              | 0 0   | 45                               | 0 0   | 5                              | 0 0   |                                    |       |                                     |       |                                   |       | 16     | 16 0  |
| Gas . . . . .                                     |                                |       |                                  |       |   |       | 4                                   | 17 7  | 16                              | 19 1  | 13                               | 1 0   |                                |       |                                    |       |                                     |       |                                   |       | 87     | 10 2  |
| Superintendents' and Servants' Wages, &c. . . . . |                                |       |                                  |       |   |       | 12                                  | 2 1   | 84                              | 13 9  | 86                               | 19 9  | 5                              | 17 11 |                                    |       |                                     |       |                                   |       | 374    | 0 6   |
| Cleaning Materials, Soap, &c. . . . .             |                                |       |                                  |       |   |       | 4                                   | 17 0  | 5                               | 5 8   | 14                               | 16 0  | 0                              | 4 6   |                                    |       |                                     |       |                                   |       | 47     | 17 0  |
| Washing House Linen . . . . .                     |                                |       |                                  |       |   |       |                                     |       |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 46     | 10 10 |
| Coals and Wood . . . . .                          |                                |       |                                  |       |   |       |                                     |       |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 109    | 6 10  |
| Insurance . . . . .                               |                                |       |                                  |       |   |       | 1                                   | 6 3   | 7                               | 16 0  | 7                                | 18 0  | 1                              | 10 0  |                                    |       |                                     |       |                                   |       | 5      | 5 0   |
| Newspapers, &c. . . . .                           |                                |       |                                  |       |   |       | 0                                   | 13 4  |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 11     | 9 2   |
| Militia Tax . . . . .                             |                                |       |                                  |       |   |       |                                     |       |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 15     | 19 7  |
| Total Charges . . . . .                           | 364                            | 1 9   | 175                              | 8 3   | 91  | 19 7  | 734                                 | 8 6   | 453                             | 2 2   | 674                              | 11 5  | 80                             | 2 2   | 76                                 | 11 4  | 919                                 | 1 2   | 1011                              | 13 1  | 4580   | 19 5  |
| Net Rent, balance of (Profit . . . . .)           | 505                            | 3 3   | 317                              | 19 11 | 147   | 9 3   | 520                                 | 0 3   | 1219                            | 13 4  | 1163                             | 3 0   | 39                             | 4 10  | 207                                | 7 8   | 256                                 | 5 10  | 4456                              | 7 4   | 272    | 18 6  |
| Net Rent, balance of (Loss . . . . .)             |                                |       |                                  |       |   |       |                                     |       |                                 |       |                                  |       |                                |       |                                    |       |                                     |       |                                   |       | 272    | 18 6  |
| Gross Rents . . . . .                             | 369                            | 5 0   | 493                              | 8 2   | 239   | 8 10  | 1254                                | 8 9   | 1673                            | 15 6  | 1837                             | 14 5  | 119                            | 7 0   | *363                               | 19 0  | 1175                                | 7 0   | 738                               | 14 7  | 8764   | 8 3   |
| Cost . . . . .                                    | 11365                          | 11 8  | 6371                             | 4 1   | 2381  | 1 1   | 9852                                | 6 3   | 23051                           | 18 2  | 18306                            | 1 3   | 111                            | 8 2   | 7469                               | 9 7   | 13772                               | 7 3   | 1422                              | 7 7   | 94103  | 15 1  |

\* This Amount was received on only Eight Months' Occupancy.

THE importance of *hollow bricks* in the construction of dwellings for the labouring classes warrants some further remarks on this subject. No one conversant with houses of slight construction can be unaware of the evil to which they are so liable from damp external walls and floors; any remedy which contributes to its removal, without adding to the cost of the building, must therefore prove a great benefit to the occupants of such dwellings; and where a mode of construction effects this object at a diminished cost, it is a boon to the landlord as well as to the tenant.

The use, in architectural construction, of hollow-shaped clay, in a variety of forms, was known to the ancients, and amongst other purposes was adopted by them in lightening the weight of the spandrels to vaulting of considerable span. For the lining of rubble-stone walls tile was commonly used in Roman buildings. The Colosseum may be instanced as an example, where much of the inner wall is constructed of rubble and faced with tile, which has been covered with slabs of different coloured marble. At Pompeii, a hollow tile was in some instances used for securing a dry surface to receive the fresco paintings. In the *Illustrated London News* of October 5, 1850, drawings are given of Roman flue-tiles, found at Lynne, in Kent, where they have been used for distributing warm air from an hypocaustum under the floor of the building.

Hollow bricks are peculiarly adapted for agricultural buildings, and for enclosure, park, or fence walls, as well as for the ordinary dwellings of the labouring classes, for schools, and for houses generally of moderate height, and with the usual weight of roofs and floors. For conservatories they may be used with singular advantage. Heat may be passed through every portion of both floors and walls. When used for partitions, or for roof and floor arches, they are fire-proof, deaden sound more effectually, and are considerably lighter than solid brickwork. As a lining to stone or flint walls, they supersede the necessity for battening, and the consequent risk of fire and dry rot is avoided. For cottage floors they are also well adapted.

The strength of hollow bricks may be adapted to circumstances, and where required, be rendered fully equal to that of solid bricks. The diminution in the weight of hollow, as compared with solid, bricks, is an important consideration in reference to carriage.

Hollow bricks may be made with any good tile machine, in the same manner as ordinary draining pipes, and at about the same cost in proportion to the quantity of clay contained in them. The material is finer; they are more compressed, require less drying, and with much less fuel, are better burned than ordinary bricks, even when waste heat, or that in the upper part of the kiln, only is used, a fire skin being formed both within and without. The process of drying is more rapid than in common brickwork, and frost has less effect on the joints.

By the form adopted in the longitudinal hollow brickwork, the patent for which has expired, a perfect bond, running longitudinally through the centre of the wall, is secured, all headers and vertical joints passing through it are avoided; internal as well as external strength is obtained; and every facility given for the fixing of floor-plates, and other timbers; whilst great facility is afforded for ventilation, as well as for the conveyance of artificial heat, and for the transmission of bell-wires, pipes, &c.

These bricks may be either wedge-shaped or rebated, as shown by the wood-cut sections. If the former, their most suitable thickness is  $2\frac{3}{4}$  inches or  $3\frac{3}{4}$  inches, so as to rise either 3 or 4 courses to the foot, and they should be cut in lengths of  $11\frac{3}{4}$  inches. If rebated, they should be  $5\frac{3}{4}$  inches thick, so as to rise 2 courses to the foot. By the increase, beyond that of ordinary bricks, greater boldness and resemblance to stone is given; the quantity of mortar and of labour is lessened when the work is done by accustomed hands.

When passing through the machine, or in the process of drying, any number may be splayed at the ends to the rake of gables, be mitred, or be marked for closures, and broken off as required in use; or they may be perforated for the purpose of ventilation. If nicked with a sharp-pointed hammer, they will break off at any desired line; and the angles may be taken off with a trowel as readily as those of a common brick. A sufficient portion of good facing bricks may be selected from an ordinary burning, and in laying them, a better bond will be obtained than is usually given in common brickwork.

The splayed bricks may be used for the weathering of plinths, for eaves moulding under gutters, and for gable moulding under projecting tiles or slates, in lieu of barge boards. Labels for doors and windows may be made hollow in lengths.

The bricks for the quoins and jambs may be made either solid or perforated; and with perpendicular holes, either circular or square, those in the quoins may be arranged to serve for ventilating shafts. Stone is equally applicable for the quoins and jambs, and the appearance of the work may be thereby improved.

The smoothness of the internal surface of walls built with the longitudinal bonded bricks renders plastering, in many instances, quite unnecessary, whereby a saving is effected, not only in the first cost, but also in the subsequent maintenance. If glazed on the outer face, as may be done with many clays, a superior finished surface is obtainable without plaster.

SECTION OF A  
9in DWARF WALL.



LONGITUDINAL BONDED BRICKS.  
No. 1. No. No. 2.



QUOIN BRICK.  
No. 3.



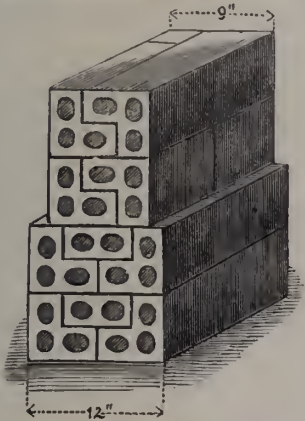
JAMB BRICK.  
No. 4.



ARCH AND PARTITION BRICKS.  
No. 5 & 6. No. 7.



The bricks represented above are all  $3\frac{3}{4}$  in. thick ; but, if preferred, in order to work with common bricks, they may be made  $2\frac{3}{4}$  in. thick. The dies will admit of more substance of clay been given where it is required to increase the strength of the bricks. The quoins and jamb bricks may be made solid where it is more convenient.



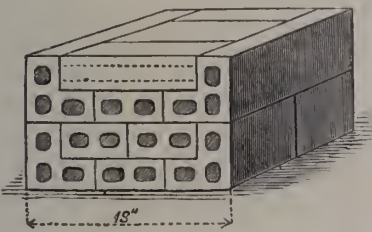
*Form and arrangement of Hollow Bricks adapted for walls where extra strength is required, or where the appearance of Stone is a recommendation.*

Sections of walls built with Longitudinal Bonded Hollow Bricks, having square rebated joints, and rising in 6 inch courses externally.

The form and dimensions of the bricks here shown will apply to walls 6, 9, 12, 18, 24, 30, and 36 inches thick. Above 12 inches thick the alternate inner courses may be laid either as headers or as stretchers, in the manner shown by the lower section, and where desired an internal course may be omitted for ventilation.

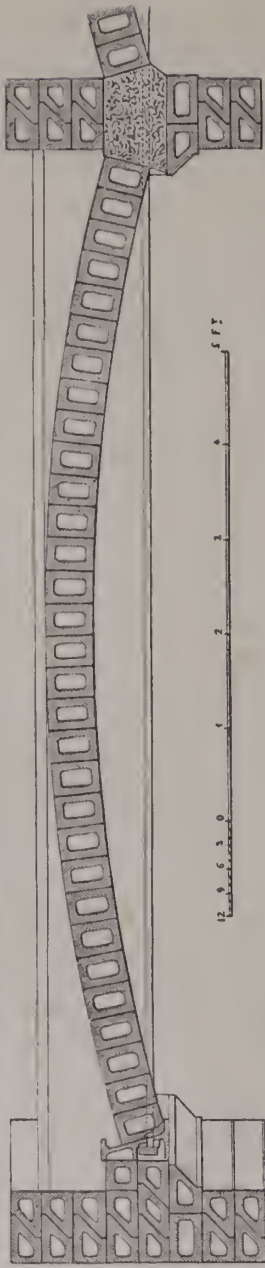
A filling-in of concrete may be substituted for the internal bricks. The external bricks will bond in with, and form a good lining to flint or stone walls, they may be also used with common bricks.

The internal bricks are suitable for partitions. The Quoin and Jamb bricks may be similar in form to those used with the Splayed bricks, as shown above.



Experimental floor-arches, of 10ft. 3in. span, turned with hollow bricks 6 inches deep, between two cast-iron springers, similar in form to those shown in the drawing on the following page, and connected by  $\frac{3}{4}$ in. wrought-iron tie rods, 7ft. 6in. apart, were loaded with bricks equally distributed over the arch to the extent of 8 tons 13 cwt. 3qrs., when they broke down through the crushing of the bricks ; the deflection of the springer being  $\frac{1}{2}$ in. In another arch of the same span, with the tie rods 9ft. 6in. apart, and loaded with 8 tons 10 cwt. 3qrs., one of the springers broke ; and, on examination a flaw was found in the casting.

SECTION, SHOWING THE FLOOR AND ROOF ARCHES TO H.R.H. PRINCE ALBERT'S EXHIBITION MODEL HOUSES, ON THE SAME PRINCIPLES AS THOSE TO THE MODEL HOUSES IN SREATHAM STREET AND PORTPOOL LANE.

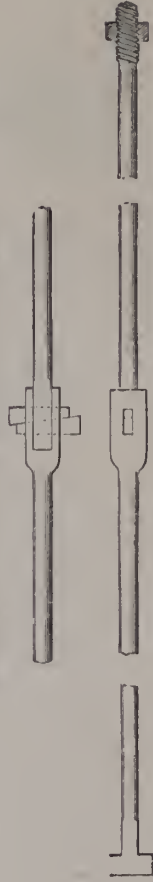


Section (1/4 full size) of a Hollow Brick adapted for Floor Arches, &c.



The central dotted lines show how increased strength may be given.

Wrought Iron Tie Rods to Arches, 1/2-inch in Diameter.

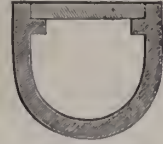


Elevation of end of Cast Iron Springers.



ARTICLES OF IMPORTANCE IN THE CONSTRUCTION AND FITTING UP  
OF DWELLINGS FOR THE LABOURING CLASSES, WITH ADDRESSES.

THE best form of SOIL DRAIN is probably that shown in the margin, it may be cleansed without any other removal than that of the upper tile, to which additional strength would be given by making it convex.



The best form of WATER CLOSET PAN and most economical arrangement of Water Supply brought under the notice of the Author is that by W. Patten, of Old Fish-street, Doctors' Commons. Those by Mr. Beggs, of Southampton-street, Strand, are also well worthy the notice of parties intending to build, as are some of his other Sanitary appliances. The Pans and other Sanitary Vessels manufactured by Ridgway and Co., of Caudon-place, Staffordshire Potteries, are of superior material.

