



AVERTISSEMENT

Ce document est le fruit d'un long travail approuvé par le jury de soutenance et mis à disposition de l'ensemble de la communauté universitaire élargie.

Il est soumis à la propriété intellectuelle de l'auteur. Ceci implique une obligation de citation et de référencement lors de l'utilisation de ce document.

D'autre part, toute contrefaçon, plagiat, reproduction illicite encourt une poursuite pénale.

Contact : ddoc-theses-contact@univ-lorraine.fr

LIENS

Code de la Propriété Intellectuelle. articles L 122. 4

Code de la Propriété Intellectuelle. articles L 335.2- L 335.10

http://www.cfcopies.com/V2/leg/leg_droi.php

<http://www.culture.gouv.fr/culture/infos-pratiques/droits/protection.htm>

UFR Connaissance de l'homme
Département des Sciences de l'éducation
École doctorale « Langages, Temps et Société »
Laboratoire LISEC – EA 2310

Robert Owen, pédagogue de la modernité ?

Thèse de Doctorat en Sciences de l'éducation

Dirigée par

Monsieur le Professeur Loïc CHALMEL

Présentée et soutenue publiquement par

Marie VERGNON

le 12 décembre 2013

Jury : M. Jean-Michel BARREAU, Université de Lorraine

M. Pierre-Philippe BUGNARD, Université de Fribourg

M. Loïc CHALMEL, Université de Haute-Alsace

M. Jean HOUSSAYE, Université de Rouen

M. Bruno POUCET, Université de Picardie Jules Verne

Tome 2

Annexes

Contenu

Contenu	3
Partie 1 - Annexes au chapitre 2	6
Annexe 1 - Couvertures de numéros des trois journaux à la publication desquels Owen prit part	7
Annexe 2 - Projet de loi sur le travail des enfants soumis par Robert Peel et Robert Owen en juin 1815.....	10
Annexe 3 - Extraits des minutes des rapports sur l'emploi des enfants dans les manufactures du Royaume-Uni en 1816.....	14
<i>Extraits de la session du vendredi 26 avril 1816</i>	<i>15</i>
<i>Extraits de la session du lundi 19 avril 1816</i>	<i>26</i>
<i>Extraits de la session du mercredi 1 mai 1816.....</i>	<i>32</i>
<i>Extraits de la session du lundi 6 mai 1816</i>	<i>33</i>
<i>Extraits de la session du mardi 7 mai 1816.....</i>	<i>37</i>
<i>Extraits de la session du vendredi 10 mai 1816</i>	<i>46</i>
Partie 2 - Annexes au chapitre 3	47
Annexe 4 - Lettre d'un instituteur de New Lanark adressée à MacNab et citée par lui (1819/1821, pp. 210 à 212) sur les pratiques journalières à New Lanark. (traduit de l'Anglais par Laffon de Ladébat).....	48
Annexe 5 – École lancastérienne d'Albany de Philip Hooker, 1815.....	50
Annexe 6 – L'institution pour la formation du caractère et l'école de New Lanark, extraits du dossier de demande du classement du village par l'Unesco sur la liste du patrimoine mondial (2001) (pages 53 et 55)	51
Annexe 7 – Extrait de BUCHANAN, B. I. (1923). <i>Buchanan family records : James Buchanan and his descendants</i>	53
Annexe 8 – Extrait de RUSK, Robert (1933). <i>A History of Infant Education</i>	59
Annexe 9 - Article sur James Buchanan et les Infant Schools paru dans <i>The Westminster and Foreign Quarterly Review</i>	61
Annexe 10 – Lettre de Robert Owen au rédacteur en chef du Times en date du 12 novembre 1834.....	64
Annexe 11 – Citations de Lord Henry Brouham et Samuel Wilderspin collectées par Robert Owen, relatives aux origines des Infant Schools.....	67

Annexe 12 – Allocution des habitants de New Lanark adressée à Robert Owen	68
Annexe 13 – APPENDICE de l' <i>Esquisse du système d'éducation suivi dans les écoles de New Lanark</i> , de Robert DALE OWEN	69
Annexe 14 – Copies d'extraits de cahiers d'arithmétiques d'élèves de New Lanark estimés autour de 1826.	86
Annexe 15 - Lettre de Robert Owen à Miss Carnegie 30 oct. 1817	101
Partie 3 - Annexes au chapitre 4	105
Annexe 16 – Présentation des règles sur lesquelles fondées des colonies autosuffisantes sur le modèle d'Owen.....	106
Annexe 17 – Lettre de Robert Owen à l'éditeur du Limerick Chronicle sur ses croyances religieuses.....	117
Annexe 18 – Croquis de New Harmony par Charles Alexandre Lesueur.	119
Annexe 19 – Détail du premier plan d'organisation des colonies de Robert Owen dans son <i>Report to the Committee of the Association for the Relief of the Manufacturing and Labouring Poor</i> (1817).....	124
Annexe 20 – Présentation de l'organisation de la colonie modèle par Robert Owen.....	125
Annexe 21 – Croquis légendé de Stedman Whitwell tiré de Whitwell, T. S. (1830).....	129
Annexe 22 – Maquette de New Harmony.....	130
Partie 4 – New Lanark aujourd'hui : la salle de classe reconstituée	131
Annexe 23 - La Salle de classe	132
Annexe 24 - La galerie des musiciens.....	133
Annexe 25 - Le globe et la frise zoologique.....	134
Annexe 26 - Frises historiques.....	135
Annexe 27 - Planches de botanique et zoologie	136
Annexe 28 - Partition collective.....	137
Annexe 29 - Planche de géométrie.....	137

Partie 1 - Annexes au chapitre 2

Annexe 1 - Couvertures de numéros des trois journaux à la publication
desquels Owen prit part

THE
ECONOMIST:
A PERIODICAL PAPER,
EXPLANATORY OF
THE NEW SYSTEM OF SOCIETY
PROJECTED BY
ROBERT OWEN, ESQ.
AND OF A
PLAN OF ASSOCIATION
FOR IMPROVING THE CONDITION OF THE
Working Classes,
DURING THEIR CONTINUANCE AT THEIR PRESENT
EMPLOYMENTS.

~~~~~  
Homo sum—Humani nihil a me alienum puto.  
~~~~~

TER.

VOL. II.

*Published every SATURDAY Morning, in Numbers, Price 3d. each, by
the Co-operative and Economical Society, No. 1, Guilford Street, East,
Bagnigge Wells Road; and by Mr. Wright, bookseller, No. 46, Fleet
Street; where the Trade, Newsmen, &c. may be supplied; and where
Orders, Communications to the Editor, &c. post paid, are respectfully
requested to be addressed.*

PRICE 7s. BOARDS.

1822.



THE CRISIS,

OR THE CHANGE FROM ERROR AND MISERY, TO TRUTH AND HAPPINESS.

1832.

IF WE CANNOT YET

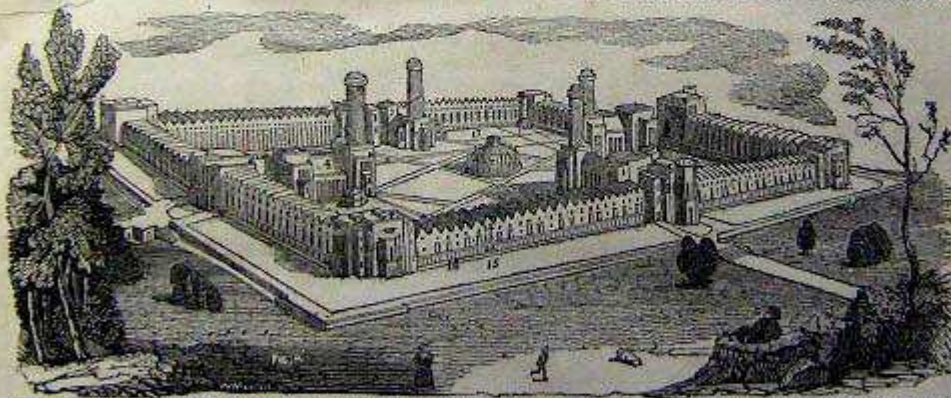
LET US ENDEAVOUR



RECONCILE ALL OPINIONS,

TO UNITE ALL HEARTS.

IT IS OF ALL TRUTHS THE MOST IMPORTANT, THAT THE CHARACTER OF MAN IS FORMED FOR—NOT BY HIMSELF.



Design of a Community of 2,000 Persons, founded upon a principle, commended by Plato, Lord Bacon, Sir T. More, & R. Owen.

EDITED BY
ROBERT OWEN AND ROBERT DALE OWEN.

London:

PRINTED AND PUBLISHED BY J. EAMONSON, 15, CHICHESTER PLACE,
GRAY'S INN ROAD.

STRANGE, PATERNOSTER ROW. PURKISS, OLD COMPTON STREET,
AND MAY BE HAD OF ALL BOOKSELLERS.

1833.

Ma-

113
149, 153

PART I.

ROBERT OWEN'S
MILLENNIAL GAZETTE

EXPLANATORY

OF THE PRINCIPLES AND PRACTICES BY WHICH, IN
PEACE, WITH TRUTH, HONESTY, AND SIM-
PLICITY, THE NEW EXISTENCE OF MAN
UPON THE EARTH MAY BE EASILY
AND SPEEDILY COMMENCED.

MARCH 22nd, 1856.

"The Character of man is formed *for* him, and not *by* him."

LONDON:

PUBLISHED BY THE AUTHOR AT 16, GREAT WINDMILL STREET,
HAYMARKET, AND SOLD BY
J. CLAYTON AND SON, 223, PICCADILLY;
HOLYOAKE, 147, FLEET STREET; TRUELOVE, 240, STRAND;
GODDARD, 14, GREAT PORTLAND STREET, CAVENDISH SQUARE;
FARRER, 21, JOHN STREET, FITZROY SQUARE.
AND ALL BOOKSELLERS.

1856.

Price 6d.

Annexe 2 - Projet de loi sur le travail des enfants soumis par Robert Peel et Robert Owen en juin 1815, reproduit en annexe de l'autobiographie de Robert Owen (1858, pp.23-26)

APPENDIX G.

A B I L L

To amend and extend an Act, made in the 42nd Year of His present Majesty, for the Preservation of the Health and Morals of Apprentices, and others, employed in Cotton and other Mills, and Cotton and other Factories. As proposed by Mr. Owen and first amended by the Committee in the Session of 1815. With Observations of Opponents, as published by them in the same Session. June, 1815.

Whereas an Act was made in the Forty-second year of the reign of his present Majesty, intituled, "An Act for the Preservation of the Health and Morals of Apprentices, and others, employed in Cotton and other Mills, and Cotton and other Factories:"

And whereas the said Act has been found ineffectual to answer the Purposes thereby intended, and it is expedient that the same should be altered, extended, and amended ;

Be it therefore Enacted by the KING'S Most excellent MAJESTY, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, THAT from and after the Fifteenth day of *April* one thousand eight hundred and sixteen, the said recited Act and this Act shall extend and be construed to extend to all Cotton, Woollen, Flax, and other Mills, Manufactories, or Buildings, in which *Twenty or more Persons* shall be employed *under the age of Eighteen Years*.

And be it further Enacted, That no Male or Female shall be employed in any such Mill, Manufactory, or Building, until he or she shall have attained the age of *Ten* years, to be ascertained by the Register of Baptism, or other satisfactory evidence.

And be it further Enacted, That no person being under the age of *Eighteen* years shall be employed in any such Mill, Manufactory,

or Building, for more than *Ten hours and a half* in any one day, exclusive of *half an hour* for Breakfast, *one hour* for Dinner, and *half an hour* for Instruction, making in the whole, *Twelve hours and a half*; and to prevent working in the night, the aforesaid *Twelve hours and a half* shall be performed sometime between the hours of *Five* of the clock in the morning, and *Nine* of the clock in the evening: provided always, That in case any Mill, Manufactory, or Building, shall be prevented from working on account of necessary repairs, or other unavoidable accident, it shall and may be lawful for the Master or Mistress of such Mill, Manufactory, or Building, to employ any person under the age of Eighteen years, for a longer period than *Ten hours and a half* in a day, provided that no such persons shall be compelled to work in any one day more than Two hours beyond the period herein before mentioned, nor to exceed in the whole the time so lost.

And be it further enacted, That every such person shall, for the Four first years after the time of their admission into any such Mill, Manufactory, or Building, be instructed one half hour in every working day, in Reading, Writing, and Arithmetic, by some discreet and proper Person to be provided by the Master or Mistress of every such Mill, Manufactory, or Building, in some room or place to be set apart for such purpose in or near such Mill, Manufactory, or Building, or in some public School near thereto.

And be it further Enacted, That every such Master or Mistress shall, on or before the First day of *June* in every year, transmit to the Clerk of the Peace for the County, Stewartry, Riding, Division, or Place, in which any such Mill, Manufactory, or Building shall be situated, a return of the several particulars contained in the Schedule hereunto annexed; all which Returns the respective Clerks of the Peace are hereby directed and required to lay before the Justices of the Peace for the County, Stewartry, Riding, Division, or Place, at their ensuing Quarter Sessions: and if any such Master or Mistress shall neglect to make any such Return within the period aforesaid, or shall wilfully make any false or untrue Return, every such Master or Mistress shall for every such offence forfeit and pay any Sum not exceeding Ten Pounds nor less than Five Pounds.