IRON PUMPS, arranged for supplying the reservoir of the water-closet described at page 28, as well as for common house use, may be obtained, at 35s. each, of B. Fowler, Whitefriars-street, Fleet-street, who also supplies iron pipes and sinks. The same description of pump, with 6 feet of iron pipe, may be obtained, at 35s. each, of W. Williams, brick machine and agricultural implement maker, Bedford.

Ventilators, Dust Valves, Cottage Furnishing Ironmongery, including Galvanized Iron Window Casements and Bars with suitable fastenings, &c., are supplied by Hart and Son, 53, Wych-street, Strand, at schedule prices.

The best English COTTAGE RANGE brought under the notice of the Author is that manufactured by W. N. Nicholson, of Newark, to whom a prize was awarded by the Royal Agricultural Society of England, at the York meeting in 1848, for "the best and cheapest grate or stove for cottages, combining safety and economy of fuel, with effectual warmth and facility for cooking." The range, with oven and boiler, for a 3-foot 2-inch opening, is charged at 35s. without, and 41s. with a brass tap; other sizes in proportion. Bed-room stoves, with fire-brick backs, cast iron chimney-piece and shelf, are supplied by the same manufacturer, at 8*d.* to 9*d.* per inch in width. One, 24 inches wide, a good bed-room size, costs 16s. Neat bed-room stoves, with metal bottom grates and hobs, have been supplied to the Windsor Royal Society at the following prices—viz., for 14-inch openings, 3s. 6*d.* each, 20-inch, 5s., and 27-inch, 7s. 6*d.*

For Lodging-houses, IRON BEDSTEADS are recommended in preference to wood; those with patent joints, sold at the Bordsley Iron Works, Birmingham, and at No. 12, Panton-square, Piccadilly, also Mr. Burton, No. 39, Oxford-street, London, are well made, and have the advantage of being easily taken to pieces; their price varies according to the value of iron; if on castors, and japanned dark green, 6 feet 4 inches long, and 2 feet 6 inches wide (the dimensions recommended), they have been sold at 15s. 6*d.* each, in quantities of not less than twelve; 4 feet 6 inches wide for the Superintendents, cost 23s. 6*d.* Between the mattress and iron laths, a strong canvass bag, filled with cut straw, which may be easily changed, has been found to answer well.

The Traps recommended for sinks are those of Lowe and Co., Salford, which can be obtained through any Ironmonger.

Metallic Lava is supplied by Orsi and Armani, Guildhall Chambers, Basinghall-street.

Seyssel Asphalte is supplied by the Asphalte Company, 15, Stangate, Lambeth.

Fire Clay Ovens, as manufactured at the Bovey Tracey Pottery, Devon, are found to be cheap and useful articles, and are strongly recommended for general adoption. One charged 10s. at the Works, is sufficiently large to bake with once heating five quarters of bread. The cost of heating is not more than three pence each time. In the country, where firewood is cheap, it does not exceed one penny per time. The cost of setting varies, but may be stated at from 15s. to 25s. or 30s.

THE ECONOMICAL MUSEUM, formed by Thomas Twining, Esq., in the grounds of Perryn House, near the Railway Station, Twickenham, affords many facilities for the comparing of various articles necessary in the construction and fitting up of Labourers' Dwellings, amongst which may be mentioned cooking and other stoves of foreign manufacture, particularly those made by M. Godin Lemaire at Guise.

DUTIES OF THE SUPERINTENDENT  
OF  
THE LODGING-HOUSE  
FOR  
UNMARRIED WORKMEN AND LABOURERS,  
AT

---

THE Superintendent, together with his Wife, are expected to set an example of sobriety, decorum, and exemplary conduct, abstaining from whatever might in any degree countenance in the Lodgers an infringement of the Rules for the general regulation of the House.

He must faithfully account for all monies received by him or his wife from the Lodgers, at such time, and in such manner, as is required by the owner of the House.

He is to keep a book, in which, besides a regular entry of the names, period of occupancy, and payments made by each Lodger, a Record shall be kept of any particular circumstance which may occur, either of the nature of complaint or otherwise.

The Superintendent is to occupy, free of rent, the apartments appropriated to him, and he will be allowed Fuel, Candles, Salt, Soap, and such other necessary articles as may be required for keeping the house in proper order.

He is to be responsible for all the Beds, Bedding, Furniture, and other effects in the House, and, as far as is in his power, to preserve them, as well as the building and fixtures, from injury.

He is, together with his wife, to keep the House, the Bedding, Furniture, &c., scrupulously clean, and, to the best of his ability, conduct the establishment according to the Rules laid down for its government; in addition to which, the following instructions are to be carefully observed:—

1. No Lodgers to be admitted who are filthy in their persons, or of known bad character.

2. Although it is a Rule of the House that each Lodger shall pay his rent in advance, yet, as from time to time it may occur that Lodgers of whom the Superintendent has reason to form a good opinion may, from want of employment or other causes, be unable to pay, he may give credit to such for two weeks, but no longer, and this indulgence is not to be extended to more than three at any one time; in every such case the arrear may be paid gradually, but with as little delay as possible.

3. As it respects the notice required from a Lodger before he leaves the House, although the Lodgers are weekly tenants, if, under peculiar and unforeseen circumstances, a tenant is obliged to leave the House suddenly, or if he has been a tenant for three months, any money paid by him in advance may be returned to him.

4. The due observance of the Rules to which every Lodger subjects himself on his admission is to be enforced by the Superintendent; and in the discharge of this somewhat difficult part of his duty, he is expected to combine firmness with kindness, and to abstain from all needless and vexatious interference with the Lodgers.

5. In the management of the establishment, strict regard to economy must be observed, so as to prevent all waste of the articles to be provided for the Lodgers, which will comprise Fuel, Candles, Salt, and Soap.

6. In reference to the Books placed under the care of the Superintendent, he is to keep a list of them, and to enter regularly the name of every Lodger to whom they are lent, and to see that they are returned in good order.

RULES  
 OF  
 THE LODGING-HOUSE  
 FOR  
 UNMARRIED WORKMEN AND LABOURERS,  
 AT

---

THE LODGERS are to be admitted by the Week, on payment of  
 per week, in advance, and to be subject to the  
 following Rules, which are intended for the general comfort of the Inmates,  
 and the good order of the Establishment:—

1. The House to be open from Five in the morning till Ten o'clock at night, subject to alteration according to the season of the year and to the occupations of the lodgers.

2. The Lamp in the Bed-room to be lighted from Nine o'clock in the evening to Half-past Ten o'clock, when it is to be extinguished.

3. As the occupancy is by the week, each Lodger must give the Superintendent at least two days' notice, before the end of the week, if it be his intention not to remain, otherwise it will be considered that his occupancy is continued.

4. Each Lodger will be provided with a box and locker, for the security of his property, the keys of which will be delivered to him on depositing the sum of One Shilling, to be returned on the re-delivery of the keys. All property belonging to the Lodgers must be considered as under their own care, and at their own risk.

5. Each Lodger will be provided with a tray, two plates, a basin, a jug, a cup and saucer, or a metal cup, a knife, fork, and two spoons, which are to be under his own care, and on leaving the House they are to be returned to the Superintendent in a sound state.

6. The property of the Establishment is to be treated with due care, and, in particular, no cutting or writing on the Tables, Forms, Chairs, or other articles, and no defacing of the Walls, will be permitted. Any damage done by a Tenant is to be made good at his expense, or any article entrusted to him for his use, which may be lost or broken, is to be reinstated at his expense.

7. No spirituous liquors to be brought into the House, or drunk there. No person to be admitted or allowed to remain in a state of intoxication. No one, excepting the Lodgers, to be admitted to the House, excepting with the permission of the Superintendent.

8. No card-playing, gambling, quarrelling, fighting, profane or abusive language, to be permitted; and it is expected that the Superintendent and his Wife be treated with respect: their duty in promoting the comfort of the Inmates will be to see that these Rules are strictly observed.

9. Habits of cleanliness are expected in the Lodgers, and any person guilty of filthy or dirty practices, or rendering himself offensive to the other inmates, will not be permitted to remain in the House. Smoking cannot be allowed in the Living-Room or Bed-Room, but in the Kitchen only.

10. A wilful breach of any of the above Rules will subject the party to immediate exclusion from the House; but any money paid by him in advance will be returned after deducting the rent then due, and the amount of any damage which he may have done to the property.

11. It is expected that every Lodger will so conduct himself on the Sabbath, as not to desecrate the day.

12. For the benefit of those who may wish to avail themselves of the opportunity, the *Holy Scriptures*, and other books of an interesting and instructive character, will be lent by the Superintendent, in the hope that the Lodgers in this House will be thereby induced to spend their leisure hours in a profitable manner, as intelligent and accountable beings.



TERMS AND AGREEMENTS FOR LETTING COTTAGES.

---

Terms and Conditions of Letting the Cottages belonging to  
situate in the Parish of \_\_\_\_\_ and County of \_\_\_\_\_

1. The Rent to be paid punctually, as per Agreement.
2. All Rates and Taxes in respect of the House to be paid by the Landlord.
3. Either party may terminate the Tenancy at any time, by giving a week's notice for that purpose.
4. Only one Family will be permitted to reside in a Cottage, and the Tenant is not to underlet or take in a Lodger, or carry on any trade or business therein, or keep poultry or a pig, without leave first obtained in writing from the Landlord or his Agent.
5. The Windows are to be kept clean, and the Ground-Floor Chimneys are to be swept once in Six Months. No alteration—by fixing or removing shelves or other fixtures—is to be made, without permission of the Landlord or his Agent.
6. General outside repairs are to be done at the expense of the Landlord.
7. The Windows, Ovens, and Coppers, are to be kept in repair by the Landlord, and the cost of such repairs to be re-paid by the Tenant; as well as the cost of white-washing once a year, with the making good of any damaged plastering.
8. The Fences to be kept in repair by the Landlord, and the cost of the repair to be re-paid, in equal proportions, by the Tenants of the Cottages enclosed within such Fence.
9. The re-payment agreed to in the Clauses numbered 7 and 8, as above, to be made by the several tenants, within one week after payment thereof shall have been demanded by the Landlord's Agent.
10. The Tenant to clear away the ashes, and to remove all manure, &c., which may have been laid near the Cottage, every week.
11. The Gardens in front of the Cottages to be kept in good order, and the Cottages themselves in a neat and tidy state, to the satisfaction of the Landlord or his Agent.
12. Free access to be given, at all times, to the Landlord, his Agent, Servants, or Workmen.

---

**FORM OF AGREEMENT.**

\_\_\_\_\_ does hereby agree with \_\_\_\_\_  
\_\_\_\_\_ to take of him the Cottage \_\_\_\_\_  
\_\_\_\_\_ from week to week, at the weekly rent of \_\_\_\_\_  
\_\_\_\_\_ to be paid by the said \_\_\_\_\_ to the said  
\_\_\_\_\_ at the end of each week, subject to the terms and conditions  
above specified.

As witness their hands, this \_\_\_\_\_ day of \_\_\_\_\_ 18 \_\_\_\_\_

Witness \_\_\_\_\_

---

## VIEW OF MODEL BUILDINGS NEAR BAGNIGGE WELLS.

*Between the Lower Road, Pentonville, and Gray's-Inn Road.*

Commenced in 1844.



## EXPLANATION OF THE ANNEXED PLAN.

THE six houses, Nos. 1, 2, 4, 5, 10, and 11,\* are the residences of twelve families, each occupying a floor with two rooms; the larger 13ft. by 10ft., the smaller 10ft. 6in. by 7ft. 6in. All requisite conveniences are provided separately for each family, with distinct access to the upper floor.

The eight houses, Nos. 6, 7, 8, 9, 12, 13, 14, and 15, are the residences of eight families, each having on the ground floor a living-room, 13ft. 6in. by 12ft. 6in., with a lobby, enclosed recess for beds, closets, and a scullery under the stairs, with a small court-yard: the upper floor, as shown by Nos. 12, 13, 14, and 15, is divided into two bed-rooms; the larger 12ft. 6in., by 10ft. 6in. the smaller 13ft. by 7ft. 6in.

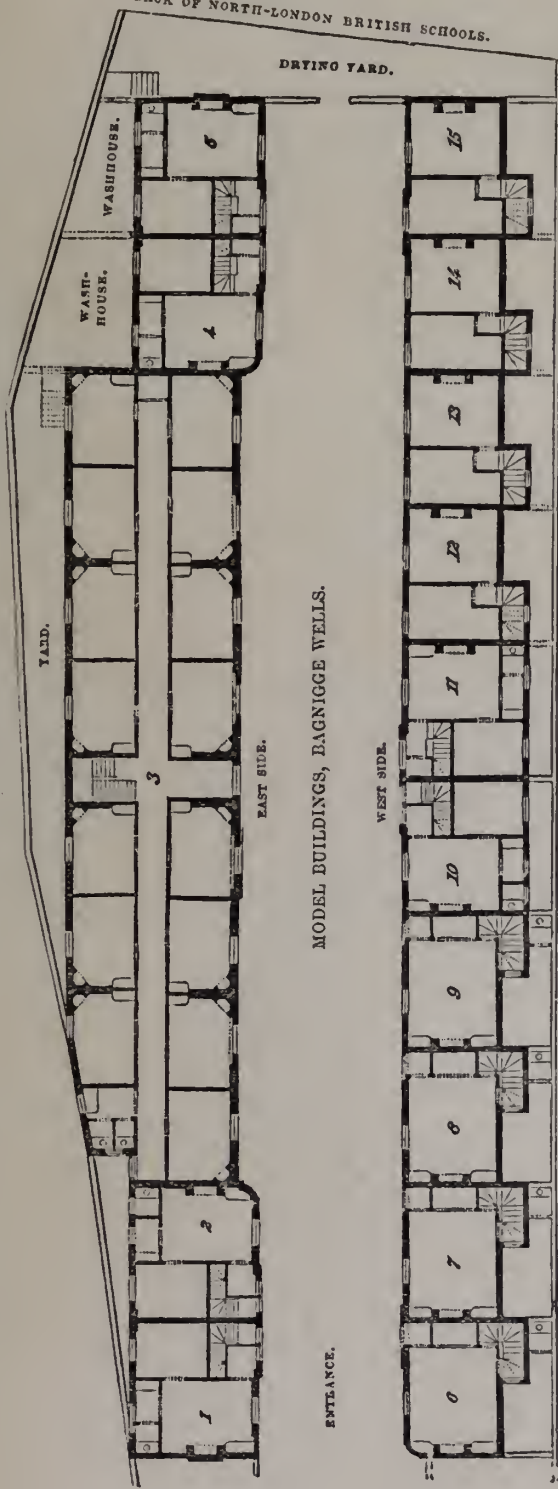
The house, No. 3, is intended for the residence of thirty widows or aged females, each having a room 12ft. 6in. by 8ft. 6in., approached by a corridor, lighted and ventilated in the centre and at both ends. A sunk wash-house for the use of the inmates of this house, is provided at the back of No 4, and one adjoining it, for the occasional use of the other tenants.