And be it further Enacted, That so much of the said Act, as directs that the Justices of the Peace for every County, Stewartry, Riding, Division, or Place, shall appoint two Persons, one of whom shall be a Justice of the Peace, and the other shall be a Clergyman of the Established Church of *England* or *Scotland*, to be Visitors of Mills, Manufactories, or Buildings, shall be and the same is hereby Repealed.

And be it further Enacted, That the Justices of the Peace for every County, Stewartry, Riding, Division, or Place, in which any such Mill, Manufactory, or Building shall be situated, shall,

at the Midsummer Sessions of the Peace to be holden immediately after the Fifteenth day of *April*, one thousand eight hundred and sixteen, for such County, Stewartry, Riding, Division, or Place, and afterwards yearly at their Annual *Midsummer* Sessions of the Peace, appoint the Clerk of the Peace or his Deputy in *England* or *Ireland*, or his Deputies in *Scotland*, or one or more persons duly qualified, and not interested in or in any way connected with any such Mills, Manufactories, or Buildings, to be Visitors of such Mills, Manufactories, or Buildings, in such County, Stewartry, Riding, Division, or Place, for the year ensuing; and the said Visitor or Visitors, or either of them, shall have full power and authority from time to time throughout the year, to enter into and inspect any such Mill, Manufactory, or Building, and the young Persons employed in such Mill, Manufactory, or Building, at any time of the day, or during the hours of employment, as they shall think fit; and such Visitor or Visitors shall report at least once in every year, in writing, to the Quarter Session of the Peace, the state and condition of such Mills, Manufactories, and Buildings, and the young persons employed in them, and whether the same are or are not conducted and regulated according to the directions of the said recited Act and this Act; and such Report shall be entered by the Clerk of the Peace of every such County, Stewartry, Riding, Division, or Place, among the Records of the Session, in a Book to be kept for that purpose: Provided always, That it shall and may be lawful to and for the Justices of the Peace, at such Sessions, annually to order and direct a full and adequate compensation to be made to the said Visitors, for their trouble and expenses, out of the rates of the County, Stewartry, Riding, Division, or Place.

And be it further Enacted, That in case the said Visitors, or either of them, shall find that any infectious Disorder appears to prevail in any Mill or Factory as aforesaid, it shall be lawful for them, or either of them, to require the Master or Mistress of any such Mill or Factory to call in forthwith some Physician, or other competent medical person, for the purpose of ascertaining the nature and probable effects of such Disorder, and for applying such Remedies, and recommending such Regulations as the said Physician, or other competent medical person, shall think most proper for preventing the spreading of the Infection, and for restoring the Health of the Sick; and that such Physician, or other competent medical person, shall report to such Visitors, or either of them, as often as they shall be required so to do, their Opinion in writing of the nature, progress, and present state of the Disorder, together with its probable effects; and that any expenses incurred, in consequence of the provisions aforesaid, for medical assistance, shall be discharged by the Master or Mistress of such Mill or Factory.

And be it further Enacted, That if any person or persons shall oppose or molest any of the said Visitors in the execution of the Powers intrusted to them by this Act, every such person or persons shall for every such offence forfeit and pay any sum not exceeding Ten Pounds nor less than Five Pounds.

And be it further Enacted, That the Master or Mistress of every such Mill, Manufactory, or Building, shall cause printed or written Copies of this Act to be hung up and affixed in one or more conspicuous places in such Mill, Manufactory, or Building, and shall cause the same to be constantly kept and renewed, so that they may at all times be legible and accessible to all persons visiting or employed therein.

And be it further Enacted, That every Master or Mistress of any such Mill, Manufactory, or Building, who shall wilfully act contrary to or offend against any of the Provisions of the said Act or this Act, shall for every such offence, (except where otherwise directed,) forfeit and pay any sum not exceeding Ten Pounds nor less than Five Pounds, at the discretion of the Justices before whom such Offender shall be convicted; Half whereof shall be paid to the Informer, and the other Half to the Overseers of the Poor in *England* and *Ireland*, and to the Ministers and Elders in *Scotland*, of the Parish or Place where such offence shall be committed, to be by them applied in aid of the Poor Rate in *England* and *Ireland*, and for the benefit of the Poor in *Scotland*, of such Parish or Place: Provided always, That all Information for offences against the said Act or this Act, shall be laid within Three Calendar Months after the offence committed, and not afterwards: Provided also, That all Penalties inflicted by this Act, shall be levied, recovered, and applied, in manner directed by the said recited Act.

SCHEDULE to which this ACT refers.

I, A. B. do hereby Certify, THAT no Boy or Girl has been employed in any Mill, [Manufactory or Building as the case may be,] during the preceding year, who was not *Ten* years of age; nor has any person under Eighteen years of age been employed more than *Ten hours and a half, exclusive of Two Hours, which were duly allowed for Meals and Instruction*, except as this Act directs: And I also certify, That Instruction has been provided for the said Boys and Girls, according to the directions of an act made in the Fifty-fifth year of the reign of His present Majesty, intituled, "An Act [*here set forth the Title of this Act*]: I further Certify, That the Mill [Manufactory or Building] has been ventilated and white-washed, in conformity to an act made in the Forty-second year of the reign of His present Majesty, intituled, "An Act for the Preservation of the Health and Morals of Apprentices, and others, employed in Cotton and other Mills, and "Cotton and other Factories."

Annexe 3 - Extraits des minutes des rapports sur l'emploi des enfants dans les manufactures du Royaume-Uni en 1816, publiés in OWEN, R (1857). Report of the Meetings of the Congress of the Advanced Minds of the World, Londres : Effingham Wilson

R E P O R T

OF THE

MINUTES OF EVIDENCE,


TAKEN BEFORE THE

SELECT COMMITTEE

On the State of the Children employed in the
Manufactories of The United Kingdom.

25 April—18 June

1816.



Ordered, by The House of Commons, to be Printed,
28 May & 19 June 1816.

Mr. Robert Owen, called in, and Examined.

WHAT is your situation in life?—I am principal proprietor and sole acting partner of the establishment at New Lanark, in Scotland.

How many persons, young and old, are immediately supported by the New Lanark manufactory and establishment?—About 2,300: Upon the first of January last the numbers were 2,297, I believe.

To how many out of that number do you give employment?—This number varies occasionally, but upon the average about sixteen or seventeen hundred.

The remainder of the 2,300 are the wives and children?—Children too young, and persons too old, of the same families; some of the wives are employed.

Do you mean that the 2,300 are the number composing the whole of the families, some parts of which are employed in the works?—Yes; the difference between those immediately employed in the works and the number first stated, are those who are too young for work, or too old, or wives who are obliged to attend families too young for work.

What is the population of the village?—About 2,300.

At what age do you take children into your mills?—At ten and upwards.

What are your regular hours of labour per day, exclusive of meal times?—Ten hours and three quarters.

What time do you allow for meals?—Three quarters of an hour for dinner, and half an hour for breakfast.

Then your full time of work per day is twelve hours, out of which time you allow the mills to cease work for an hour and a quarter?—Yes.

Why do you not employ children at an earlier age?—Because I consider it would be injurious to the children, and not beneficial to the proprietors.

What reason have you to suppose it is injurious to the children to be employed in regular manufactories at an earlier age?—The evidence of very strong facts.

What are those facts?—Seventeen years ago, a number of individuals, with myself, purchased the New Lanark establishment from the late Mr. Dale, of Glasgow: At that period I found there were 500 children, who had been taken from poor-houses, chiefly in Edinburgh, and those children were generally from the age of five and six, to seven and eight; they were so taken because Mr. Dale could not, I learned afterwards, obtain them at a more advanced period of life; if he did not take them at those ages, he could not obtain them at all. The hours of work at that time were thirteen, inclusive of meal times, and an hour and a half was allowed for meals. I very soon discovered that, although those children were extremely well fed, well clothed, well lodged, and very great care taken of them when out of the mills, their growth and their minds were materially injured by being employed at those ages within the cotton mills for eleven hours and a half per day. It is true that those children, in consequence of being so well fed and clothed and lodged, looked fresh, and, to a superficial observer, healthy in their countenances; yet their limbs were very generally deformed, their growth was stunted, and, although one of the best school-masters upon the old plan was engaged to instruct those children regularly every night, in general they made but a very slow progress, even in learning the common alphabet. Those appearances strongly impressed themselves upon my mind to proceed solely from the number of hours they were employed in those mills during the day, because in every other respect they were as well taken care of, and as well looked after, as any children could be. Those were some, and perhaps they may be considered by the Committee sufficient, facts to induce me to suppose that the children were injured by being taken into the mills at this early age, and employed for so many hours; therefore, as soon as I had it in

in my power, I adopted regulations to put an end to a system which appeared to me to be so injurious.

In consequence then of your conviction that children are injured by being employed the usual daily hours in manufactories, when under ten years of age, you have for some time refused to receive children into your works till they are ten years of age?—Yes.

Do you think the age of ten to be the best period for the admission of children into full and constant employment for ten or eleven hours per day, within woollen, cotton, or other mills or manufactories?—I do not.

What other period would you recommend for their admission to full work?—Twelve years.

How then would you employ them from ten to the age of twelve?—For the two years preceding, to be partially instructed; to be instructed one half the day, and the other half to be initiated into the manufactories by parties employing two sets of children in the day, on the same principle that two sets of children were employed when proprietors thought it their interest to work day and night.

If such be your opinion, how happen you not to have acted upon it?—Had the works been entirely my own, I should have acted upon that principle some time ago, but being connected with other gentlemen, I deem it necessary in practice not to deviate so much from the common regulations of the country as I otherwise would have done; and, besides, it required some time to prepare the population for so material a change from that to which they had been previously accustomed.

In your opinion, what parties would be benefited by such a regulation?—The children, the proprietors of manufactories, and the country.

Have you any returns of the state of the health of the persons employed in the manufactory, when Mr. Dale was the proprietor of it?—I have not.

You have said, that the hours of work per day, for the children and others employed in your manufactories, were twelve, including one hour and a quarter for meals; what were the longest hours that you ever tried?—Fourteen, with one hour for dinner and one hour for breakfast.

Why did you reduce that number?—In consequence of finding it to be still more injurious to the health of the work-people than the thirteen.

Did you diminish the period from fourteen to twelve, at once?—No.

Why did you reduce them from thirteen to twelve hours?—Because I have found by experience, that every improvement or change, among the working classes in particular, is more easily effected when made gradually than suddenly.

Do you think ten hours and three quarters a day the proper time for children to be employed in manufactories?—I do not.

What time would you recommend?—About ten hours of actual employment, or, at the most, ten hours and a half.

Do you think, if such an arrangement were made in regard to the number of hours, the manufacturers would suffer any loss in consequence?—My conviction is, that no party would suffer in consequence of it.

Either with reference to the home or the foreign trade?—Either with reference to the home or the foreign trade.

What benefits do you contemplate from this limitation of time?—A very considerable improvement in the health of the operatives, both young and old; a very considerable improvement in the instruction of the rising generation; and a very considerable diminution in the poor rates of the country.

In fact, have you, during the time that the hours were longer, found any sensible difference in those three respects that you have mentioned?—I have found all the effects that I have contemplated; and I have found, from our last regulation, which only took place upon the 1st of January last, that there has been a very sensible difference in the general health and spirits of the whole mass of the population so employed, so much so, that they feel strongly the change which has taken place; and I understand, since I came to London, their feelings have been so strong upon the subject, that, from their own experience now, they have sent a petition to the House of Commons, praying that their fellow-labourers of a similar description may receive the same benefits, which petition, I believe, was referred to this Committee: I do not know a word which it contains; I have

F

not

397.

22 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

not seen it, or heard its contents, except from the gentlemen who presented it to the House.

Do you give instruction to any part of your population?—Yes.

What part?—To the children from three years old, upwards; and to every other part of the population that chuse to receive it.

Will you state the particulars?—There is a preparatory school, into which all the children, from the age of three to six, are admitted at the option of the parents; there is a second school, in which all the children of the population, from six to ten, are admitted; and if any of the parents, from being more easy in their circumstances, and setting a higher value upon instruction, wish to continue their children at school for one, two, three, or four years longer, they are at liberty to do so; they are never asked to take the children from the school to the works.

Will you state who supports the schools?—The schools are supported immediately at the expense of the establishment; they are indeed literally and truly supported by the people themselves.

Will you explain how that is?—New Lanark was a new settlement formed by Mr. Dale; the part of the country in which these works were erected was very thinly inhabited, and the Scotch peasantry generally were disinclined to work in cotton mills; it was necessary that great efforts should therefore be made to collect a new population in such a situation; and such population was collected before the usual and customary means for conveniently supplying a population with food were formed, the work people therefore were obliged to buy their food and other articles at a very high price; and under many great disadvantages; to counterbalance this inconvenience, a store was opened at the establishment, into which provisions of the best quality, and clothes of the most useful kind, were introduced, to be sold at the option of the people, at a price sufficient to cover prime-cost and charges, and to cover the accidents of such a business, it being understood at the time that whatever profits arose from this establishment, those profits should be employed for the general benefit of the work people themselves; and these school establishments have been supported, as well as other things, by the surplus profits, because in consequence of the pretty general moral habits of the people, there have been very few losses by bad debts, and although they have been supplied considerably under the price of provisions in the neighbourhood, yet the surplus profits have in all cases been sufficient to bear the expense of these school establishments; therefore, they have literally been supported by the people themselves.