Additional houses, to accommodate three families, have been built on the east side of the ground, towards the entrance; these are not shown on the Plan.

\* The Albert cottages, recently built by the Metropolitan Association in Albert-street, Spitalfields, resemble these houses in their general arrangement, but with the addition of a kitchen at the back. A plan of them is given at page 137.

BACK OF HOUSES TOWARDS THE LOWER ROAD, PENTONVILLE.

BACK OF NORTH-LONDON BRITISH SCHOOLS.



MODEL BUILDINGS, BARNIGGE WELLS.

PLAN OF UPPER FLOOR.

PLAN OF GROUND FLOOR.

H. ROBERTS, Hon. Archt.

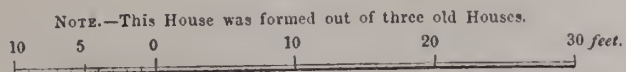




THE RENOVATED LODGING-HOUSE, CHARLES-STREET, DRURY-LANE.



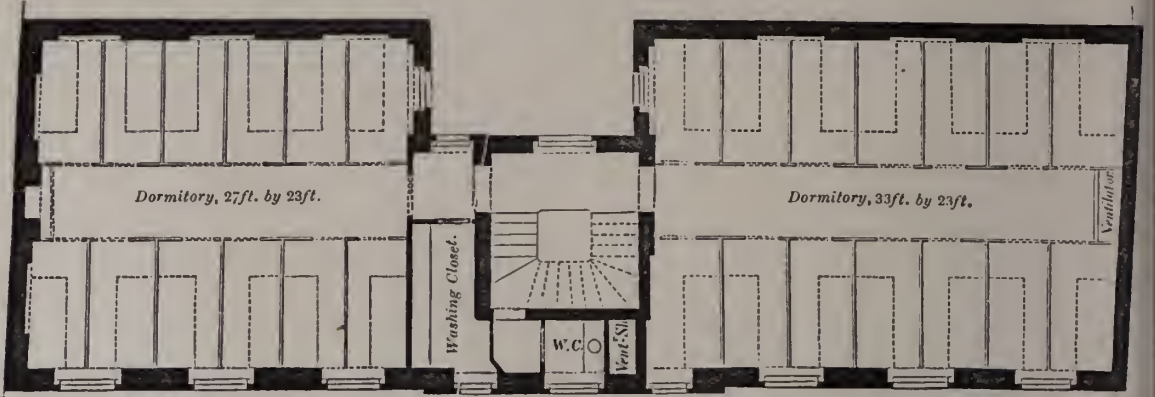
Ground-Floor Plan of the Renovated Lodging-House, Charles-street, Drury-lane, to accommodate 82 Single Men.



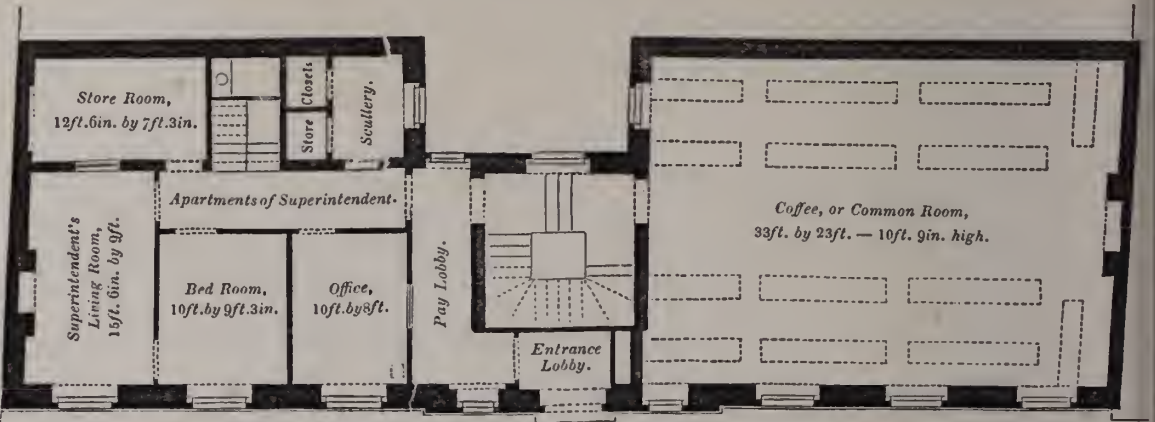
THE MODEL LODGING-HOUSE IN GEORGE-STREET, BLOOMSBURY.

TO ACCOMMODATE 104 WORKING-MEN.

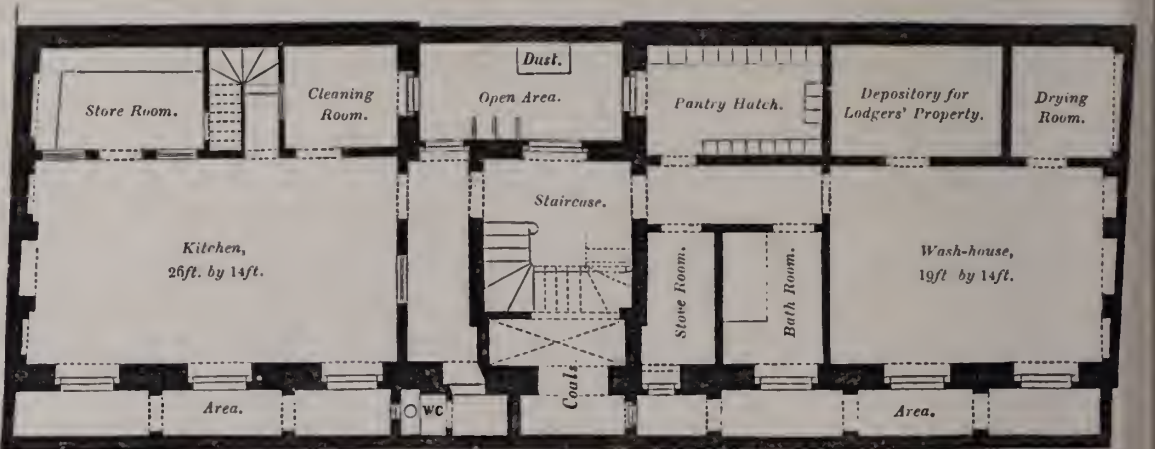
Commenced in 1846.



PLAN OF FOUR FLOORS OF DORMITORIES.



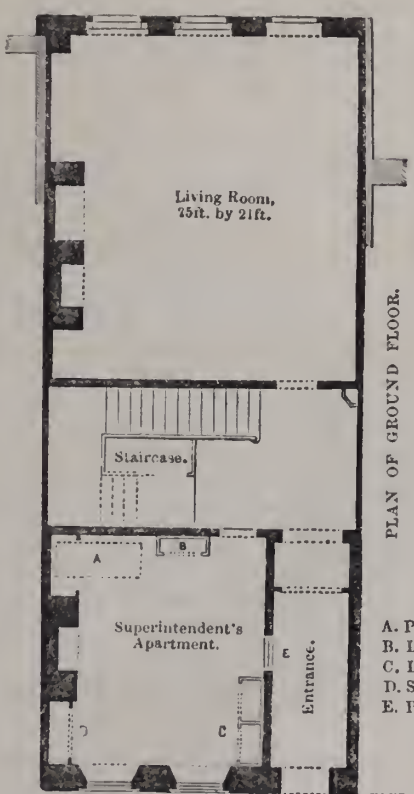
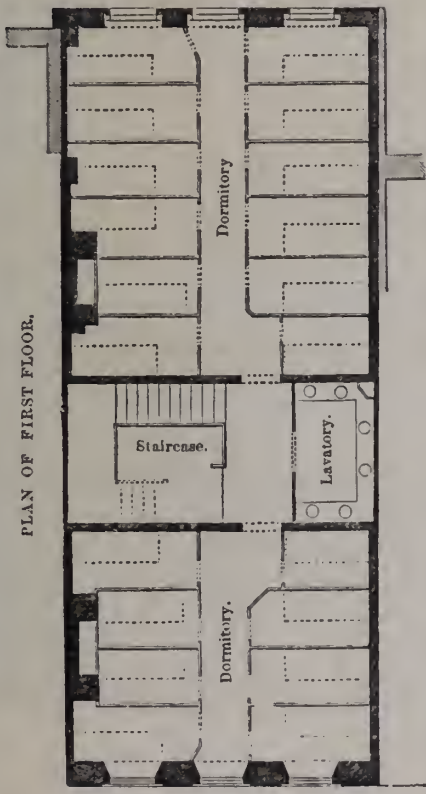
PLAN OF GROUND FLOOR.



PLAN OF BASEMENT FLOOR.

Scale of 10 0 10 20 30 40 50 ft.

THE MODEL LODGING-HOUSE FOR 104 WORKING MEN, IN GEORGE-STREET.



- A. Press Bed.
- B. Linen Press
- C. Library.
- D. Stores.
- E. Pay Window

PLANS OF THE MODEL LODGING-HOUSE, No. 76, HATTON GARDEN.  
TO ACCOMMODATE 54 SINGLE MEN.





SOUTH AND WEST SIDE OF INTERNAL QUADRANGLE TO MODEL HOUSES, STREATHAM-STREET,  
THE ENCLOSURE WALL ON THE EAST SIDE BEING REMOVED.



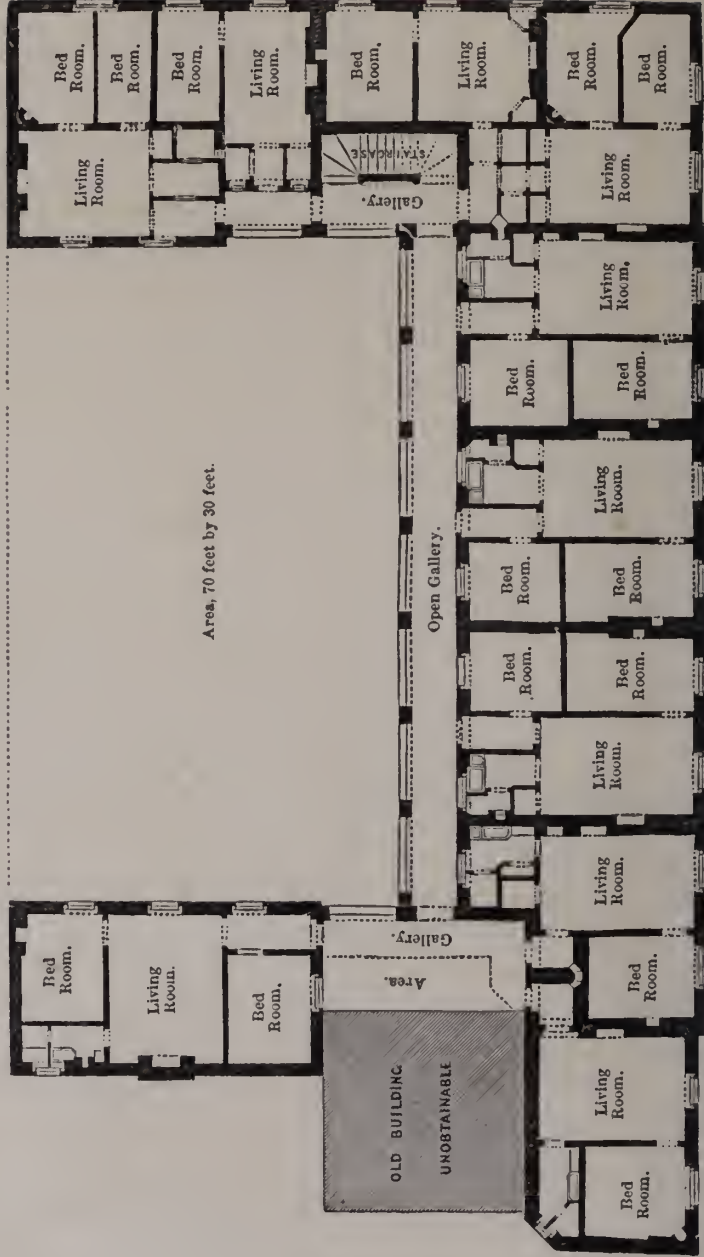
THE MODEL HOUSES FOR FAMILIES, IN STREATHAM-STREET, BLOOMSBURY.

*(For plans of this building, see succeeding pages.)*

THE MODEL HOUSES FOR FAMILIES IN STREATHAM-STREET, BLOOMSBURY.

TO ACCOMMODATE 48 FAMILIES, EXCLUSIVE OF THE SUNK BASEMENT-FLOOR,  
IN WHICH THERE ARE SIX TENEMENTS.