What effects have you experienced from these plans of instruction?—The best possible. It perhaps may be useful, as there are many gentlemen present who are interested in these questions, and who may not have had the experience I have had, to state, that when these schools were opened, it was not considered sufficient that attention should be paid merely to instructing the children in what are called the common rudiments of learning, that is, in reading, writing, arithmetic, and the girls also in sewing, but it was deemed of much greater importance, that attention should be given by the masters to form the moral habits of the children, and their dispositions; and in consequence, the moral habits of the children have been improved in such a manner as that from the 1st of January last to the time I left the establishment, about a week ago, out of two hundred and about twenty children, who are in school in the day, and three hundred and eighty or ninety, who are in school at night, there has not been occasion to punish one single individual; and as the school is arranged upon such principles as are calculated to give the children a good deal of exercise and some amusement, the children are more willing and more desirous of attending the school, and the occupations which they are engaged in there, than of going to their ordinary play: the most unpleasant time they have in the week is the Saturday afternoon, which is necessarily a holiday, in consequence of the schools, in which they are taught, being washed and cleaned on that day. I have found other and very important advantages, in a pecuniary view, from this arrangement and these plans. In consequence of the individuals observing that real attention is given to their comforts and to their improvements, they are willing to work at much lower wages at that establishment, than at others at no great distance, which are esteemed to be upon the best plans in the country, with all the newest improvements. Perhaps one fact may place this part of the subject in a clear and distinct view: one of our Superintendents of

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 23

of rooms, to whom we gave wages of 18 s. per week, was induced to go to a very good mill (where the machinery was new, and all the modern improvements attached to it) in consequence of being offered a guinea a week; in a short time, however, an application was made by the same individual, through his friends, who remained at Lanark, to be permitted to return; his situation had been previously filled up, and there was no vacancy for him, but his friends were told, that the first vacancy that offered should be mentioned, and he should have the refusal of it: Some weeks afterwards, a situation, inferior to the one which he filled, became vacant; the party who filled this situation received regularly but 14 s. a week; this situation, through his friends, was accordingly, as we had promised, offered to him; he willingly accepted the offer, saying, that he would prefer very much to work at New Lanark for 14 s. a week, to working at those new mills at Glasgow for a guinea; and he is now employed by us at 14 s. a week, and has been so for months past.

What length of time per day, at school, do you conceive would be necessary to give boys common instruction in reading and writing?—That depends very much upon the capacity of the children, and more materially upon the plans adopted by the teachers: Under the best system I have ever witnessed, at which indeed I was present this morning at the National School, the children are taught to read not only well, but better than any other children I have heard, not only in a small number but in the gross, in twelve months: There can be no doubt, children may be taught to read and write, and understand accounts, and the girls also to sew, by attending to those rudiments one hour a day for a given number of years; but if they attend two hours a day, it will be done in less than one half of that time.

The town of Lanark is entirely dependent upon your manufactory?—Entirely so.

Do you think that the regulations which are in force at New Lanark, would apply to a large populous manufacturing town, where the inhabitants are not entirely dependent upon a manufactory?—The same principles, I conceive, may be applied, under different modifications, to any situation, either where there are few or many.

What employment could be found for the children of the poor, in those situations, till ten years of age?—It does not appear to me that it is necessary for children to be employed, under ten years of age, in any regular work.

If you did not employ them in any regular work, what would you do with them?—Instruct them, and give them exercise.

Would not there be a danger of their acquiring, by that time, vicious habits, for want of regular occupation?—My own experience leads me to say that I have found quite the reverse, that their habits have been good in proportion to the extent of their instruction.

That proceeds upon the supposition that they are to be instructed?—Most assuredly; if the children are not to be instructed, they had better be employed in any occupation that should keep them out of mischief.

You know a good deal of Manchester?—I do know something of it.

You have been in fact a resident in Manchester?—Yes; previous to the purchase of the Lanark Establishment, I had the superintendence and management, some time as a manager and some time as a partner, of cotton mills in the neighbourhood of Manchester.

Do you think that the schools established upon Bell's and Lancaster's, and other plans, at Manchester, would be sufficient for the instruction of the children there, till the time that they are regularly employed in the manufactories?—When I was in Manchester last year, there was more school-room than children to fill it, and upon enquiring the reason, I found that there were such strong inducements held out, from the different manufactories in the town and neighbourhood, to the parents, to send the children early to work, that it counterbalanced any inclination such people had to send them to school; therefore the schools were not filled, nor nearly so.

Then you apprehend, that by making it necessary for them to have some instruction before they entered into any manufactory, the common people would be thereby induced to send their children to school?—I think it would have a strong influence in deciding them to do so.

You have stated, that according to your opinion it would be desirable and proper

24 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

proper that children should not be introduced into manufactories, or compelled to work, earlier than twelve years old?—Not exactly so; I stated, that I thought that the best age for children to be employed on a full day's work was twelve, but that for the two years previous to that time, they might be advantageously occupying one half the day in making further progress in their instruction, and the other half in acquiring the habits of a manufacturing life.

Do not you conceive that the same wages would not be given for half a day as for a whole day?—I conceive if two sets of children were employed, the parents could not expect to receive the same wages as if they were employed the whole day.

Then in works where children were so employed, double the number of children would be necessary?—So far as children are required under twelve years of age only.

Do you conceive, if children were not to be introduced into these factories till twelve years old, they would be as well fed and supported as they are now?—I recollect the period well when there were not any manufactories in several parts of the country (I speak of England and Wales;) and the children, as far as I recollect, of the poor, were then as well fed, as well clothed, and, as far as my memory serves me, looked as well as now, and few or none of them were employed regularly until they were twelve, thirteen, and fourteen years of age.

Do you conceive that the population of the country was the same then that it is now?—Not so great.

Your observations apply to a time previous to the establishment of factories?—In a great measure; before the general establishment of factories, when they were thinly strewed over the country.

In what manner do you conceive the children were supported at that time?—In the same manner that children are now supported in various parts of the country where there are no manufactories in which children are employed at an early age.

That is, where there is but a small population?—There are parts of the country, where there is a considerable population, in which the children generally are not employed till they are twelve, thirteen, and fourteen years of age; I allude particularly to Newcastle-upon-Tyne: and a fact occurs to me, which will explain a good deal of what has previously passed, and which will enable us pretty accurately to judge of the difference in the population, and between employing the children at an early age, and a later one. Last year I had occasion, for my own information, wishing to derive a knowledge of the best plans of instruction that were in practice, to visit the chief manufacturing districts and other parts of the kingdom; and upon those occasions I generally visited the public schools, the National and the Lancasterian, and any others that were open to me; and I found one fact which impressed itself very forcibly upon my mind: When I was in Manchester, I saw one of the handsomest school-rooms that perhaps ever has been erected for the instruction of poor children, and I found it not more than half filled: within a day of this time I visited the Lancasterian school at Newcastle; it was full: I observed instantly on entering this room, a most marked and decided difference in the countenances and conduct of the children, when compared with the children in the Manchester school; I was therefore anxious to discover what was the cause which produced this difference. I returned to them again a second time, and made more minute enquiries. I found, from Mr. Perkins, the master of the Manchester school, that upon the average the children remained upon his charge in that public school about four months; in the school at Newcastle, upon making the same enquiry, I found the children remained there upon the average four years; the sole reason of which was, that the parents of the children in Manchester were tempted to send the children to the works at an early age (for there is no limitation by law,) and on the contrary there was no inducement at Newcastle for the employment of children under twelve, thirteen, and fourteen, and therefore they remained during that period, upon the average, in the school.

Did Mr. Perkins ever state to you that in eighteen months he could complete the education of the children, as far as he thought it necessary for children in those circumstances to be educated?—He did not so state to me; but it is possible that may be his opinion.

Did you remark a proficiency in the children of that school, and a quickness in answering questions, particularly arithmetical questions?—I did.

Did

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 25

Did you see any apparent deficiency in the faculties of those children?—I saw a very striking deficiency in the habits of those children; it was visible in their countenances.

Did not the children appear alert, active and healthy, there?—The children appeared alert and active; and, certainly, on the subject of arithmetic, many of them had made a very considerable progress.

Was not Mr. Dale subject to considerable difficulties in obtaining a population?—Yes.

Is it not probable that the children he brought there from workhouses might not have been so well fed as children born in Lanark?—I imagine he must have taken a fair average of children from such situations.

Would you suppose the children, at any particular period of life, coming from workhouses, would be as healthy as children born in such a village as Lanark?—Generally speaking, I imagine they would not be quite so healthy.

You have stated, that the children that were employed in that factory, and who had been brought from workhouses, though they looked healthy, were stunted in their growth?—Yes.

Might not that be occasioned by what had occurred previously to their being brought to Mr. Dale's works?—Those effects were far too general to lead me to suppose that they chiefly arose from such a cause.

Could those effects have escaped the attention of an intelligent man like Mr. Dale; and if he had observed them, would not his humanity have suggested a remedy for those evils?—There were no other means by which Mr. Dale could carry forward his manufactory; and it required some time before Mr. Dale could be aware of the injurious effects of such a system on those children; and moreover he was not resident at these works, he lived twenty-seven miles distant, and was seldom there more than one day in three or four months.

Was he himself sensible of those effects being produced by the labour of the children?—I had much communication with Mr. Dale, soon after I purchased these works, and told him my sentiments, and my determination to alter the system; and he seemed to think it very right it should be altered as soon as it could be effected in practice.

The difference between the hours of employment, in his time and yours, is three quarters of an hour a day?—No; I think I have mentioned that at one period we worked an hour longer.

Your work is now three-quarters of an hour less per day than Mr. Dale's was?—Yes.

Then the Committee is to understand, that three-quarters of an hour more in a day occasions the children being stunted and dwarfish, and that three-quarters of an hour less in a day prevents those effects being produced?—Pardon me; I stated that those children were employed at the early ages of five, six, and seven, and that now we do not take any children into the manufactory under ten years of age, which, I apprehend, will make a very considerable difference, combined with the diminution of hours.

Then the age affects your judgment on this subject?—Very materially.

You do not then suppose that if children of the age of ten years worked three quarters of an hour more each day, the effect would be that their growth would be stunted, and they would be dwarfish; and that if they did not work that three quarters of an hour each day, they would not be stunted nor dwarfish?—No; but I apprehend their health would be considerably better by being worked three quarters of an hour a day less.

You have alluded to the moral improvement of the children since you paid attention to these works yourself; was the same attention uniformly paid by you, since you have had the management of these works, to the improvement of the morals of the children, that is now paid?—The same attention, in fact, was always given by me to the amelioration and improvement of the population, though, in appearance, it has been much greater latterly, since plans, which have been long in preparation, have been carried into execution.

Have you uniformly paid the same attention to the schools, that you have done of late?—Not uniformly, in consequence of the plans regarding them not being ripened, which I always had in contemplation.

You have stated, that formerly little improvement was made by the children under the instruction they received?—Yes, in my own time, while the system previously established was continued.

397.

G

It

26 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

It appears that at that time your own superintendence was not given to the same degree to the schools, that it has been given since the establishment of schools on your own principles?—It was necessary that I should previously pay the first attention to the proper arrangement of the works: being then but a junior partner with many others, it became my duty to put the works in a situation to be of pecuniary advantage to my partners and myself.

Then the Committee are to understand, that so far as your personal superintendence has a tendency to improve the children as far as respects their education, that superintendence did not exist formerly to the same extent it does now?—Not to the same extent.

Is there any thing peculiar in your system of education?—I do not know that I can state any thing peculiar in my system; it is a combination of what appears to me the best parts of the National and Lancasterian systems, with some little additions which have suggested themselves.

What religious instruction do you give the children?—They have the same religious instruction in the schools at New Lanark as in all the other schools in Scotland.

Do they regularly attend church on Sundays?—Those that are old enough, and have accommodation in the parish or other churches, which are all a mile distant, very generally attend.

What age do you conceive them old enough at?—That depends very much upon the opinion of the parents and the inclination of the children; but there is a Sunday school also open three times a day; the young children under ten years of age, who are considered too young to go to church, and particularly to walk through snow and bad weather in winter, attend the Sunday school for two hours in the forenoon, and two hours in the afternoon; the young persons who are more advanced in life, and who may not have accommodation in the parish church or in the public chapels, have an opportunity of meeting in the evening on the Sundays.

Are they examined as to their improvement in religious knowledge?—They are.

By whom?—By the parish minister.

Having seen a publication of yours on the subject of the improvements you have made in the condition of the people in Lanark, will you have the goodness to state to the Committee what are those principles, by the discovery of which you have been enabled to make such improvements in the condition of the people of Lanark, as other persons have not made elsewhere?—I have no pretensions whatever to the discovery of any new principles; indeed I have no pretensions, nor do I make pretensions of any kind, even with regard to practice; only I have attempted to put old principles into practice, perhaps under some varied, or as some people suppose, new combinations, which I am very willing to explain. I can very shortly state the principle upon which the whole I have described has been done, and the principle by which what is going forward will also be done: it is merely from my long experience in superintending a great number of people, young persons in particular, I find that, by adopting certain measures, a very great improvement may be made upon their habits and general conduct, by applying principles of prevention of error; and having found that, I have not been deceived in any of my expectations when those principles have been applied to practice; and seeing how much happiness the people have experienced under this kind of arrangement, I acknowledge I have been very anxious, and am now very anxious, that those benefits should be generally extended over the whole kingdom.

You have had no particular moral or religious theory upon the application of which you conceive such important advantages as have been alluded to will be derived?—The principles surely cannot be imagined to be new, when I state that they are simply to endeavour to impress upon all the children committed to my care, as far as possible, the benefit and advantage of acquiring sentiments of charity for the opinions of all other members of society, and that they shall, without any exceptions, endeavour to benefit each other and all other persons; those

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 27

those are the simple principles and the only principles upon which their instruction proceeds, different from the common usage of the country.

In those principles you do not say there is any great novelty?—None at all; there may be a novelty perhaps in such instruction being given to children.

You have stated, that the health of the children at Lanark, before you were employed, was not so good as it has been since; can you state at all what was the number of deaths that occurred in any one year, of any of those children?—I do not recollect those facts, and if I did recollect them I would pay very little regard to any results that could be derived from them, because I know that it is the common practice in all manufactories to obtain the strongest and most active and expert persons, to pick them out of society, and to employ those individuals so long as their strength and activity will permit them to produce a certain great quantity per spindle or per machine, while they are at work; it is decisively the interest, according to the present supposition of the gentlemen engaged in the trade, and I speak of those gentlemen with the utmost respect; many of them are my personal friends, I know them to be men of high character and great benevolence; but I imagine that each of us, if we were placed in their situation, would do exactly the same in this case as they do. It appears, from the manner in which they have been instructed, to be their interest to produce the greatest possible quantity of work from their machines, and that greatest possible quantity of work cannot be produced but by people in good health and great activity: now there is the whole population of the country at their command, they are not restricted in any way from discharging any individual not competent to produce that quantity of work which they conceive to be for their interest, or to prevent them from taking in new hands; therefore any such returns must be extremely fallacious.

In point of fact, what was the condition of the health when you took the Lanark mill?—The condition of the children, who were kept in one large house, called the Boarding-house, was precisely what I have previously stated.

State it again?—That the children were well fed, well clothed, well lodged, kept cleanly, and the best means of instruction for such children provided.

What was the state of the health at that time of those children?—I state distinctly their health to be very much short of children in a sound state of body.

You have stated, that in their looks they looked perfectly well; that in the appearance to a stranger they had all the appearance of health?—I have stated, that to a superficial observer the children might have the appearance of good health.

Have you a knowledge of the state of manufactories in any part of England?—Yes, I have a general knowledge.

From your knowledge, what is the state of the health of the children employed in the different works?—In those manufactories in which the time of work is not very long, where the children are not taken in at a very early age, and where the proprietors are men of enlarged minds, and possessing some degree of benevolence, to induce them to look after the welfare of those from whom they derive their support and their wealth, the children are perhaps better off than they are in many other situations.

Are you acquainted with any manufactories at Carlisle?—I have occasionally seen some of the manufactories at Carlisle within the last two years.

Will you state the state of their health at the time you saw them?—It did not occur to me that the average of the persons employed in the mills at Carlisle were in more than a very moderate degree of health.

You speak to two years ago?—Yes, it is about two years ago since I visited some of the largest mills in that neighbourhood.

Will you point out what has been the number, to your knowledge, of children who have been discharged, from being incapable of performing their work?—It is a question which no individual can answer.

Do you know, in fact, that there has been any one child discharged from any one mill on that ground, and state where?—I do not know it, because I have confined

18 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

confined my attention, for the last seventeen years, particularly to the establishment at Lanark, which is a considerable distance from any other manufactory; and it was not my business to enquire into the particulars of any one mill, when the general facts were quite sufficient to satisfy me of the necessity of some legislative interference.

Then the Committee are to understand, that you do not know that, from the hours that are worked in any mill, any injury has accrued to the health of those employed?—My own observations, frequently as I have passed through Manchester, would lead me to say, certainly, that the people I have met were very much injured by their mode of life; but I am not singular in this supposition, for it is the common observation of every stranger who passes through the town.

Do you conceive that it is not injurious to the manufacturer to hazard, by over-work, the health of the people he employs?—If those persons were purchased by the manufacturer, I should say decisively yes; but as they are not purchased by the manufacturer, and the country must bear all the loss of their strength and their energy, it does not appear, at first sight, to be the interest of the manufacturer to do so.

Then in taking a new hand, does not it require some time to teach him, and some loss to the proprietor to do so?—Surely.

Then the Committee understand it to be contrary to the interest of the manufacturers to be perpetually changing their people?—Undoubtedly; but there are now in society a great variety of individuals who have been taught the various manufactures; and the balance in other cases will naturally be, between weakly trained and strong untrained hands.

Is there not a considerable trouble in taking new hands, so as to make it undoubtedly not the interest of the manufacturer to change his work-people?—Not so much his interest, certainly, as though the new hands were well trained.

Then it is contrary to his interest to have a frequent change of hands?—It is decisively his interest to have the greatest possible produce produced.

Is not the most effective and the greatest portion of labour from any machine, man, or other, to be obtained by a moderate and fair proportion of work?—Most assuredly.

And is not any attempt of overstraining that machine, contrary to the interest of the person employing it?—When the subject shall be well considered, I conceive it to be highly injurious.

The Committee wish next to ask, whether, in reducing your hours of work, you also reduced your price of labour?—No, I did not.

Is the labour performed in your mill, by the piece or by the day?—Partly by both.

What is the proportion, then, between the two?—I cannot say very correctly, but I think possibly about equal.

No alteration has been made in the price of the labour?—No alteration, any further than as those individuals who were employed by the piece before this alteration took place, did earn a greater proportion of wages than those who worked by the day, and have experienced a diminution of wages in proportion to the diminution of the quantity of work produced in the shorter period compared with the longer; this, however, is very trifling.

You have stated, that it is certainly injurious to the master who employs persons in factories to overwork those persons; the Committee wish to ask, whether no other master than yourself has made this discovery?—I hope a great many have.

36 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

Mr. Robert Owen, again called in, and Examined.

WHAT is the temperature of your mill?—The temperature of the mills at Lanark, in consequence of the yarn which is spun there being coarse, and not requiring any further heat than is agreeable to the individual, seldom exceeds from 60 to 70; and indeed there is no artificial heat employed at the mills at Lanark, except for the four winter months.

Do you speak from actual observation of a thermometer?—I do not speak from actual observation of a thermometer.

By what means have you ascertained that to be the heat of your mills?—By being daily in them.

Have you any means, from your own feelings, to take upon you to state what is the temperature of this room at this moment?—Pretty accurately.

What would you state it at?—I should think probably near 60.

Have you applied any thermometer in your works, to ascertain the state of the heat of your different apartments?—As we never require any extraordinary heat, I have not.

The Committee wish to know whether, in your examination of the different mills at Carlisle, you made any observation as to the temperature at which the children worked?—To my feelings the mills in which I was at Carlisle, were considerably warmer than those at Lanark.

At what time was it that you visited those mills?—I believe it was in the Spring; but I do not recollect the particular day, or even the month, at present.

Did you enquire of any person employed, what was the heat of those rooms?—I did not.

Did it strike you at the time, that the heat was such as to be injurious to the health of the people employed?—I felt it extremely disagreeable to myself.

Do you know whether the mills that you visited, were heated by any artificial means?—Yes, they were heated by artificial means.

Are you acquainted with the price of coals at Carlisle?—I did make enquiry at that time, but as I never place any thing on my memory that is not important for me to retain, I do not recollect.

Do not you know, from its situation, that coals are an article of great cost there?—It is very probable they may be.

Do you, from your knowledge of the works, know that it was at all requisite, from the works carrying on, to have the rooms heated to the heat you describe?—I believe it was.

Did you make any enquiries as to the general state of health of those mills?—I did not make any enquiries, but I observed the appearances of the people.

You made no enquiry?—I did not.

What was the comparison between the children employed in those mills, and those employed in your own at Lanark?—The children appeared to me to be much more sallow, to be less strong, and in general not to bear the same general appearance of health.

What mills were those you visited at Carlisle?—I would request that I may not be asked to name any mills individually.

The Committee is under the necessity to press the question, as there happen to be certificates as to the state of health of all the mills?—Carlisle mill.

What mill is that?—There is a mill called the Carlisle Mill, which I believe is the largest mill in the neighbourhood of Carlisle.

Recently built?—Within the last five or six years.

Will you have the goodness to state the size of the rooms of that mill?—The mills appeared to me to be about the average of the other mills I have seen, in point of cleanliness and temperature, and every thing else.

Is not the size of that manufactory considerably larger than most?—There are many others equal in size.

Were

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 37

Were there any at Carlisle equal in size?—I believe not; I know there were some smaller. I do not know whether there were any larger.

Some probably have half the dimensions?—I cannot speak from my own knowledge.

Do you know the partners in that mill?—I do not know.

Was Doctor Esham one of the partners?—I do not know.

Did you make any enquiries as to the general state of health of the manufacturing classes at Carlisle?—I have made enquiries, particularly lately, and the replies which I have had, are, That the children and others employed in the cotton manufactories are not, as far as they can be judged by general appearances, more healthy than children employed in other manufactories.

Has not the health of the children been remarkably good for the last three or four months?—I have no means of ascertaining that fact.

What is the state of the poor rates at Manchester now, and when you left it seventeen years ago?—I have not the means of stating that.

You do not know then whether they are increased or not?—I do not know.

Do you believe, from the manufacturing wages paid at Manchester, that were the parents prevented from employing the children the hours they now do, it would not be a great and serious inconvenience to the parties?—I believe it would be quite the reverse.

What are the grounds of your opinion?—From all the experience of my life, I have uniformly found that where children were not employed at an early age by families, those families were generally in a more comfortable and respectable situation in life, than those families where the children have been employed at an early period.

Is the state of the manufactories such, that abstracting eighteen-pence a week from the gains of the children, would not be severely felt by the families?—I believe it would be quite the reverse; that they would be very much benefited by their children being prevented working till they were ten years of age.

In point of fact, are not the children of those families who are not employed, generally idle?—In large towns, some years ago, I believe the children were generally idle in the streets, and I fear at many places now that is the case, yet I understand, that in most populous towns there are a sufficient number of public schools open, into which those children may go without any inconvenience; and from the public attention that is now given to the instruction of children, in all probability, in lieu of their being in the streets acquiring bad habits, they would be put into those schools where they would acquire instruction.

Are the schools at Manchester generally full?—They are not.

Will you account for how the direct reverse of what you suppose to be the case, happens to be the fact?—Simply by stating, as the only reason, that there is a very strong temptation to ignorant people to send their children, when they ought to go to school, to work in manufactories.

In point of fact then, are all the children at Manchester employed in the manufactories, excepting those who go to school?—I have not the means of ascertaining that fact.

In point of fact, is there not ten applications to have the children employed, for one where they can be employed?—I have no means of knowing that; I should think otherwise.

Then is the state of the works of the cotton manufactories in England, such as to make it any difficulty for them to obtain children at this moment?—When there are so many children offered from five and six years of age to ten, it is very likely there may be many applications, and those applications unsuccessful; but I conceive, if the children were prevented from working till they were ten years of age, there would be a sufficient number for the demand, and not more.

Are there any children employed under seven years old?—Yes.

397.

K

Where?—

38 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

Where?—In Leeds, in Stockport, in Macclesfield, and in almost all the manufacturing districts.

There are children employed under seven years of age?—Yes.

Will you name the factories?—If the Committee will have the goodness to lend me their aid, I will name the parties who will give direct evidence to those facts.

Then you only know it from hearsay?—I know it from the persons who have been employed, from the manufacturers themselves, and those of the highest respectability.

What you are now speaking, is from hearsay, and not your own knowledge?—It is from the direct information of the most respectable manufacturers in the kingdom.

You do not know it of your own knowledge?—I have not been in those mills from morning till night; I have not been to investigate in person the details of other mills, but I saw a large mill dismissed at noon in Leeds, about ten days ago, and from the appearance of the children I should conclude that many of them were under seven years of age, some of them under six.

Supposing the children to be prevented, under ten years of age, from working, what security do you suppose there is that their parents would send them to school?—The security is one which I took the liberty of suggesting, and if I may be permitted, as it is a very short statement, I will read it: That the children of either sex shall not be admitted into any manufactory, after a time to be named, until they can read and write in a useful manner, understand the first four rules of arithmetic; and the girls be likewise competent to sew their common garments and clothes.

If it is to be attended with expense, do you conceive the state of the manufacturers is such as to hope they would be disposed to send their children to school?—I cannot tell what they would be disposed to do; but I can speak from fact, that working these limited hours the establishment at Lanark is competent to educate those children from the age of three to ten, without any loss to the proprietors, and affording them a reasonable and fair profit.