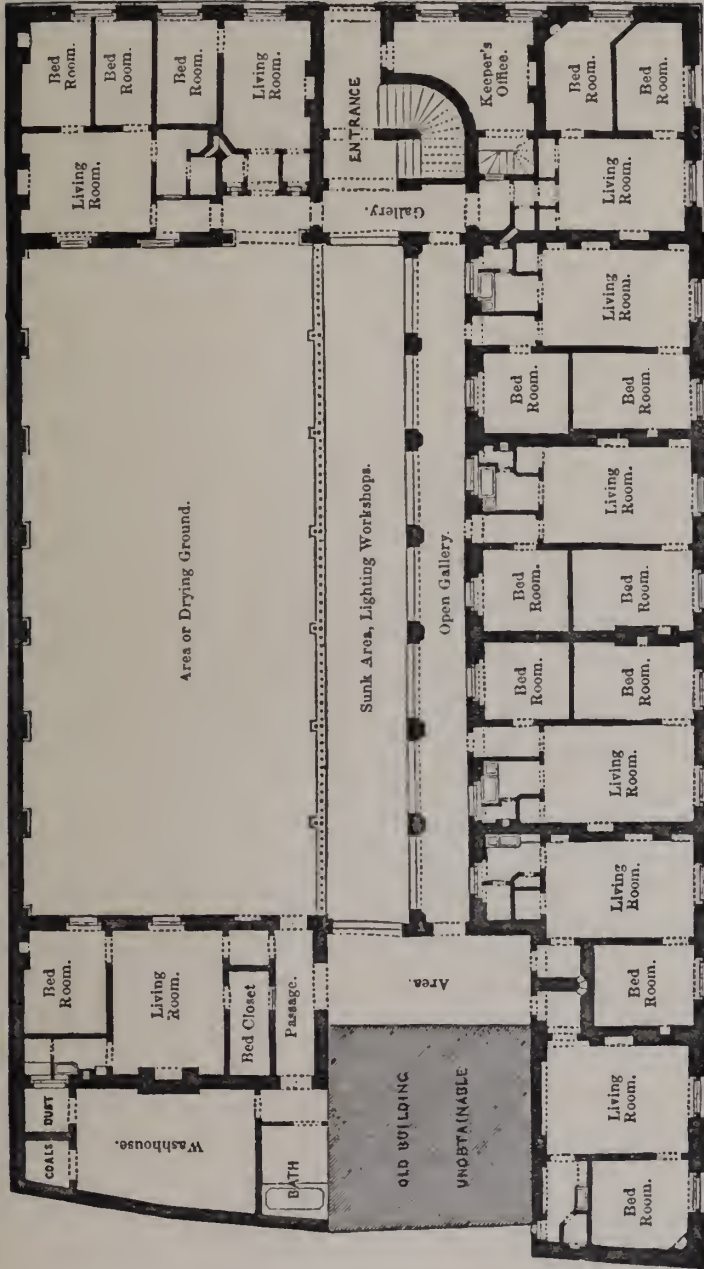
PLAN OF UPPER FLOORS.





STREATHAM STREET.

PLAN OF GROUND FLOOR.



Mr. ROBERTS, F.S.A., Hon. Archt.

GEORGE STREET.

100 feet.

90

80

70

60

50

40

30

20

10

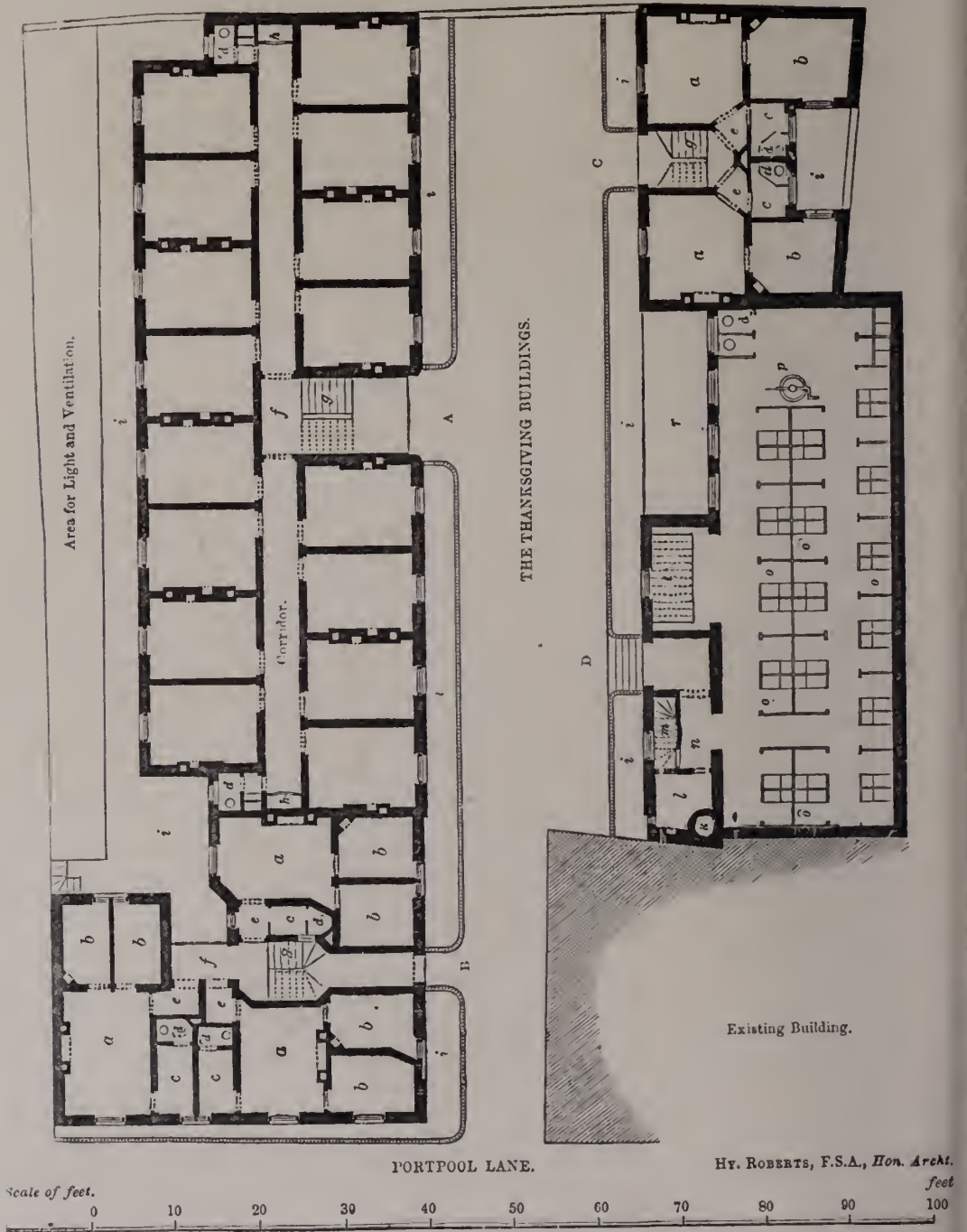
0

Scale of 10

THE THANKSGIVING MODEL BUILDINGS IN PORTPOOL-LANE,  
GRAYS'S-INN-LANE.

*Accommodating 20 Families and 128 Single Women.*

INCLUDING A PUBLIC WASHHOUSE AND BATHS.





VIEW OF THE EAST SIDE OF THE THANK-GIVING MODEL BUILDINGS, PORTPOOL-LANE, GRAY'S-INN LANE.

For these Buildings, as stated in p. 12, a spacious freehold site, eligibly situated in Portpool-lane, Gray's-Inn-lane, was purchased, and Model Dwellings raised for twenty families, and for one hundred and twenty-eight single women; whilst an existing building has been converted into a Washhouse for the use of the neighbourhood, and the tenants of the Model Dwellings, for whose use two Baths are also provided.

The twenty families occupy two distinct buildings, of four stories in height—one building having three tenements, with three rooms each on a floor; the other having two tenements, with two rooms each on a floor—a scullery and other requisite conveniences have been provided separately for each family, whilst to both houses there is an open staircase, and to the larger one a gallery of communication, by which means complete ventilation is secured. In their arrangement it has been the aim of the Honorary Architect to show how the disadvantages of an enclosed common staircase may, in a great measure, be obviated; and to offer two models of houses, one adapted to the accommodation of two, and the other of three families on a floor.

The one hundred and twenty-eight single young women, of whom the majority are supposed to be poor needlewomen, occupy sixty-four rooms, in a building of four stories, divided by a central staircase; a corridor on either side forms a lobby to eight rooms, each 12ft. 6in. long, by 9ft. 6in. wide, sufficiently large for two persons. They are fitted up with two bedsteads, a table, chairs, and a washing-stand. The charge is one shilling per week for each person, or two shillings per room. This building is intended to meet the peculiar and difficult circumstances of a class of persons on whose behalf much public sympathy has been justly excited, and for whom no suitable provision had hitherto been made by the Society.

The Washhouse, 60ft. long by 20ft. broad, (formerly a brewhouse), has washing-troughs for thirty-four persons, and in a gallery ironing-tables for twelve persons; a wringing apparatus and twelve drying-horses, heated with hot water. The arrangements for this establishment are made with a view to avoid confusion, by keeping the various processes as distinct as possible.

With the exception of the Washhouse roof, the buildings are of *fire-proof* construction, on a plan similar to that adopted in the Society's Model Houses for Families in Streatham-street.

#### DESCRIPTION OF THE PLAN.

A Entrance to Model Building for 128 Single Women. | C Entrance to Model Building for Eight Families.  
B Entrance to Model Building for Twelve Families. | D Entrance to Public Washhouse.

a Living-rooms. b Bed-rooms. c Sculleries. d Water-closets. e Entrance-lobbies. f Galleries and landings from staircase. g Staircases. h Enclosure for light and ventilation. i Sunk areas. k Chimney-shaft from boiler of washhouse. l Pay-office for the Superintendent of the Washing Establishment, &c. m Staircase to the Gallery, with Ironing Tables, to the Baths, and to the dwelling apartments of the Superintendent. n Pay-lobby to Washhouse. o Washing troughs, with slate enclosures. p Wringing machine. q Sliding horses for drying linen. r Covered way leading down to the Basement.

NOTE.—The Washhouse is lighted and ventilated from the roof, and has a Gallery on one side, with a range of Ironing Tables.

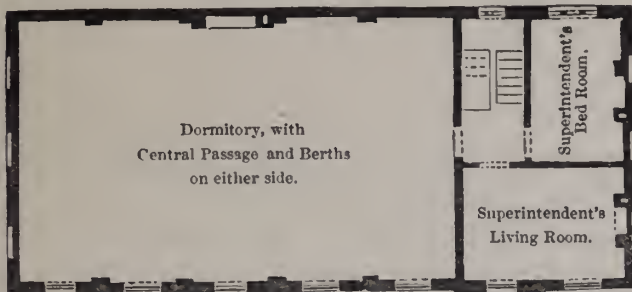
THE ASYLUM FOR DESTITUTE SAILORS,

DOCK-STREET, LONDON DOCK.



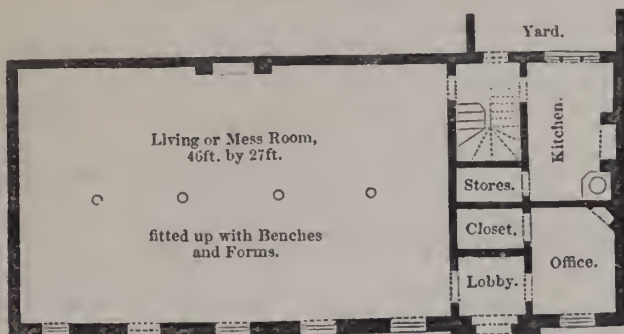
ELEVATION.

PLAN OF DORMITORY FLOOR.

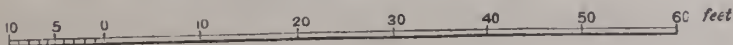


The open Roof extends over the Superintendent's Apartments, and is ventilated at each end. With an additional Story this building would accommodate with berths 150 persons. It is adapted for the Model of a Caravansary Lodging-house. (See note, p. 15).

PLAN OF GROUND FLOOR.



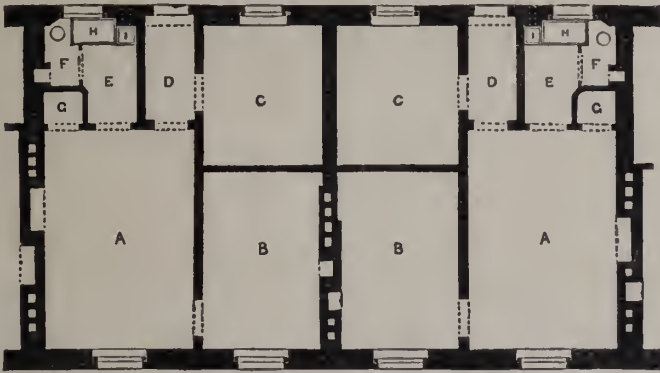
The Yard contains arrangements for Washing, with a Stove for Drying and Purifying Clothes, a Bath and other requisite conveniences.



PLAN OF TWO OF THE TENEMENTS IN THE STREATHAM-STREET  
MODEL HOUSES FOR FAMILIES.

BUILT BY THE SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES.

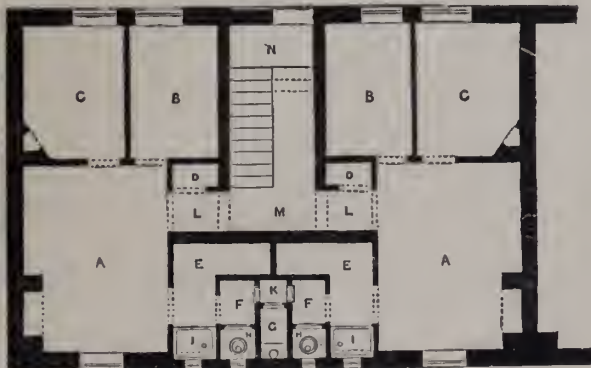
Open Gallery, 5 feet wide.