Are the profits of the manufacturing trade, particularly with regard to our foreign trade, in a situation to bear any additional burthen thrown upon them?—I find so small a difference between the prime cost of the material manufactured when the hours are limited, to those which I have stated, that I think it would hardly make a perceptible difference in the prime cost of any article, when the great advantages are considered which will arise from those limited hours to counteract the disadvantage of limited produce: I have a firm conviction upon my own mind, that those articles will be produced as cheap, under the limited time and age, as they are now without limitation.

Must not the proposed limitations either enhance the price of labour, or decrease the gains of the labourer?—I do not see the necessity for either.

From your extensive acquaintance with the lower orders, and that benevolent attention which you seem to have paid to their situation, the Committee wish to ask, what has been the result of your observation, and whether you believe that there is that want of affection and feeling on the part of parents, that would induce them to exact from their children more labour than they could perform, without injury to their health?—I do not imagine that there is the smallest difference between the general affection of the lower order of people and the higher, except with regard to that which may be produced by the different circumstances in which they are placed.

That is not precisely an answer to the question, the Committee wish to know, whether from your observation, you believe that the parent, if he were to conceive that the hours he works his child were injurious to his health, would be disposed to exact that labour from that child?—Many of them, I believe, would; but the greater number, I think, would not.

When you visited the factories at Carlisle, you went in out of the cold air to visit them, do not you think that that would make the heat appear sixty or seventy, when in fact it was not above fifty or fifty-five?—It may be so; I am aware

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 39

aware our feelings are very inaccurate thermometers; but I have been upwards of twenty-five years accustomed to cotton mills, and I felt the heat, combined with the effluvia of the room, oppressive; and I am sure my health would have been injured if I had been there any length of time.

Can you give the Committee any information relative to the state of children that are sent down from London into the country, and apprenticed by order of the overseers of the different London parishes?—I have not the means of stating any particular facts regarding those children; I have heard various reports; some of them very favourable to the parties who have the care of them, and some very much the reverse.

Are you able to state the youngest children, that to your knowledge have been sent from London or the neighbourhood, to the manufactories?—I have not made any enquiries.

You have none at your manufactories?—No; they are all free labourers.

Do you know of any statement by which it is understood that idiots are sent from the overseers in London to be employed in the manufactories?—I have heard that stated, and that there was a bargain between the overseers and the proprietors to receive one in twenty.

Do you believe that has been acted upon?—I have not the means of knowing it.

You do not know whether such an agreement took place, or not?—I do not; I could ascertain it in a day or two, I have no doubt.

You have stated, that the children, when you came to the works, though apparently fresh and healthy, were really deformed, and stunted in their growth, in consequence of being over-worked, and received at too early an age; will you have the goodness to state what motives induced you to lengthen the time of working, as you say you did?—I did not say I found the children in that crippled state when I first got there, but afterwards I found that to be the case. The reason the hours were increased, was, that other mills over the kingdom at that time employed their children a greater length of time; and the parties with whom I was connected wished the mills to be employed that time.

Did you continue employing the children this lengthened time, after you had discovered, that in consequence of being over-worked and received at too early an age, they had become deformed and stunted?—I employed them as short a time as possible under the circumstances.

When did you change your hours?—I have not the means of ascertaining that now.

You can tell within a year or two?—I do not recollect; I never place any thing on my memory, unless I conceive it of importance it should remain there.

Surely you would think it of importance to fix in your memory when you changed the hours of employment?—No, I did not.

How long have you been in the habit of employing children this shortened time during the day?—From the first of January last.

Then the Committee are to understand, that your change of hours was on the first of January last?—Yes.

What hours did they work before?—Eleven hours and three quarters for several years preceding; I do not know how many.

Then your observation upon the improvement of the children, from the shorter number of hours work, has only been made since last January?—Yes, from the shortest hours. That reminds me of one of the parts of the evidence which was rather defective: I was permitted to state on Friday some of the principal advantages that I found to arise from this limitation of hours; and it is a very important circumstance, which I should have pleasure to impress on the minds of the Committee and the gentlemen present, that, previous to the first of January last, although we had an evening school open for many years, the utmost number of children that usually attended, when the hours of employment were eleven and three

40 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

three quarters, were about 100 per night on the average, very frequently less: But so soon as a reduction was made of another hour, down to ten hours and three quarters per day, the number immediately increased; and I believe, in less than a week, there was a regular attendance of those persons previously employed in the mills in the day, of 350, 360, 370, and, for a considerable time past, 390.

Did you use means to induce the children to go to school, that you had not used before?—The only means I used was, to give them a larger room, to make the attendance at school as beneficial for them, as I had been very long arranging the means of doing.

Perhaps you might yourself make a point of more constantly attending and seeing the children, and of course under your attention they would be more inclined to come as a matter of duty, than before?—I have made a point of attending to any new alteration that has taken place in the establishment, and probably I may have attended more upon this alteration; but I have received a letter from the establishment since I came away, and I have much pleasure in saying, that in lieu of the numbers diminishing during my absence they have increased. I have indeed in my hands here a register of the school, and an accurate number of the school attendants during the whole day.

Do you know the number of illegitimate children born in any one year in the time of Mr. Dale, when the factories were in his possession?—I have not now the means of ascertaining that fact, but at the time that I purchased the works in connection with other gentlemen, they were very numerous.

The number of illegitimate children born in a year, during that time, was very great?—Very great, compared with the last five or six years.

Do you say that from an accurate investigation of the fact, or from conjecture?—From pretty accurate knowledge of the fact, the cause of which I will state; in a year or less after I had been at Lanark, I found the number of illegitimate children to be considerable, and they increased for two or three years. I found it necessary to devise some means by which a stop should be put to a practice so injurious to the inhabitants and to the neighbourhood; and I made a regulation by which each young person both male and female connected with the fact, was obliged to pay a regular weekly sum to a poor's fund established in the place; the men two shillings a week, and the females one shilling a week: And this I found to be so effectual, that in two or three years afterwards, the instances became very rare indeed; and I have among my papers the name of every individual for the last six years who has had an illegitimate child.

And you can take upon you to declare, the number has decreased since the time the factory was in the possession of Mr. Dale?—Very materially.

Extraits de la session du mercredi 1 mai 1816

[Mr. Robert Owen delivered in the following Paper; which was read.]

" FROM THE GENERAL REGISTER.

		AGE.	Day.	Evening.	TOTAL	
Boys	from	3 to 6	41	-	-	Preparatory Class.
-	-	6 to 10	104	-	-	
-	-	10 to 15	-	124	145	Reading, writing, arithmetic, music, dancing and military exercise.
-	-	15 to 20	-	49		
-	-	20 to 25	-	1		
					174	
Girls	from	3 to 6	39	-	-	Preparatory Class.
-	-	6 to 10	90	-	-	
-	-	10 to 15	-	220	129	Reading, writing, arithmetic, sewing, dancing and music.
-	-	15 to 20	-	52		
-	-	20 to 25	-	39	311	
			274	485	759	

Average rate of Attendance, 622."

Mr. Robert Owen, again called in, and Examined.

AS you have turned your attention particularly to the object of the enquiry of this Committee, will you have the goodness to state what you suppose to be the number of children employed in the cotton manufactories in Scotland under seven years of age?—There is a gentleman present who has a paper, which will give the exact number of those employed now.

Have you seen that paper?—I have seen it, but I have not had an opportunity of making any extracts from it; I imagine it may be put in as evidence before the Committee.

Are the Committee to understand that you have yourself made no calculation upon that head?—I have made no calculation upon that head; but I can state a fact which may perhaps give all the information the Committee require. On passing through some of the manufacturing districts in Yorkshire, about a fortnight or three weeks ago, I understood, that upon the Bill generally known by the name of Sir Robert Peel's Bill, which was brought into Parliament last session, a great number of children under ten years of age were discharged from several mills.

Is this a matter that you know to be the fact, or is it only hearsay?—I had it from the proprietors themselves, who discharged the children.

Can you state to what amount you understood children under seven years of age to be discharged?—I have no means of ascertaining the number, but I imagine they must be considerable.

Will you be so good as to state of what mills, and who were the parties from whom you had this information?—The information was from a Mr. Sedgwick, at Skipton, in Yorkshire, who is the nephew of Mr. Sedgwick, the proprietor of the mill. Mr. Sedgwick the proprietor is on the continent.

Do you know of any other place in which children under seven years old have been discharged?—I understood from this gentleman, that it had been pretty general in this district of the country.

Did you make any enquiry of him to what amount the children might be that were discharged?—I did not.

Have you never formed any estimate yourself of the number of children that may be employed in manufactories in England and Scotland, not exceeding ten years old?—It would be very difficult to obtain an accurate enumeration of those children; they are perpetually varying, to a considerable extent, every year.

Do you believe that there are 5,000 children under ten years old employed in all the manufactories of Lancashire?—Probably now, in consequence of the Bill brought in last session, a very considerable number may have been discharged; but I conceive, that before the introduction of that Bill, and before it was spoken of, the numbers were considerably more.

Are you acquainted with the manufactories at Preston?—I have some information, very accurate information, given by a catholic clergyman immediately from Preston.

Have you any personal knowledge of the party by whom the letter in your hand is signed?—I have not.

You have no knowledge personally of the individual from whom the information therein contained has come?—I have not.

Can you of your own knowledge inform the Committee what may be the number of children, not exceeding ten years of age, employed in the manufactories at present?—I have no information on the subject.

In manufactories where 2,800 people are employed, what proportion do you suppose would be children under ten years old?—I conceive the number would be in exact proportion to the knowledge which the proprietors have of their own interest, and the interest of the children.

Will you be so good as to tell me what, upon an average, would be the number of children employed in such manufactories?—The only reply I can make is, that I have uniformly found, as the proprietors of manufactories have understood their own interest and the interest of those whom they employ, the numbers under ten years of age have been very few.

Then

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 87

Then you have never directed your attention to acquaint yourself with the number of children employed in manufactories in England or Scotland under ten years old?—I have not gone from town to town, and from manufactory to manufactory, to make the enquiry.

You have not made any enquiry or estimate in your own mind of the number of children that may be employed under ten years of age, and what would be the operation of any Act?—I did not make the enquiry, in consequence of observing, as I passed through the manufacturing districts, a great number of children at work under ten years of age.

What was the number of people employed at the new mill at Carlisle, when you visited it two years ago?—It did not occur to me to ask the question; and if I had asked the question, I should not have received an answer, probably.

Could you form any estimate of the number of persons employed at the new mill at Carlisle two years ago, when you visited it?—When a stranger visits a mill, he is generally admitted into one or two rooms, and he seldom sees more than the best parts of the manufactory.

Will you state particularly, what was the state and appearance of the children you did see there?—I have answered that question in my former examination; I believe I stated distinctly, that the mill at Carlisle appeared to me to be in about the average of the mills I have seen, in point of management and cleanliness, and the health of the people; that they did not appear to me particularly healthy or otherwise.

You were understood to state, that they had an unhealthy appearance?—If the question is asked with reference to the persons employed out of manufactories, I would say they had an unhealthy appearance.

Was it with a reference to people in general, or to your own manufactory?—Partly to both.

Then the Committee are to understand from you, that you cannot form any estimate, from knowing the number in a manufactory, what would be the proportion of children and adult persons?—Those vary almost in every mill and every manufactory in the kingdom, because some individuals are in the habit of taking children at five, some at four, some at six, seven, eight, nine, and others at ten years of age.

If you are furnished with the number of persons employed in a given number of manufactories, can you make any estimate of the number likely to be under ten years of age?—It depends upon the circumstances under which each mill is placed.

There is no mode of making an estimate?—None, whatever, that I know of.

Have you made particular enquiries as to the general state of the health of children that are employed in manufactories?—I have not made any official investigation into the state of the health of children employed in the manufactories, but I have observed them, and I have frequently communicated with a great variety of individuals, who pass through the manufacturing districts as strangers making their observations upon every thing they see, and they almost all uniformly declare the wretched state in which they discovered the children employed in manufactories.

Has it never occurred to you to obtain any account of the register of deaths and burials in the manufacturing districts?—No.

Was not such information necessary to enable you to pronounce that injury was sustained by children working in manufactories?—Not at all.

If it should appear, upon a return of the deaths of children from seven to ten years old in the manufacturing districts, that they did not exceed those in other districts where there were no manufactories, would you not conceive that to be a strong proof that no injury was sustained?—None at all; I know the fallacy of all those statements.

Then the actual state of deaths and burials is no criterion of the health of the inhabitants?—No; because the manufacturing population, in many districts, is perpetually removing; when they find their health affected by any manufactory, they go elsewhere.

397.

Z

They

33 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

They do not let them die in the mill?—Nor often in the town or parish in which it is; I never heard of a death in a mill in my life.

You have stated, that children of four years old are employed; will you please to specify where such children are employed?—Such children have been employed in Stockport; on Sunday fortnight I went to the Sunday school in Stockport, for the purpose of obtaining information upon a variety of points; I was introduced to the treasurer, to the secretary, and to another respectable gentleman, whose name I have not now in my memory; I asked them what was the earliest age at which they knew children to be employed in the manufactories at Stockport; the treasurer informed me that he knew a child (a boy) whose name he has given me, was employed at the age of four; the secretary immediately replied, "I know one child, a girl, who was employed at the age of three;" and that it was a very common practice to employ children at the ages of five or six; the treasurer's name is Turner, and the secretary's, George Oughton.

In what did you understand this infant of three years old to be employed?—In a cotton mill.

You never heard of one of two years?—I was only one hour in Stockport; if I had made particular enquiries for a day or two days, I do not know what I might have discovered.

In what possible way do you believe a child of that age could be employed?—Not in any way to advantage.

Do you really believe such a child could be employed?—I confess, although I have known for so many years the miseries the children have suffered in many manufactories, I was astonished at this last fact.

You are requested to state, whether you really think any such child could be employed?—I believe what was told me by Mr. Turner, whose word I have every reason to believe may be relied upon.

Do you really conceive that a child of three years could be employed in any branch of the spinning business?—It is possible, and very probable, and the way in which many of these infants are first employed is to pick up the waste cotton from the floor; to go under the machines, where bigger people cannot creep, and the smaller they are the more conveniently they can go under the machines.

What other children do you know employed under the age of five years old?—I enquired of several individuals, and they informed me that children were very commonly employed at five and six years of age.

Do you not know that there is a fashion of listening very often to what they call hoax people?—If you went into a mill, knowing you were unacquainted with the matter, individuals might wish to hoax you; but those individuals knew that I was acquainted with all the details, and I think they would not attempt to hoax me upon such a subject.

Did you ever in any instance see or hear of any other case of a child of that age being employed?—I have seen very young children employed frequently; I cannot say what their ages were, but they appeared very young, and very unfit for the situation.

Did you ever hear of any children being actually engaged to pick up cotton in cotton mills, and being paid for such employment?—Yes, frequently; I have employed them myself, and do so now.

At what age?—At the ages of six, seven and eight formerly, now at ten to twelve.

What wages do you suppose a child of three years old got?—The case stated is a very extraordinary case, but the gentleman who related it to me can, I doubt not, state all the particulars.

Have you the means of knowing the child's age?—Only from the testimony of the treasurer of the Stockport Sunday school.

Mr. Robert Owen, again called in, and Examined.

HAVE you any thing to add to your evidence of yesterday?—Some questions were put to me yesterday respecting the early age at which children are employed at Stockport; I knew I had made a memorandum at the time, but I could not then put my hand upon it; I have since found it; and I can now reply to the questions regarding those cases. Mr. George Oughton, secretary to the Sunday school in Stockport, informed me about a fortnight ago, in the presence of an individual, who will probably be here in the course of the morning, that he knows a little girl of the name of Hannah Downham, who was employed in a mill at Stockport at the age of four. Mr. Turner, treasurer to the Sunday school, knows a boy that was employed in a Mill at Stockport, when he was only three years old. Mr. Turner and Mr. Oughton if they were sent for would, I have no doubt, state these cases before the Committee.

They were mentioned to you as a rare instance?—They were mentioned to me in the midst of a very numerous assembly of very respectable people; I inquired of them whether they knew, as they were surrounded with I believe two or three thousand children at the time, what was the age at which children were generally admitted into cotton mills; their answer was, Some at five, many at six, and a great number at seven. I have also received very important information from a very respectable individual at Manchester, relative to the age at which children are employed, the hours they are kept to work, and a variety of other particulars from very authentic sources.

Name those sources?—Mr. Nathaniel Gould and Mr. George Gould.

Does the information you propose to give come from the manufactory to which it relates?—No manufacturer would give information against himself.

State what you know relative to the number of hours which children and others are employed in their attendance on mills and manufactories?—About a fortnight ago I was in Leeds; and in conversation with Mr. Gott, whose name is well known to many gentlemen in this room, he stated to me that it was a common practice, when the woollen trade was going on well, to work sixteen hours in the day: I was also informed by Mr. Marshall, who is another principal, and considered a highly respectable manufacturer in Leeds, that it was a common practice to work at flax-mills there sixteen hours a day whenever the trade went well: I was also informed by Mr. Gott, that when the Bill, generally known by the name of Sir Robert Peel's Bill, was brought in last session of Parliament, the night-work at Leeds was put an end to. In Stockport, on Sunday fortnight, I saw a number of small children going to the church; they appeared to me to be going from a Sunday school; the master was with them; I stopped the master, and asked him what he knew of the circumstances of the manufacturers in Stockport; he said he knew a great deal, because he himself had formerly, for many years, been a spinner in those mills; his name is Robert Mayor, of the National School in Stockport; he stated that he was willing to make oath that mills in Stockport, within the last twelve months, had been worked from three and four o'clock in the morning until nine at night, that he himself has frequently worked those hours.

Are there any young children employed in those manufactories those hours?—I conclude so, because children are employed in all cotton factories. Mr. Mayor was going to church with those children, and these questions were all I had time to ask him, without detaining him too long for the service he was going to attend.

Did Mr. Mayor give the names of the proprietors of those mills?—Mr. Mayor did not give me the names of the proprietors of those mills to which he referred in Stockport.

You

You have stated that Mr. Marshall, who is a very principal manufacturer at Leeds, and a spinner of flax, told you about a fortnight ago, that his children worked sixteen hours a day?—When the trade went well.

Did you make memorandums of what these gentlemen said to you at the time when you speak of having a conversation with him?—I did not make any memorandums at the time; the facts were too striking upon my memory to need any; but I had a person present with me at the time I put these questions.

It appears by a letter from Mr. Marshall, that the hours of working are from six in the morning till seven at night, allowing one hour for meal times, making twelve working hours; he further states, that during the summer of 1814 and 1815 they worked fourteen hours per day for some months; are you perfectly sure the answer which Mr. Marshall gave to you was, that the children worked any longer than the hours that have been mentioned?—I believe I am perfectly correct, because some argument, a good deal of argument, took place upon those hours, Mr. Marshall contending that it would injure the trade of his house and others materially, if he was restrained from working those hours, or if he was prevented from employing children at the age of six or seven. The argument continued nearly an hour.

When you said sixteen hours, did you mean inclusive of meal-time?—I conceive it must include three quarters of an hour for dinner, which was the time allowed.

And the time for breakfast?—They take that at their work.

You have stated, that Mr. Gott, of Leeds, told you, that when trade went well it was a common practice to employ the children and the persons in their mills sixteen hours a day?—He stated that the hours of work, in and about Leeds, were sixteen in the day, when there was a great demand for their manufacture.

Then the Committee are to understand from you, that if trade were to go well six months together, it would be the practice of Mr. Gott and others to employ the people in their manufactories sixteen hours a day?—I understand it to be a common practice to do so.

You say you have tried the experiment, since the first of January, of only ten hours and three quarters per day; what was the result of that experiment?—The result of the experiment, with regard to the persons employed has been most favourable in every way; the result to the proprietors is much less unfavourable, under the most unfavourable circumstances which it could be tried, than could be supposed. The difference between our former time of working and the present, is an hour per day; for many years previous to the first of January last, the hours of work at New Lanark were eleven and three quarters per day, exclusive of the time allowed for meals; since the first of January last the hours of work have been ten and three quarters; and I find by actual practice, made from very accurate calculation, that the difference to the proprietors, taking every circumstance in the most unfavourable way in which they can be taken, will not be more than one farthing per yard upon the goods manufactured from the yarn spun at that manufactory; and I have every reason to believe, from the progressive increase in the quantity which has taken place regularly every month since this change took place, that before the end of the year the yarn will be manufactured as cheap, working ten hours and three quarters per day, as ever we manufactured it, working eleven hours and three quarters per day. The present loss is not more than one farthing in twenty-pence. Nay, so convinced am I, from the very accurate calculations that have been made upon the subject, and viewing the consequences in the most extensive manner, which with all my experience I could view them, I do not hesitate now to say, that although no bill should be passed, although no restrictions should take place with regard to hours, or the limitation of the children being admitted into the works, in a pecuniary view only, I would not again alter the hours of the New Lanark establishment.

What are the effects which have been produced by this alteration in your hours of work?—A complete change in the whole circumstances of the population employed in the manufactory. I beg leave to give, in evidence, the morning, forenoon, and evening attendance at schools of the children either too young for work, or of those who are employed during the day in the manufactory, since this alteration took place; and upon inquiry why so many more attended, after this change, the parties attending assured me they were so fatigued, so exhausted and

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 91

and overcome by their former exertions, that they could not with any pleasure or advantage come to school, when the hours of work were longer than those now adopted.

[It was delivered in, and read, as follows:]

REPORT of School Attendance, January 1816.

1816. Date.	Morning.		Total.	Forenoon.		Total.	Afternoon.		Total.	Evening.		Total.
	Boys.	Girls.		Boys.	Girls.		Boys.	Girls.		Boys.	Girls.	
January 1.	-	-	-	125	112	237	-	-	-	-	-	-
2.	94	48	142	124	89	213	117	73	190	148	218	366
3.	121	47	168	119	94	213	103	84	187	143	234	377
4.	74	46	120	106	114	220	100	86	186	156	251	407
5.	89	49	138	117	104	221	99	89	188	173	311	484
6.	96	46	142	125	102	227	114	89	203	121	241	362
7.	-	-	-	-	-	-	-	-	-	-	-	-
8.	84	49	133	104	96	200	114	86	187	145	219	364
9.	73	51	124	118	98	216	104	94	200	124	224	348
10.	73	54	127	121	97	218	117	93	198	126	217	343
11.	84	43	127	123	94	217	116	91	210	121	218	339
12.	92	46	138	117	89	206	103	97	207	131	225	356
13.	79	43	122	112	84	196	-	-	-	-	-	-
14.	-	-	-	-	-	-	-	-	-	151	271	322
15.	74	42	116	127	95	222	121	94	219	148	236	384
16.	86	46	132	130	96	226	120	73	215	121	231	352
17.	73	48	121	112	98	210	122	91	193	104	212	316
18.	94	36	130	116	93	209	113	78	213	96	171	267
19.	89	39	128	118	104	222	117	79	191	134	214	348
20.	99	43	142	117	93	210	-	-	-	-	-	-
21.	-	-	-	-	-	-	-	-	-	154	300	454
22.	96	44	140	124	99	223	117	81	192	121	213	334
23.	101	45	146	113	124	237	116	83	198	132	217	349
24.	95	47	142	122	97	219	113	74	199	146	215	361
25.	97	49	146	118	98	216	117	89	187	132	218	350
26.	99	51	150	117	104	221	123	87	206	117	227	344
27.	46	63	109	130	105	235	-	-	-	-	-	-
28.	-	-	-	-	-	-	-	-	-	156	289	445
29.	84	52	136	121	92	213	111	89	202	200	276	478
30.	96	58	154	124	96	220	117	94	205	165	251	416
31.	96	58	154	124	89	213	114	89	213	148	254	402
Total -	2,302	1,228	3,530	3,224	2,656	5,880	2,608	1,883	4,491	3,613	6,153	9,766
Average -	92	49	141	129	98	227	113	82	195	143	237	380
Average per Day and Night -	-	-	-	-	-	-	-	-	-	-	-	607

REPORT of School Attendance, February 1816.

February 1.	94	50	144	114	92	206	98	91	187	142	234	376
— 2.	99	51	150	132	103	235	102	98	200	149	236	385
— 3.	103	47	148	128	103	231	—	—	—	—	—	—
— 4.	—	—	—	—	—	—	—	—	—	143	228	371
— 5.	103	48	150	132	104	236	103	97	200	156	240	396
— 6.	102	51	153	127	103	230	114	95	209	159	231	390
— 7.	98	54	152	123	95	218	115	99	214	144	230	374
— 8.	89	48	137	117	96	213	117	98	215	151	221	372
— 9.	94	51	145	114	93	207	107	86	193	148	251	399
— 10.	103	53	156	129	84	223	—	—	—	—	—	—
— 11.	—	—	—	—	—	—	—	—	—	158	231	389
— 12.	100	52	152	130	98	228	109	74	183	156	242	398
— 13.	91	45	136	130	102	232	103	89	192	144	249	393
— 14.	97	48	145	129	102	231	104	91	195	145	250	395
— 15.	103	52	155	129	103	232	101	96	197	148	243	391
— 16.	92	42	136	93	78	170	98	99	197	141	213	354
— 17.	89	43	132	109	84	193	—	—	—	—	—	—
— 18.	—	—	—	—	—	—	—	—	—	130	226	356
— 19.	96	48	144	121	98	219	112	94	206	157	245	402
— 20.	101	36	137	118	96	214	113	101	214	145	244	389
— 21.	89	42	131	112	97	209	114	97	117	142	244	386
— 22.	87	39	126	112	100	212	124	91	215	134	220	354

397.

A a

(continued.)

92 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

Report of School Attendance, February 1816—continued.

1816. Date.	Morning.		Total.	Forenoon.		Total.	Afternoon.		Total.	Evening.		Total.
	Boys.	Girls.		Boys.	Girls.		Boys.	Girls.		Boys.	Girls.	
February 23.	96	41	137	119	97	216	119	94	213	142	175	317
— 24.	86	34	120	121	103	224	—	—	—	—	—	—
— 25.	—	—	—	—	—	—	—	—	—	154	287	441
— 26.	86	34	120	126	102	228	119	91	210	148	243	391
— 27.	103	72	175	123	99	222	117	98	215	138	249	387
— 28.	98	71	169	127	105	232	108	90	198	153	250	403
— 29.	102	54	156	112	104	216	107	94	201	151	243	404
Total -	2,399	1,206	3,605	3,026	2,441	5,467	2,302	1,963	4,265	3,688	5,925	9,613
Average -	91	48	144	122	97	218	96	78	174	147	238	386
Average per Day and Night -	—	—	—	—	—	—	—	—	—	—	—	604

REPORT of School Attendance, March 1816.