- |                |                   |               |
|----------------|-------------------|---------------|
| A Living Room. | D Lobby.          | G Bed Closet. |
| B Bed Room.    | E Scullery.       | H Sink.       |
| C Bed Room.    | F W. C. and Dust. | I Meat Safe.  |

PLAN OF TWO OF THE TENEMENTS IN THE DWELLINGS FOR  
LABOURERS AT BIRKENHEAD.

BUILT BY THE BIRKENHEAD DOCK COMPANY.

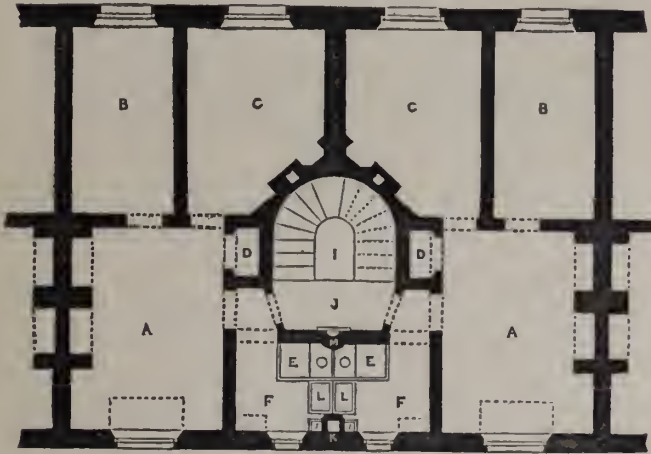


- |                |              |             |
|----------------|--------------|-------------|
| A Living Room. | E Scullery.  | L Lobby.    |
| B Bed Room.    | F W. Closet. | M Staircase |
| C Bed Room.    | G Pipes.     | Landing.    |
| D Cupboard     | I Sink.      | N Entrance. |



PLAN OF TWO OF THE TENEMENTS IN THE FAMILY HOUSES FOR WORKMEN, ST. PANCRAS.

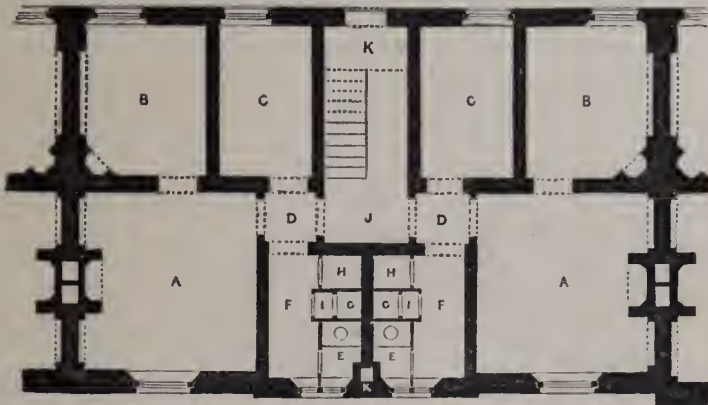
BUILT BY THE METROPOLITAN ASSOCIATION.



- |                |              |               |
|----------------|--------------|---------------|
| A Living Room. | D Cupboard.  | I Staircase.  |
| B Bed Room.    | E W. Closet. | K Dust Shaft. |
| C Bed Room.    | F Scullery.  | L Sink.       |

PLAN OF TWO OF THE TENEMENTS IN THE FAMILY HOUSES FOR WORKMEN, SPICER-STREET, SPITALFIELDS.

BUILT BY THE METROPOLITAN ASSOCIATION.



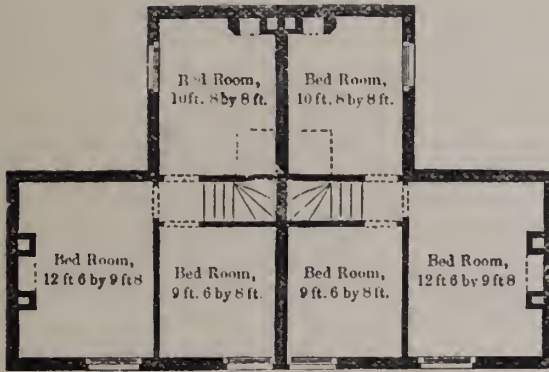
- |                |                   |                         |
|----------------|-------------------|-------------------------|
| A Living Room. | E W. C. and Dust. | I Sink.                 |
| B Bed Room.    | F Scullery.       | J Landing of Staircase. |
| C Bed Room.    | G Pantry.         | K Entrance.             |
| D Lobby.       | H Cupboard.       |                         |

10                      0                      10                      20                      30 feet.

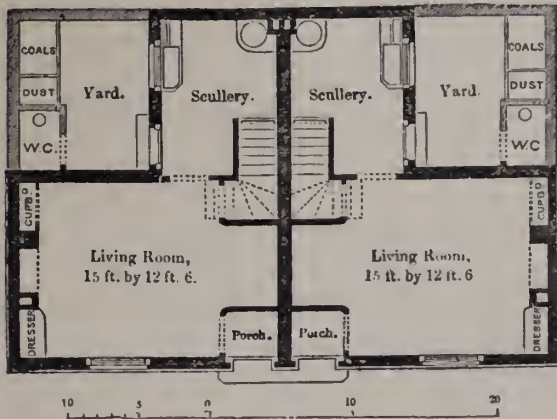
DOUBLE HOUSES FOR FAMILIES, ADAPTED TO TOWNS, WITH THREE  
BED ROOMS EACH.



ELEVATION.



PLAN OF UPPER FLOOR.



PLAN OF GROUND FLOOR.

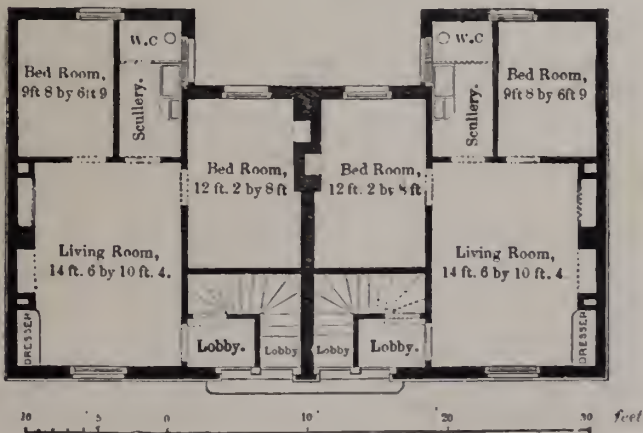
DOUBLE HOUSES ADAPTED TO TOWNS, WITH FOUR DISTINCT TENEMENTS  
ON TWO FLOORS, EACH HAVING TWO BED ROOMS.



ELEVATION.



PLAN OF UPPER FLOOR.



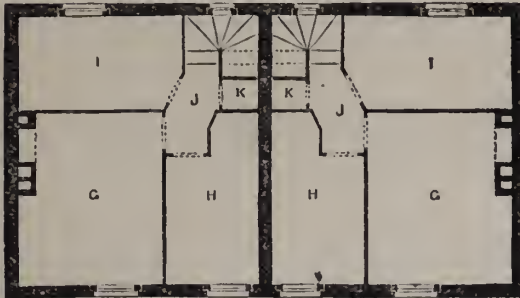
PLAN OF GROUND FLOOR.



FOR WORKMEN'S DWELLINGS IN TOWNS,  
TO BE BUILT IN PAIRS, OR IN A ROW.

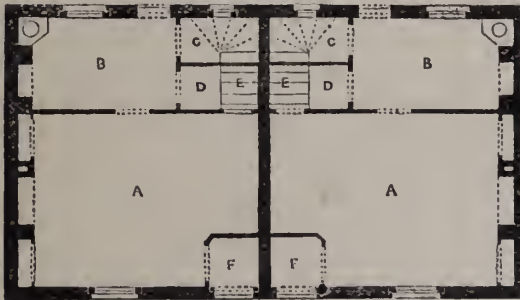
PLANS OF A DOUBLE HOUSE FOR ONE FAMILY IN EACH.

FIRST-FLOOR PLAN.



- |                      |                      |
|----------------------|----------------------|
| G Parents' Bed Room. | I Boys' Bed Room.    |
| H Girls' Bed Room.   | J Passago. K Closet. |

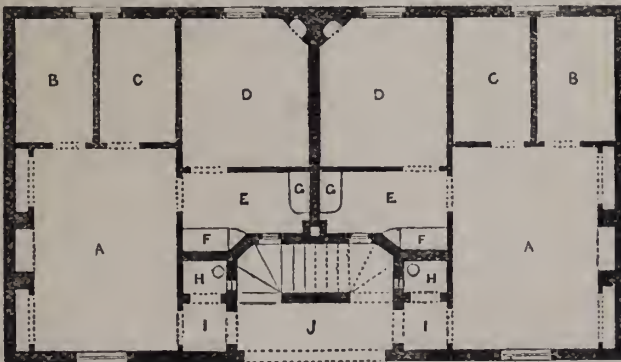
GROUND-FLOOR PLAN.



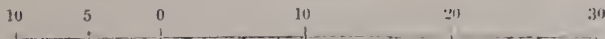
- |                |               |
|----------------|---------------|
| A Living Room. | D Fuel Store. |
| B Scullery.    | E Staircase.  |
| C Pantry.      | F Porch.      |

PLANS OF A HOUSE, WITH FOUR DISTINCT TENEMENTS ON TWO FLOORS.  
BEING THAT ADOPTED FOR THE EXHIBITION MODEL HOUSES, 1851, p. 121.

THE UPPER FLOOR IS APPROACHED BY AN OPEN STAIRCASE.



- |                      |             |              |
|----------------------|-------------|--------------|
| A Living Room.       | E Scullery. | H W. Closet. |
| B Boys'.             | F Safe.     | I Lobby.     |
| C Girls'.            | G Sink.     | J Gallery.   |
| D Parents' Bed Room. |             |              |



## H. R. H. PRINCE ALBERT'S MODEL HOUSES FOR FOUR FAMILIES.

AMONGST the vast collection of objects presented in the Great Exhibition of 1851, the visitor who estimated their real value and importance, not by the cost or labour of production, not by the artistic merit or gorgeous effect, but by their adaptation to advance the physical, the social, and the moral condition of the great masses of the people—of those who form the basis of the social edifice, would justly and gratefully appreciate the unpretending contribution made by His Royal Highness the PRINCE ALBERT, of *Model Houses for Families*, of the class of manufacturing and mechanical operatives.

HIS ROYAL HIGHNESS had this building raised on his own account, with a desire of conveying practical information calculated to promote the much needed improvement of the dwellings of the Working Classes, and also of stimulating Visitors to the Exhibition, whose position and circumstances enable them to carry out similar undertakings, and thus, without pecuniary sacrifice, permanently to benefit those who are greatly dependent on others for their home and family comforts.

In its *general arrangement*, the building is adapted for the occupation of four families of the class of manufacturing and mechanical operatives, who usually reside in towns, or in their immediate vicinity; and as the value of land, which leads to the economizing of space, by the placing of more than one family under the same roof, in some cases, renders the addition of a third story desirable, the plan has been suited to such an arrangement, without any other alteration than the requisite increase in the strength of the walls.

The most prominent peculiarity of the design is that of the receding and protected central open staircase, with the connecting gallery on the first floor, formed of slate, and sheltered from the weather by the continuation of the main roof, which also screens the entrances to the dwellings.

The four tenements are arranged on precisely the same plan, two on each floor.

The entrance is through a small *lobby*, lighted from the upper part of the door.

The *living-room* has a superficial area of about 150 feet, with a closet on one side of the fire-place, to which warm air may be introduced from the back of the range; over the fire-place is an iron rod for hanging pictures; and on the opposite side of the room a shelf is carried above the doors, with a rail fixed between them.

The scullery is fitted up with a sink, beneath which is a coal-bin of slate; a plate-rack at one end, drained by a slate slab into the sink, covers the entrance to the dust-shaft, which is enclosed by a balanced self-acting iron door. The dust-shaft leads into a closed depository under the stairs, and has a ventilating flue, carried up above the roof. The meat-safe is ventilated through the hollow brickwork, and shelves are fixed over the doors. A dresser-flap may be fixed against the partition.

The *sleeping apartments*, being three in number, provide for that separation which, with a family, is so essential to morality and decency. Each has its distinct access, and a window into the open air; two have fire-places.

The children's bed-rooms contain 50 feet superficial each, and, opening out of the living-room, an opportunity is afforded for the exercise of parental watchfulness, without the unwholesome crowding of the living-room, by its use as a sleeping apartment.

The parents' bed-room, with a superficial area of about 100 feet, is entered through the scullery—an arrangement in many respects preferable to a direct approach from the living-room, particularly in case of sickness. The recess in this room provides a closet for linen. In each of the bed-rooms a shelf is carried over the door, with a rail fixed beneath it.

The water-closet is fitted up with a Staffordshire glazed basin, which is complete without any wood fittings, and supplied with water from a slate cistern in common of 160 gallons, placed on the roof over the party and staircase walls. The same pipes which carry away the rain water from the roof serve for the use of the closets.