March	1.	74	51	125	124	94	218	115	89	204	147	218	365
—	2.	93	54	147	117	92	209	—	—	—	—	—	—
—	3.	—	—	—	—	—	—	—	—	—	153	131	384
—	4.	84	56	140	119	94	213	102	84	186	146	217	363
—	5.	79	61	140	121	86	207	114	89	203	151	131	382
—	6.	86	63	149	111	89	200	112	87	199	142	241	383
—	7.	91	67	158	101	93	194	108	85	193	144	239	383
—	8.	94	48	142	114	97	211	102	92	194	139	251	390
—	9.	91	60	151	131	95	226	—	—	—	—	—	—
—	10.	—	—	—	117	64	181	—	—	—	142	225	367
—	11.	78	53	131	121	94	217	112	89	201	146	236	372
—	12.	73	57	130	118	98	216	111	87	198	153	237	390
—	13.	84	53	137	109	92	201	101	91	192	164	235	399
—	14.	79	48	127	122	94	216	104	94	198	142	254	396
—	15.	89	49	138	114	93	207	115	91	206	154	246	400
—	16.	65	54	119	117	91	208	—	—	—	—	—	—
—	17.	—	—	—	86	84	170	91	85	176	126	216	342
—	18.	74	49	121	118	96	214	96	87	183	142	240	382
—	19.	72	48	120	116	98	214	87	81	168	147	245	392
—	20.	89	55	144	115	92	207	65	53	118	145	251	396
—	21.	84	51	135	118	96	214	94	74	168	157	234	391
—	22.	79	48	127	117	92	209	102	86	188	136	152	288
—	23.	77	47	124	112	95	217	—	—	—	—	—	—
—	24.	—	—	—	87	72	159	100	91	191	112	148	260
—	25.	86	58	144	121	103	224	101	101	202	158	233	391
—	26.	94	49	143	123	98	221	119	84	203	150	235	385
—	27.	95	53	158	122	99	221	117	95	212	148	230	378
—	28.	90	48	138	123	101	234	115	92	207	151	235	386
—	29.	92	53	145	122	96	218	118	96	214	146	234	380
—	30.	97	54	151	123	95	218	—	—	—	—	—	—
—	31.	—	—	—	90	75	165	93	83	176	95	169	264
Total	—	2,189	1,587	3,576	3,449	2,840	6,289	2,494	2,386	4,580	3,736	5,883	9,619
Average	—	87	56	143	137	113	250	96	95	191	149	235	396
Average per Day and Night.	—	—	—	—	—	—	—	—	—	—	—	—	646

REPORT of School Attendance, from 1st to 14th April 1816.

April	1.	74	51	125	109	92	201	106	89	195	149	237	386
—	2.	94	57	151	118	94	212	103	98	201	144	234	378
—	3.	96	58	154	117	93	210	111	81	192	144	237	381
—	4.	108	68	176	114	91	215	113	76	189	142	234	376
—	5.	98	64	162	115	93	208	112	79	191	145	239	384
—	6.	94	58	152	118	94	212	—	—	—	—	—	—
—	7.	—	—	—	90	96	196	96	114	210	143	218	361
—	8.	91	57	148	112	89	201	98	73	171	145	234	389
—	9.	93	48	141	117	91	208	99	75	174	147	227	374
—	10.	89	51	140	113	87	200	102	72	174	139	223	362
—	11.	96	54	150	117	89	206	113	71	184	144	244	388
—	12.	98	53	151	118	87	205	114	73	187	143	214	357
—	13.	89	54	143	113	85	198	—	—	—	—	—	—
—	14.	—	—	—	96	90	186	96	108	204	122	172	294

—And up to the present day the attendance has been increasing.

If it should be inquired what other facts have taken place since I left the establishment, I would mention, that those operatives who would suffer by the alteration, in consequence of their being paid by the piece, in lieu of being paid by the day, have stated very distinctly their feelings, and their ideas with regard to this alteration; and I have not heard one single complaint from any individual, that they have suffered in any way in consequence of the reduction of the time.

You have expressed your opinion, that before the end of the year the loss of a farthing in twenty-pence, which you mentioned as accruing from the alteration in the hours of work, would vanish; from what did you form that opinion?—On the increased strength and activity, and improved spirits, of the individuals, in consequence of being employed a shorter time in the day.

Have you found that cause already operate in lessening the loss which at first happened from the change of hours?—Regularly every month, from the first of January last.

Is the principal part of your machinery what is usually called water or throstle spinning?—It is principally that kind of machinery from which the proprietor will suffer most by a change of hours.

Is the principal part of your machinery what is usually called water or throstle spinning?—It is principally what is called water or throstle spinning.

Is that species of machinery impelled by the power of water, or a steam engine, and not at all affected by the operation of the individuals employed?—I consider, that when the children who attend this kind of machinery are in good health and spirits, the machinery may be quickened so as to produce a proportion more; I do not mean to say it will produce full as much in the one case as in the other.

Do you mean to state to the Committee, that the managers in the works at Lanark attend to the good spirits of the children, and not to the machinery itself?—I mean distinctly to say, that not a single order has been given to the managers, who have the direction of the speed of the work, since the first of January last; they have proceeded precisely upon the same general principles that they did before, to move those machines with as much velocity as is consistent with the well manufacturing of the thread; and in doing so, I find the difference between the first three months of the last year, and the first three months of the present year, to be far less than I imagined before I tried the experiment.

Do not you conceive that the rapidity of the machinery must depend upon the quality of cotton used, more than upon the spirits of the people employed in the work?—I conceive it depends on a variety of circumstances; upon the goodness of the cotton, and of its preparation for spinning, on the machinery, the quickness of the hands, and upon their willingness and ability to perform their duty.

Then the Committee is not to understand that the increased quantity stated to have been produced, in proportion to the hours of working, is solely to be attributed to a diminution of the hours of work?—I believe, in the present instance, it is solely to be attributed to the difference in the hours of work, because I do not know that there has been the smallest alteration in any of the other circumstances; it is the same machinery, and, I believe, the same quality of raw material.

Is not the quality of cotton from America, usually consumed at that work, uncommonly better than usual this season?—I have no reason to believe it is better than it was last season.

Is the Committee to understand, that since the first of January the machinery has been quickened?—I really do not know whether it has been quickened or not.

If it has not been quickened, how is it possible to state that a larger proportionable quantity has been produced?—A larger quantity may be produced by a greater attention of the hands while the machinery is at work, in preventing breakage, and by not losing any time in commencing in the morning, at meals, or when stopping at night; from the greater desire of the individuals to perform their

94 MINUTES OF EVIDENCE BEFORE SELECT COMMITTEE ON

their duty conscientiously; from the great wish to make up for any supposed or probable loss that the proprietors might sustain in consequence of giving this amelioration to the work-people; such conduct to work-people is the most likely to make them conscientious, and to obtain more from them than when they are forced to do their duty.

Do you, as an experienced spinner, or a spinner of any kind, mean to inform the Committee, that the machines that you employ for throstle and water spinning can produce an additional quantity from any other cause whatever but the quickening of the motion of the machine?—Yes, as an experienced spinner, I do say that it may.

Have the goodness to state from what cause it can proceed?—From saving breakage, from the superior attention of the people to all their operations, from not losing a moment when the work commences, or when it ceases, and from the individuals in the previous process paying much more attention in the preparatory stages of the manufacture.

In these questions you will have the goodness to understand, that they relate to the employment of children eleven hours and three quarters, and ten hours and three quarters; and therefore no loss is supposed in such case to exist, as to the time of commencement, and the period of leaving work?—I believe it is generally known by those gentlemen who have been long engaged in manufactories, that the result is very different between the work produced by individuals conscientiously interested to perform their duty, and by those who have no extra motive to do so, and who are only guided by the common motives of common operatives.

Has it not always been the practice at your works, to make the machinery go as fast as possible, without considerable breakage of threads?—Yes.

If, therefore, the velocity of the machine has not been increased, how do you account for the produce per spindle being any thing different from the proportion that would arise from the difference of the hours of labour?—I have endeavoured to explain those causes which I conceive would produce a difference. In addition, I can merely state, that I have before me a comparative statement of produce and prime cost, simply asked for by me from the clerk, who has been long in the habit of giving me these calculations; and these are the results, without, I believe, the smallest difference in this statement from any other statement which I have received for the last fifteen or sixteen years. It is far from my wish to deceive the Committee in any respect; and none of these papers have been made for any particular purpose.

You have stated, that there is a daily return of the quantity produced?—I have not here a daily return, but I have a regular daily specific return for years past.

Have you observed any difference in one day from another?—The average of the weeks has been pretty much alike, only a gradual increase from the first of January to the present time.

With respect to Monday and Saturday, have you observed any difference?—From memory I cannot say that there is any difference whatever.

You cannot state that the refreshment of Sunday produces any effect?—That may be counteracted by the machinery not being in motion upon the Sunday, and of course it will be in better order for work on any other day than Monday.

You have stated, that you commenced your new system on the first of January last, and that since that time you have found, employing the same individuals, an increased quantity of work done, which you attribute to the moral feelings of gratitude, conscience, a sense of propriety and honesty; do you mean to state to the Committee, that the operation of those principles have so prevailed in consequence of the diminution of the hours of work, as to produce in children in that age those feelings upon which you state them to have acted?—The children form but a part of those who are engaged in the manufactory; the majority of those persons working in the new Lanark establishment are perhaps from fourteen to four-and-twenty: I do not mean to say that there was not a considerable degree of

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 95

of moral feeling in many of those individuals previous to the first of January; but I can state, and state most confidently, that that moral feeling has increased to a high degree since, and become more general.

Do you spin the same number thread now as you had done before?—It is very near; so near indeed, I do not know that there is any difference; but whatever difference there may be is taken into the account, otherwise the statement would have been fallacious.

By spinning the same number thread, do you mean that nearly about the same quantity of work has been turned out of the mill in the lesser number of hours as used to be turned out in the greater?—Not that the quantity is equal, but that the quantity is much more than would appear from the difference of time.

Is it, or is it not necessary, that the manual operations performed by the children, or whoever is employed to attend the machinery, should keep pace with the going of the mill?—Surely; I conceive that the question applies to both descriptions of machinery.

Have you both in your employment?—Yes.

State the difference?—I find that in the one which has been alluded to, and to which my evidence has hitherto gone, the deficiency of produce has been greater than in that upon which I have hitherto been asked no questions.

Have you made any alteration in your wages?—The wages are precisely the same as they were before the alteration of the time; I have stated formerly, in my evidence, that part of the people are paid by the day, but perhaps the greater part are paid by the quantity which they produce.

You have stated, that there are two descriptions of labourers in your factory; one description works by the day, and the other by the piece?—Yes.

Those that work by the piece, and are reduced in the number of hours, from eleven and three quarters to ten and three quarters, will be losers by the change?—They will sustain some diminution, but not a diminution equal to the time, because the produce has been increased beyond the difference of time.

Are those the persons who speak so highly of the alteration?—They are, precisely so.

Are spirits allowed to be sold at the establishment at Lanark, for the supply of the people with necessaries?—Yes.

You have stated, that there has been a gradual improvement in the morals and habits of the people there; do you know whether there has been any increase in the sale of spirituous liquors?—Not expecting to be asked that question, I really cannot say, without particular inquiry.

Would you conceive an increased consumption of whiskey consistent with the improvement of the morals of the people?—It would depend upon a variety of circumstances; if a number of individuals were not in the habit of procuring any before, excepting a small quantity, that might increase the amount of sale, and yet no individual be the worse for it.

Then the Committee are to understand that, in your judgment, a material increase in the consumption of whiskey might consist with a great improvement of the morals of the people?—No.

STATE OF CHILDREN EMPLOYED IN MANUFACTORIES. 113

Mr. Robert Owen, again called in, and Examined.

ARE you prepared to state the number of children between five and ten years of age, that are employed in the Cotton manufactories of Great Britain and Scotland?—I have the means of giving the exact number of children belonging to the persons employed in the mills at Lanark, between the age of five and ten, and who, if we received children between those ages, would be employed in those works; but as we have not employed them for many years, they go to school instead of going to work.

What is the nature of the information you are about to state?—To give the number of children from the age of five to ten, out of a given manufacturing population; at Lanark there is a population of 2,296 persons, and out of that number there are 266 children from five to nine years of age; which gives a fair data to estimate the whole number in any other manufacturing district.

Can you say how many children you have employed under five?—I have not one employed under five; I have not one under ten.

You have given some account, in your previous examination, of having visited the manufactory of Mr. Sidgwick at Skipton; have not you stated, that a number of apprentices have been discharged from Mr. Sidgwick's works, in consequence of Sir Robert Peel's bill last session?—Not apprentices but free labourers, so I was informed by the nephew of Mr. Sidgwick, who has the immediate direction of Mr. Sidgwick's mill.