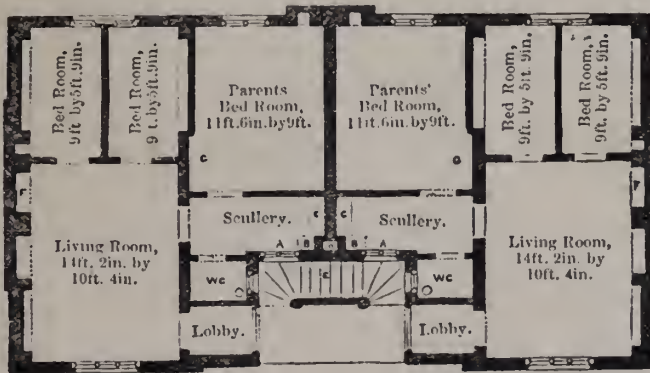
*Constructive Arrangement.*—The peculiarities of the building in this respect are, the exclusive use of hollow bricks for the walls and partitions (excepting the foundations, which are of ordinary brickwork), and the entire absence of timber in the floors and roof, which are formed with flat arches of hollow brickwork, rising from 8 to 9 inches, set in cement, and tied in by wrought-iron rods connected with cast-iron springers, which rest on the external walls, and bind the whole structure together; the building is thus rendered fire-proof, and much less liable to decay than those of ordinary construction. The roof arching, which is levelled with concrete, and covered with patent metallic lava, secures the upper rooms from the liability to changes of temperature to which apartments next the roof are generally subject, and the transmission of sound, as well as the percolation of moisture, so common through ordinary floors, is effectually impeded by the hollow-brick arched floors. The external and main internal walls are of longitudinal bonded brickwork.

The advantages afforded by the use of hollow bricks, in securing an effective system of insensible *ventilation*, deserves particular notice. Fresh air is admitted from a suitable point of the exterior of the building to a chamber at the back of the living-room fire-place, where, being warmed, it may be conducted to any convenient place of exit above the level at which the fresh air is admitted. Vitiated air may be conveyed either into the chimney flue or to any other suitable place of exit through the upper wall courses.

The glazed surface of the bricks used in the two upper-floor living-rooms, and at the foot of the staircase, shows a very superior mode of superseding all plastering and colouring.

The fire-proof construction, and the general arrangement of the fittings, are such as have been used in the Model Houses built by the Society for Improving the Condition of the Labouring Classes, under the direction of the Author, who designed and acted for His Royal Highness as honorary architect to this building.

MODEL HOUSES FOR FOUR FAMILIES,  
 ERECTED BY COMMAND OF  
 HIS ROYAL HIGHNESS PRINCE ALBERT, K.G.,  
 AT THE EXPOSITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851,  
 And subsequently rebuilt in Kennington New Park, Surrey.



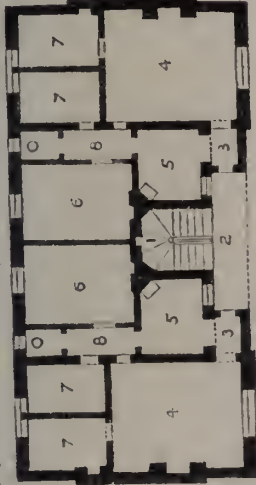
- A Sink, with Coal Box under.
- B Plate Rack over entrance to Dust Shaft, D.
- C Meat Safe, ventilated through hollow bricks.

- E Staircase of Slate, with Dust Place under.
- F Cupboard warmed from back of Fireplace.
- G Linen Closet in this recess if required.



PLANS FOR WORKMEN'S DWELLINGS IN TOWNS.

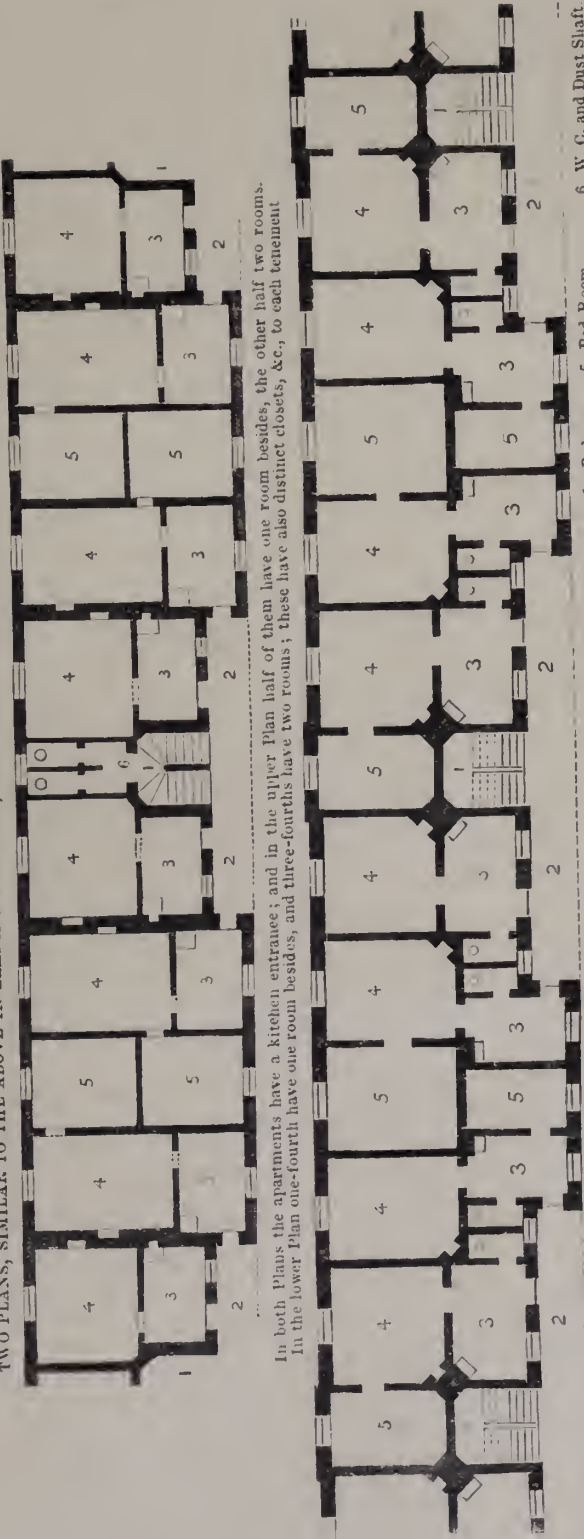
A MODIFICATION OF THE MODEL HOUSES DESIGNED BY THE AUTHOR, AND EXHIBITED BY H. R. H. THE PRINCE CONSORT IN HYDE PARK, 1851.



- 1. Open Staircase, with Dust Shaft.
- 2. Open Gallery.
- 3. Entrance Lobby.
- 4. Living Room.

- 5. Kitchen with Stove.
- 6 Parents' Bed Room.
- 7. Children's Bed Room.
- 8. Passage leading to Closet

TWO PLANS, SIMILAR TO THE ABOVE IN LEADING FEATURES, BUT ADAPTED TO THE LOWER PAID CLASS OF WORKING PEOPLE.



In both Plans the apartments have a kitchen entrance; and in the upper Plan half of them have one room besides, the other half two rooms. In the lower Plan one-fourth have one room besides, and three-fourths have two rooms; these have also distinct closets, &c., to each tenement.

- 1. Open Staircase.
- 2. Open Gallery.
- 3. Kitchen Entrance, fitted with Stove, &c.
- 4. Living Room, with space for Bed.
- 5. Bed-Room.
- 6. W. C. and Dust Shaft.

9 EVOLVA FEE  
30  
EPRVCH METRES

In such dwellings on the Continent, instead of brickwork under the Windows, the space has been filled in with ventilated Provision Safes. The Cooking Stoves are compact and economical.

## THE WINDSOR ROYAL SOCIETY.

UNDER THE PATRONAGE OF HER MAJESTY THE QUEEN AND OF H.R.H. THE PRINCE CONSORT.

THIS SOCIETY, formed in 1852 to promote and carry out the improvement of the dwellings of the working classes in Windsor, is constituted on the principle of a joint-stock company, with a capital of 6000*l.*, to be raised in 10*l.* shares, and is empowered to increase the same, which has been subsequently done to 10,000*l.* The amount of dividend payable to the shareholders is limited to 5 per cent., leaving any surplus return available for the extension of the Society's operations. Donations are also received from those who prefer thus aiding the objects of the Society, but they are to be strictly applied to office expenses, or to such other outlay as may fairly be considered to be peculiar to the working of a company in distinction from the operations of a private builder.

Freehold ground, between the Long Walk and the Cavalry Barracks, containing nearly 1½ acre, has been purchased for 288*l.*, and laid out for the erection of two rows of houses, opposite one another, together accommodating about forty families, each having a small garden.

The contract for building one half of these houses amounts to 2240*l.* They are arranged in five blocks, the centre block, and the two corner blocks, each combining two plans, and the remaining blocks being alike in plan. There are four tenements on each of these five plans—twelve of them have three, and eight have two bed-rooms.

The centre building, 90 feet in length, contains eight tenements—four on the ground-floor, and four on the upper-floor. The middle compartment, which is on the plan of H.R.H. Prince Albert's Exhibition Model Houses, somewhat increased in scale, consists of four tenements, each having three bed-rooms. On either side is a house arranged for two families, one above the other, with distinct entrance access—these tenements have two bed-rooms. The floor between the two stories is of hollow brick, fire-proof.

The next building, on either side, 36 feet in length, is a pair of double cottages, with living-room, scullery, pantry, and three bed-rooms above.

Each of the two extreme buildings, 70 feet in length, comprises four cottages, with living-room, scullery, and pantry; the centre cottages have two bed-rooms above, the two outer cottages have three bed-rooms above.

The centre building on the opposite side, which cost about 320*l.*, combines a superintendent's residence, a bake-house, wash-house, bath, fuel store, and a 3000 gal. slate cistern, for the general supply of the houses.

The arrangement of the several buildings is shown on the annexed plans. They are constructed in hollow bricks, similar to those used in the Exhibition Model Houses.

With a view to facilitate the adoption, in other places, of the plans of these buildings, designed by the Author, who has acted as honorary architect to the Windsor Royal Society, working drawings have been lithographed, and are published by the Society for Improving the Condition of the Working Classes, 21, Exeter Hall.

A spacious house has been taken by the same Society, and fitted up as a lodging-house for 50 single men: its arrangement being, in many respects, applicable to other places, plans of the several floors are given. See page 135.

A statement having been published of the cost of the above-described houses, which is based exclusively on the amounts given for each set or block of cottages in the *lowest* Tender, in order to prevent an erroneous conclusion being drawn therefrom as to the relative cost of the several blocks of building, the following abstract is given of the *two lowest* Tenders, and the *average* amounts of the five Tenders made the 31st of May, 1852, in answer to public advertisement.

|   | Lowest Tender.          | Next Lowest Tender.  |
|---|-------------------------|----------------------|
|   | Per Tenement            | Per Tenement.        |
| The centre block of houses for 8 families . . .   | £868 0 0 or 108 10 0 .. | £775 13 9 or 96 19 3 |
| Two pair of double cottages for 4 families . . .  | 420 0 0 ,, 105 0 0 ..   | 476 3 2 ,, 119 0 9   |
| Two blocks of houses for 8 families . . . . .   | 834 0 0 ,, 104 5 0 ..   | 863 17 6 ,, 107 19 8 |
| Extra concrete to foundations, soft water and manure tanks, cesspools, and drains . . . } | 118 5 0 .. . . .        | 127 10 0             |
|   | £2240 5 0               | £2243 4 5            |

*Average amounts of the five tenders.*

|  |                                    |
|--|------------------------------------|
| The centre block of houses for 8 families . . .  | £916 10 9 or 118 6 4 per tenement. |
| Two pair of double cottages for 4 families . . .   | 560 0 7 ,, 110 0 2 ditto.          |
| Two blocks of houses for 8 families . . . . .  | 1077 11 6 ,, 134 14 0 ditto.       |
| Extra concrete to foundations, soft water and manure tanks, cesspools and drains . . . } | 125 16 8                           |
|  | £2709 19 6                         |

It ought, further, to be observed, that for the tenements in the centre block (which are arranged in flats on two stories), the extent of frontage occupied, the relative cost of drainage, of water supply, of fencing, and of road-making, is less in proportion per tenement than to the self-contained houses.

The highest weekly rents, including rates and taxes, which under ordinary circumstances ought to be expected for such tenements, are 3*s.* 6*d.* for those with two bed-rooms, and 4*s.* 6*d.* for those with three bed-rooms, in the centre block; 4*s.* for the two-bed-roomed, and 5*s.* for the three-bed-roomed tenements in the self-contained cottages. Higher charges than these might lead, in the three-bed-roomed houses, to the very objectionable practice of taking in lodgers.

In many places, where building is less expensive than at Windsor, the rents would be remunerative at a lower rate.



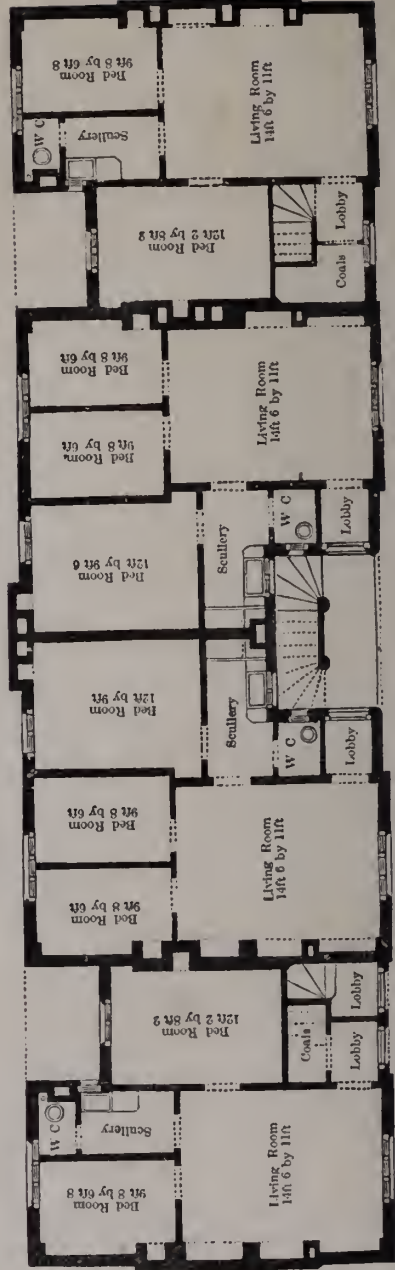
THE WINDSOR ROYAL SOCIETY'S COTTAGES FOR THE WORKING CLASSES.

WINDSOR ROYAL SOCIETY'S COTTAGES.

ELEVATION OF THE CENTRE BUILDING.



PLAN OF THE CENTRE BUILDING FOR EIGHT FAMILIES.



30 feet

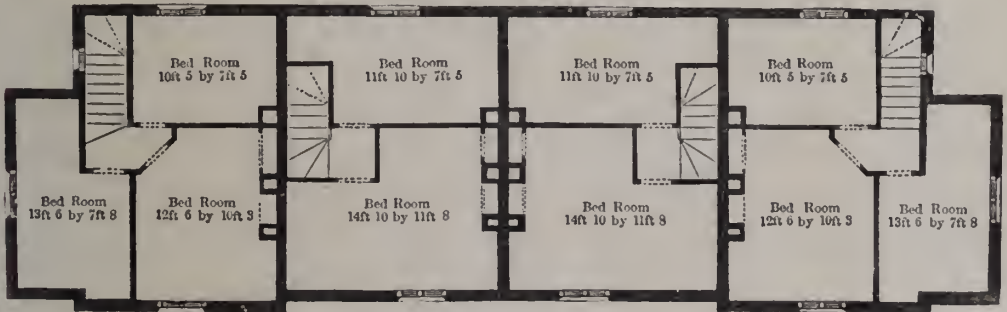
UPPER-FLOOR PLAN.

GROUND-FLOOR PLAN.

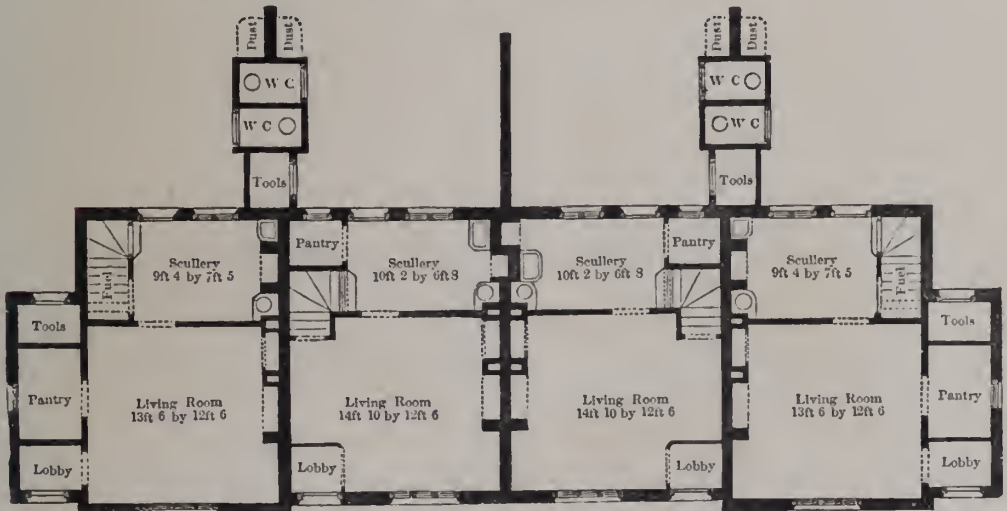
WINDSOR ROYAL SOCIETY'S COTTAGES.



PLANS OF THE COTTAGES FOR FOUR FAMILIES.



BED-ROOM FLOOR PLAN.

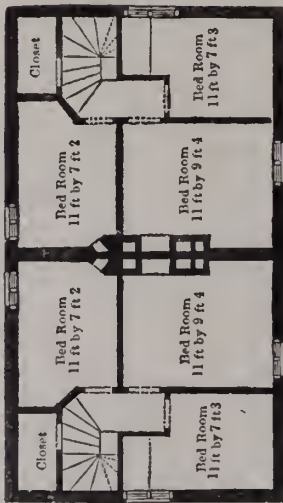


GROUND-FLOOR PLAN.

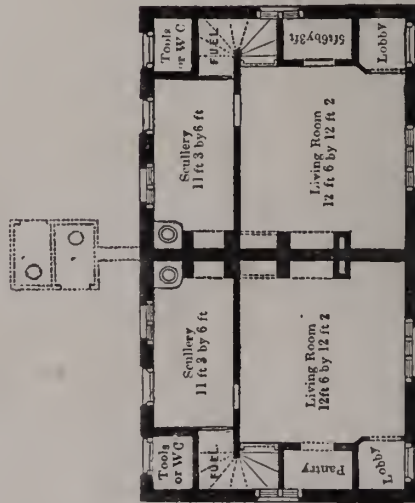


WINDSOR ROYAL SOCIETY'S COTTAGES.

PLANS OF THE DOUBLE COTTAGES.

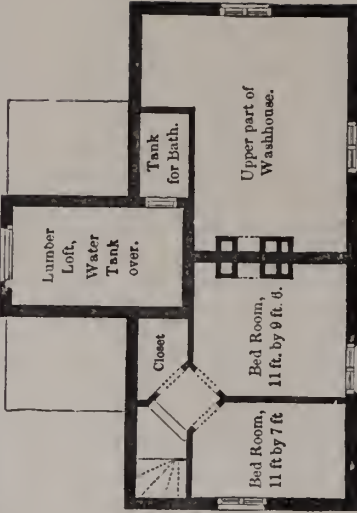


FIRST FLOOR.

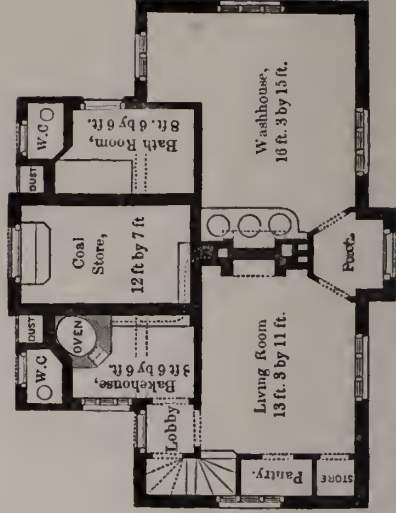


GROUND FLOOR. 10 5 0 10 20 feet.

BUILDING WITH SUPERINTENDENT'S RESIDENCE, BAKEHOUSE, WASHHOUSE, BATH, FUEL STORE, AND TANK.



PLAN OF UPPER FLOOR.

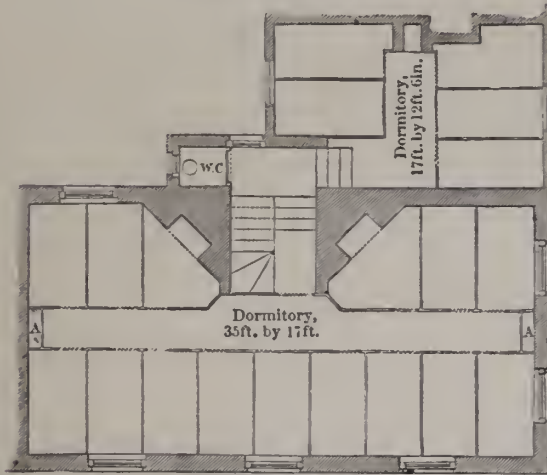


PLAN OF GROUND FLOOR. 10 5 0 10 20

NOTE—The Elevation of these Cottages resembles that given for the Cottages, No. 4.

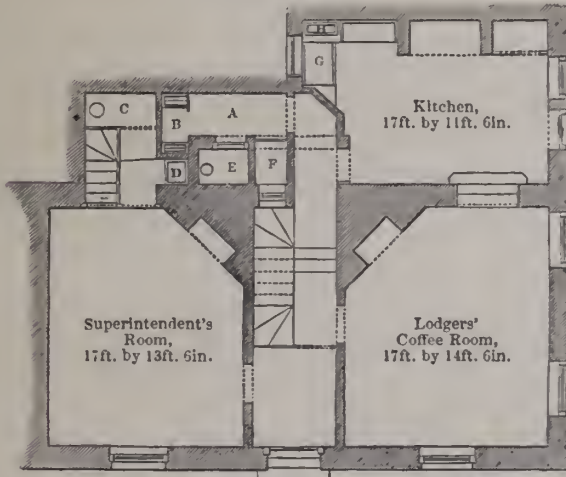
WINDSOR ROYAL SOCIETY'S MODEL LODGING HOUSE  
FOR 50 SINGLE MEN.

FIRST-FLOOR PLAN.

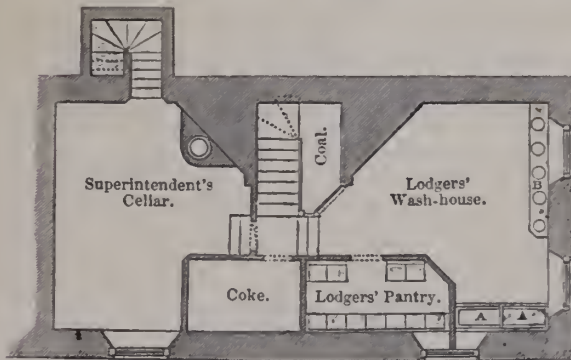


A. Ventilating Shafts.

GROUND-FLOOR PLAN.



- |            |                          |                  |               |
|------------|--------------------------|------------------|---------------|
| A Yard.    | C Superintendent's W. C. | E Lodgers' W. C. | G Sink.       |
| B Urinals. | D Ditto Sink.            | F Dust-bin.      | H Plate-rack. |



A Washing Troughs. B Washing Basins.



COTTAGES BUILT BY THE METROPOLITAN ASSOCIATION.

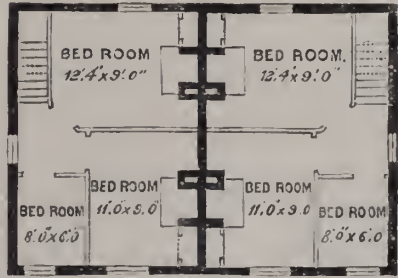
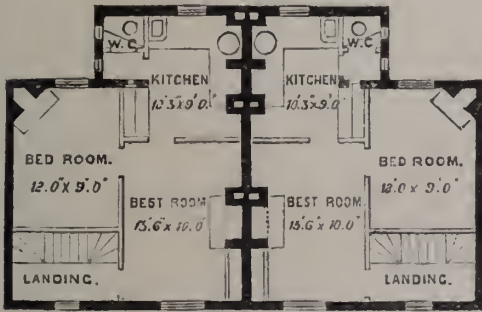
ALBERT COTTAGES, ALBERT STREET, SPITALFIELDS.

ALEXANDRA COTTAGES, PENGE, SURREY.



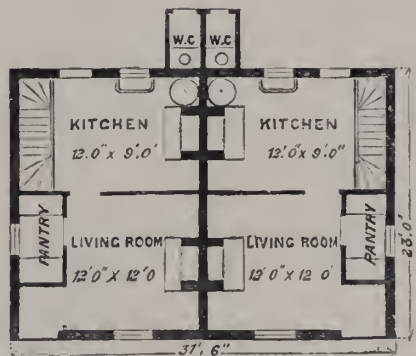
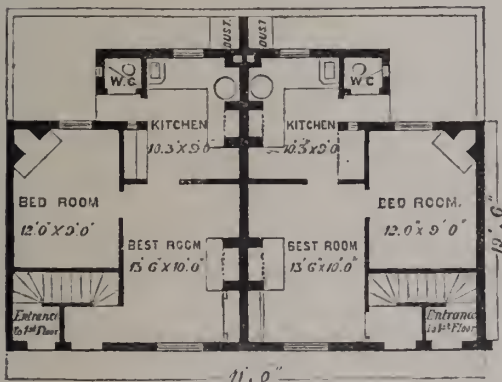
ELEVATION.

ELEVATION.



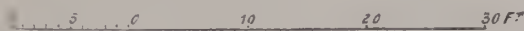
FIRST-FLOOR PLAN.

ONE PAIR PLAN.



GROUND PLAN.

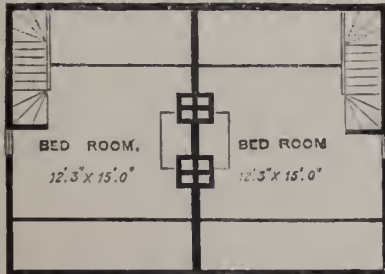
GROUND PLAN.



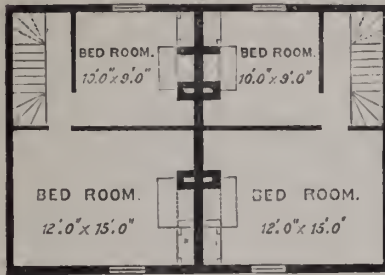
COTTAGES BUILT BY THE METROPOLITAN SOCIETY AT PENGE, SURREY



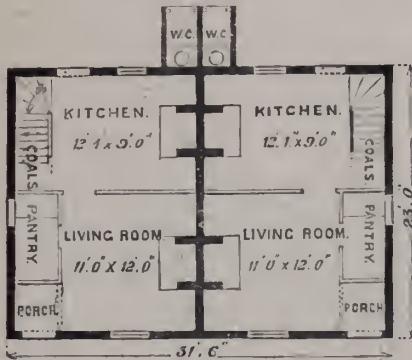
ELEVATION.



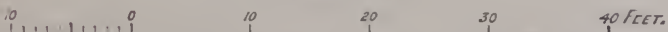
TWO-PAIR PLAN IN ROOF.



ONE-PAIR PLAN.



GROUND PLAN.



Cottages on this plan, built by C. H. Bracebridge, Esq., were described in his paper read at the Meeting for Social Science, Birmingham, 1857.

SUGGESTIONS FOR THE GROUPING OF DOUBLE COTTAGES



N° 2 or 5.



N° 2 or 5.



N° 2 or 5.



N° 6.



N° 2 or 5.



N° 4.



N° 2 or 5.



N° 2 or 5.



N° 4.



N° 2 or 5.



N° 4.



N° 6.

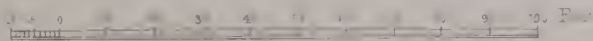


N° 4.



N° 2 or 5.

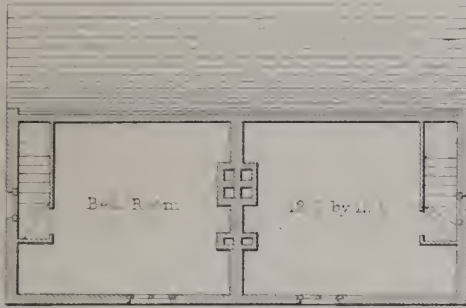
*Nos 1 & 8 may be substituted for No. 6. Nos 3 & 7*



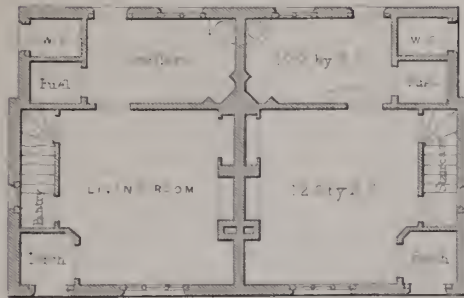
N 1 DOUBLE COTTAGES WITH ONE BED ROOM



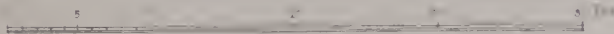
FRONT ELEVATION



UPPER FLOOR PLAN



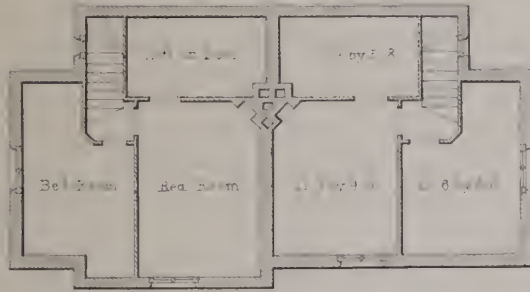
GROUND FLOOR PLAN



NO 2 DOUBLE BOTTAGES WITH TWO BED ROOMS



FRONT ELEVATION



UPPER FLOOR PLAN



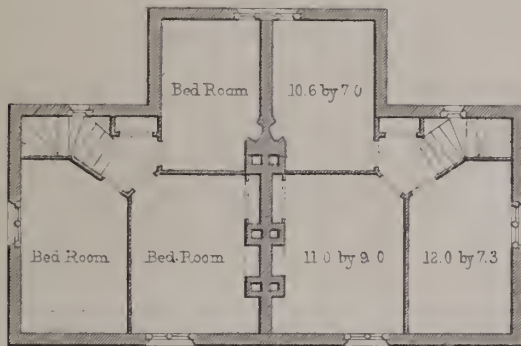
GROUND FLOOR PLAN



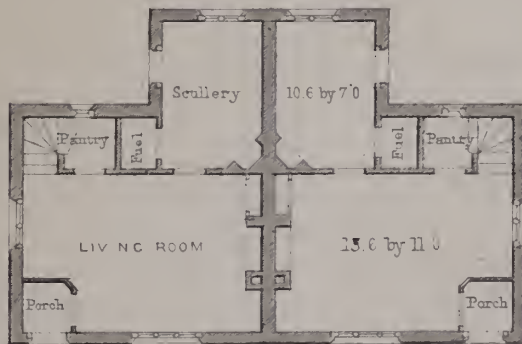
123 DOUBLE COTTAGES WITH THREE BED ROOMS



FRONT ELEVATION



UPPER FLOOR PLAN



GROUND FLOOR PLAN

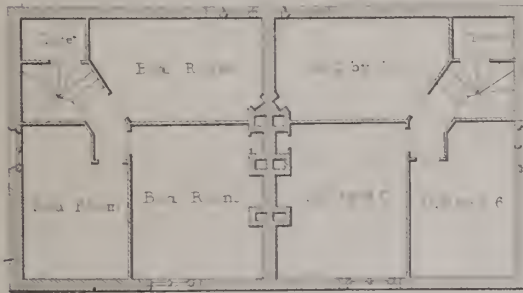




Nº 4 DOUBLE COTTAGE WITH THREE BED ROOMS



FRONT ELEVATION



UPPER FLOOR PLAN



GROUND FLOOR PLAN

№ 5. DOUBLE COTTAGES WITH THREE BED ROOMS.



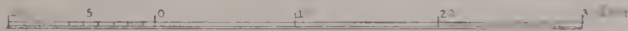
FRONT ELEVATION



UPPER FLOOR PLAN



GROUND FLOOR PLAN

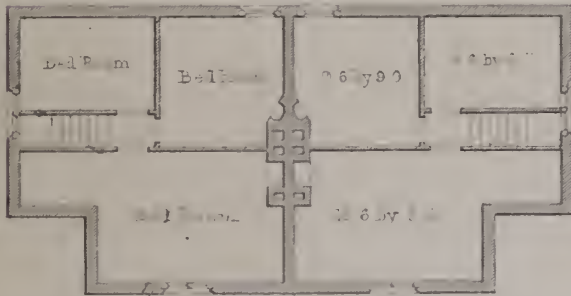


Arch. from Litchfield Cottages

N 6 DOUBLE COTTAGES WITH THREE BED ROOMS



FRONT ELEVATION



FIRST FLOOR PLAN

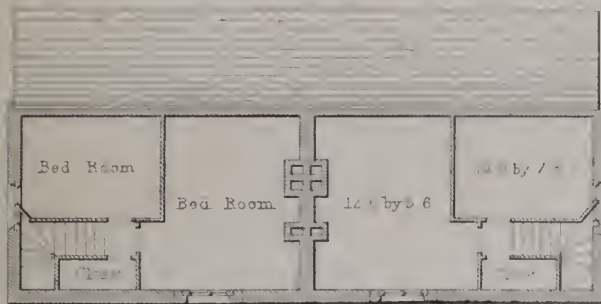


GROUND FLOOR PLAN

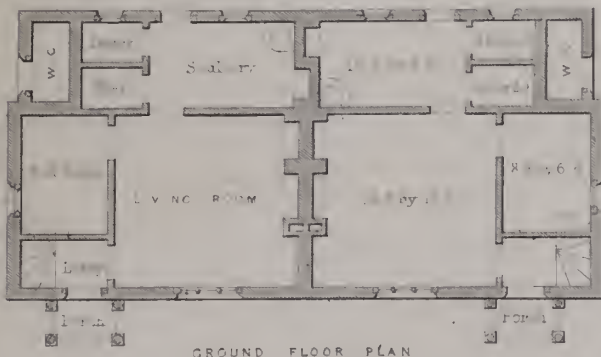
N<sup>o</sup> 7 DOUBLE COTTAGES WITH THREE BED ROOMS  
 ONE ON GROUND FLOOR & TWO ON UPPER FLOOR



FRONT ELEVATION



UPPER FLOOR PLAN



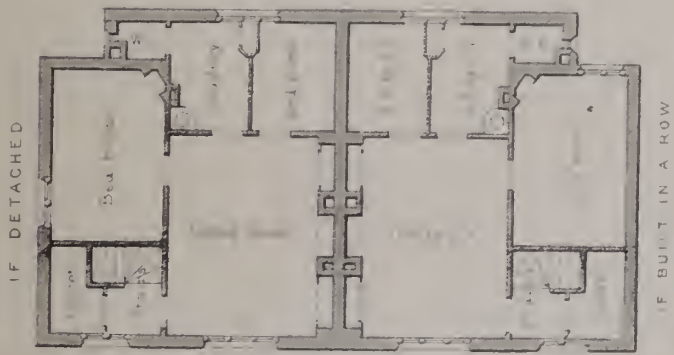
GROUND FLOOR PLAN



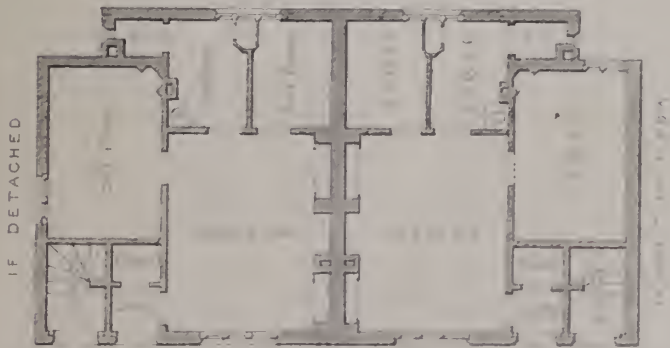
NO. 8 DOUBLE COTTAGES FOR TWO FAMILIES IN EACH



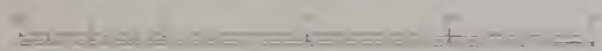
FRONT ELEVATION



UPPER FLOOR PLAN



GROUND FLOOR PLAN



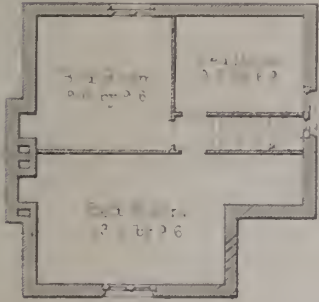
N° 9 SINGLE DWELLING SUITABLE FOR THREE CHOICES



FRONT ELEVATION.



FRONT ELEVATION



UPPER FLOOR PLAN



UPPER FLOOR PLAN



GROUND FLOOR PLAN



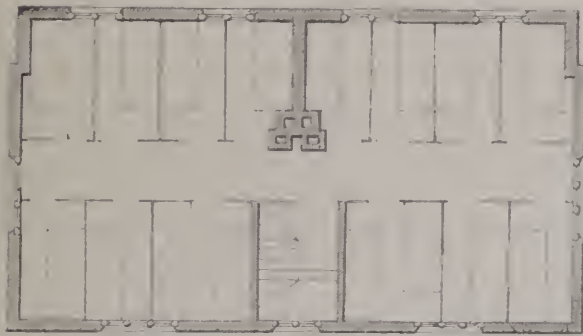
GROUND FLOOR PLAN



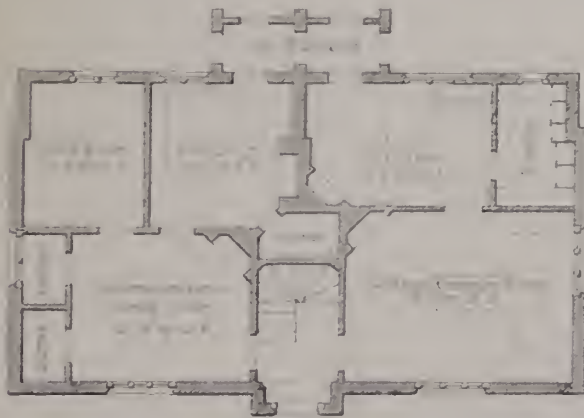
PLAN AND ELEVATION OF UNMARRIED LABOURERS



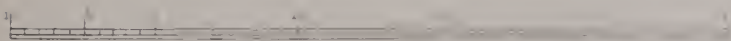
FRONT ELEVATION



DORMER OR UPPER FLOOR PLAN



GROUND FLOOR PLAN





THE CHARACTER OF THIS ELEVATION IS APPLICABLE TO MOST OF THE PRECEDING DESIGNS



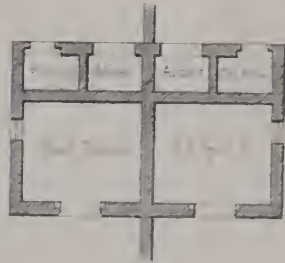
END ELEVATION OF LOWER DESIGN



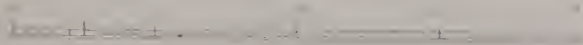
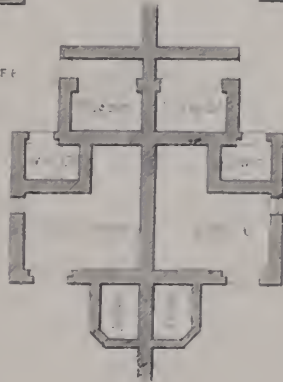
SIDE ELEVATION



PLANS SHOWING THREE ARRANGEMENTS FOR THE BUILDING



ONE WITH AND THE OTHERS WITHOUT A PORCH





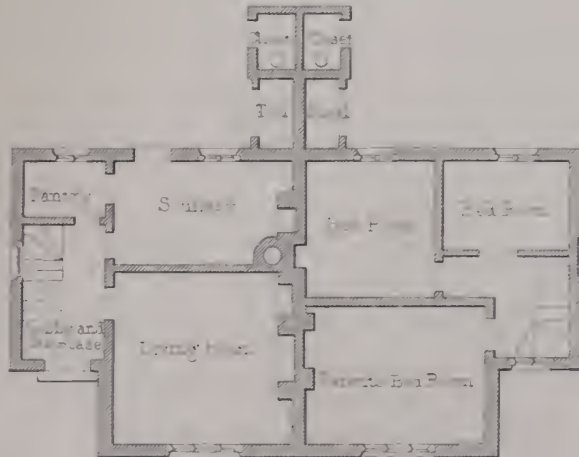
ARTICLE NO. 10 OF LABORERS' SETTLEMENT WITH FRONT PORCH ROOM



ELEVATION WHICH SHOWS THE MORE ORNAMENTAL DETAIL



ELEVATION OF THE LEAST EXPENSIVE CHARACTER



PLAN ON ROOMY FLOOR

ELEVATION WHICH SHOWS THE

1