Then you say you had information from the nephew of Mr. Sidgwick, that that had been the case?—Yes; that the children were by some means withdrawn from the factory.

Are you confident that any such information was ever communicated to you?—I am quite confident I had the purport of that information nearly in the terms I have stated, from young Mr. Sidgwick, whom, from the landlord of the inn where I was, I understood to be Mr. Sidgwick's nephew; and I understood from Mr. Sidgwick, that his uncle was on the Continent.

Recollect yourself, whether Mr. Sidgwick did not positively tell you they had but one child of ten years old employed in their works?—Yes; and because that last year, when Sir Robert Peele's bill was brought into the House, they discharged from their works, or permitted to go, all those who were under ten years of age.

He told you so?—He told me so.

Partie 2 - **Annexes au chapitre 3**

Annexe 4 - Lettre d'un instituteur de New Lanark adressée à MacNab et citée par lui (1819/1821, pp. 210 à 212) sur les pratiques journalières à New Lanark. (traduit de l'Anglais par Laffon de Ladébat)

« La description suivante, de l'ordre journalier du collège d'instruction et de discipline de New Lanark, m'a été communiquée par le premier instituteur qui y est employé. Je préfère de l'insérer ici mot à mot, telle que je l'ai reçue, m'étant convaincu depuis, moi-même, sur les lieux, de sa parfaite exactitude.

Pratique journalière dans l'Institution de New Lanark

25 septembre 1819

« Le centre du rez de chaussée est approprié aux exercices et aux amusemens des enfans de deux à quatre ans. Dans le beau temps, ils préfèrent généralement le grand enclos, en face de la maison, qui est entouré d'une muraille, et fermé pendant les heures de l'étude. Les enfans de cette classe, aussitôt qu'ils ont acquis l'habitude de parler, sont conduits, à tour de rôle, par troupes de dix ou de douze, dans la salle à gauche, où on leur enseigne les lettres de l'alphabet, les monosyllabes, etc. Ils y ont leur instituteur et trois femmes qui y assistent pour les élever dans les voies de la vertu, et pour veiller au développement régulier de leur enfance. »

« La salle à gauche est occupée par les enfans de quatre à six ans. On leur enseigne à lire des leçons courtes et faciles, adaptées à leur capacité ; il leur est permis de s'amuser et de prendre alternativement des leçons pendant la journée. »

« La salle de droite est destinée aux enfans de six à huit ans. Ceux-ci commencent leur journée par l'arithmétique. On y occupe les filles à tracer des chiffres sur leurs ardoises, ou à faire de simples additions ; en même temps les garçons, classés séparément, apprennent l'arithmétique sous la direction de leur maîtres.

Lorsque les enfans ont été employés ainsi pendant trois quarts d'heure, on appelle les filles à leur tour ; et les garçons vont s'asseoir, et s'occuper comme les filles s'occupaient auparavant. Tous sont exercés, le matin, dans la lecture, l'écriture et l'orthographe, et de la même manière l'après-midi. Ils se rendent successivement chez les maîtres de danse et de chant. Ils forment la seconde classe. »

« La grande salle ou chapelle sert, à la fois, pour les exercices religieux, pour lieu principal d'instruction, et pour salle de concert. C'est là qu'on enseigne aux enfans de huit à dix ans, la géographie élémentaire, la grammaire anglaise, l'arithmétique, la danse, le chant, la musique instrumentale et vocale, en variant leurs études plusieurs fois dans la journée ; ils sont censés avoir acquis ici les rudimens de l'éducation à l'âge de dix ans, et ils vont alors travailler dans la manufacture de coton. Ceux d'entre eux qui témoignent l'envie de poursuivre leur éducation dans les branches d'instruction

plus élevées, et qui sont employés dans les filatures pendant la journée, ont des maîtres qui ouvrent la classe à sept heures du soir, pour compléter l'éducation de cette heureuse jeunesse. Le temps de l'instruction et de la discipline est de six heures par jour, dont une petite portion est employée aux exercices militaires ; tels qu'à se placer en ligne, tourner à droite, à gauche, etc., à la marche, au son du fifre pour les enfans mâles de l'école. Tous les vendredis sont destinés aux exercices religieux, et à l'enseignement du catéchisme, suivant les doctrines de la religion révélée. – On donne ordinairement un concert par semaine, auquel les parens des ouvriers et les habitans voisins du Vieux-Lanark sont admis. »

« La chapelle est ouverte les dimanches, pour l'instruction religieuse des enfans. La musique sacrée, la lecture, l'explication de l'Ecriture Sainte, et la prière, sont les devoirs importans qu'on y remplit régulièrement. » »

Annexe 5 – École lancastérienne d'Albany de Philip Hooker, 1815. Le sol en pente d'une salle de classe. *American Magazine*, 1816, d'après UPTON, D. (2004). Écoles lancastériennes, citoyenneté républicaine et imagination spatiale en Amérique au début du xixe siècle, in *Histoire de l'éducation*, n° 102, pp.87-108 de l'édition papier, consulté dans sa version électronique :

<http://histoire-education.revues.org/index702.html>



Annexe 6 – L'institution pour la formation du caractère et l'école de New Lanark, extraits du dossier de demande du classement du village par l'Unesco sur la liste du patrimoine mondial (2001) (pages 53 et 55)

Nomination of NEW LANARK for inclusion in the WORLD HERITAGE LIST

New Institution for the Formation of Character, 1809-16, listed category A

NMRS site: NS 84 SE 58.07 NGR NS 8808 4250

"A building 145' by 45' at present unoccupied, planned to admit of an extensive store cellar, a Public Kitchen, eating and exercise room, a School, Lecture Room and Church" (1813 sale of the mills). Delayed while Owen sought new partners sympathetic to his communitarian aims, it was finally opened on 1.1.1816 with Owen's lengthy "Address to the Inhabitants of New Lanark".

The new Articles of Partnership called for a school on Joseph Lancaster's principles. Robert Dale Owen's description of the school in 1824 actually fits that of the Institute: having at second floor a large apartment with galleries on three sides, and a smaller one with a single gallery, zoological and geographical charts, used also as a lecture and ballroom, and for dancing and singing lessons. The lower storey for infants was divided into three, and had (and has) hollow iron pillars for heated air that vent into the larger room above via perforated iron floor plates.

In 1903 it was the "Amusement Room: of a more modern character than the New House, occupied on basement floors as stores, on ground floor as a dining room and recreation room and on upper floors as a public hall and store".

More than any other building, this was the platform on which Owen built his reputation and subsequent influence. A central Roman Doric portico under a shallow pediment is the nearest concession to contemporary public building styles in the village.

One bay was lost when the Engine House, added 1881, crashed into the symmetry of the building in order to let the rope drives meet the existing power system at the junctions of Mills 3 and 4.

The 550 hp horizontal engine by J. Petrie of Rochdale, installed in 1882, worked only when water was low or frozen. It was still an essential part of the power system in 1939 but was later scrapped. A similar twin tandem compound engine of 1912 by the same makers has been transferred from Philiphaugh Mill, Selkirk, differing only in that the flywheel transmitted power by spur gearing rather than ropes and that the engine is smaller (giving 250 hp), allowing a walkway to wrap around the engine. The interior of the engine house was originally plastered. The sub station sits underneath, relocated here in 1987 from an obtrusive location.

Two bridges cross the lade here: a modern timber one and an earlier one, seen in 19th century photographs, made from T-section cast iron beams of the sort found in Mill 3.



The School, 1817, listed category A

NMRS site: NS 84 SE 58.05; NGR NS 8810 4243

The layout is symmetrical, with equal-sided classrooms, and the heating flues are lined in brick rather than within the solid-cored cruciform iron columns, so this building does not fit R. Dale Owen's description of the school. The Institute functioned interchangeably with the School. Both buildings were required for Owen's extensive education system that provided facilities for all age groups from babies to adults. A public kitchen was in the lower part.

"At New Lanark there is a day school, frequented by about 500 children, who receive instruction in the ordinary branches, more suitable to their rank of life than the ornamental accomplishments to which, under a former management, an exclusive attention had been paid". (NSA, 1835)

The school ceased to be run by the company in 1875 and was operated by Lanark School Board (set up by the Scotch Education Act, 1873) until the new primary school opened above New Lanark in 1884.

By 1903 this was the "New House: built originally for purposes of education and

recreation, occupied on the basement floor by filter and clear water tank and pump room in connection with the domestic water supply, on the ground floor recently as a net factory but now dismantled, and on the first floor as halls now unoccupied".

The warm air heating system is a particularly important aspect: the firebox is visible on the back of the building. Two square brick flues rose through the building, exhaling warmed air via letterbox sized slots. The system compares with the cockles invented by William Strutt for use in his Derbyshire mills, but given wider publicity once fitted to Derbyshire General Infirmary. Its suitability to institutions must have attracted Owen to the system. William Kelly's different patent external heating system used at New Lanark Mills is to be found in the Boulton and Watt Papers but physical evidence for the heating system in the mills is not as easily found as within the school.

The musicians', or visitors', galleries in delicate cast iron on clustered columns, are notable features looking into each room on level 3. The basement water cistern fed a reservoir on the hillside, the mill's sprinkler system and the village water supply.

Conversion back to use as an educational centre began in February 2000.



2006

200

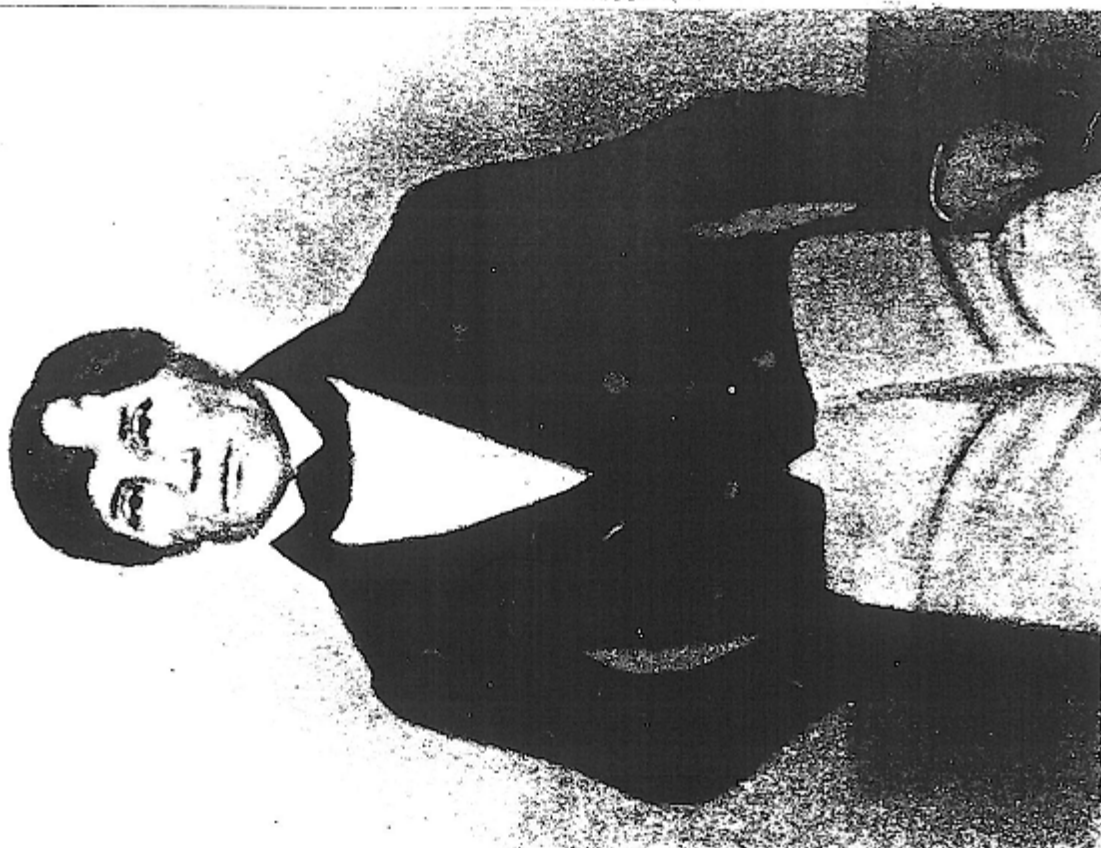
BUCHANAN FAMILY RECORDS.

JAMES BUCHANAN.

WRITTEN BY HIS GRANDDAUGHTER, BARBARA ISABELLA
BUCHANAN.

Though we have, unfortunately, no record of Grandpa's ancestry or of his life before his second marriage, yet we have sufficient information to enable us to draw some authentic conclusions. His parents died when he was young, most probably some years before he reached manhood's estate. That they were people of education and refinement is evident from his diary and letters, which prove that, despite the upheaval consequent on the long-protracted war, his education was considerably above the average for the times; and that he had always been accustomed to refinement and courtesy. We have not the name of his first wife, who left one child—Uncle William. To his second wife, Isabella Anderson, he was married in Edinburgh. They were living at Haddington in 1812 when my Father was born.

We have no intimation of Grandpa's occupation at this time. He served in the militia during the Napoleonic war, but, probably, only in Scotland. He moved to New Lanark in June, 1814. This move was very likely due to the great general depression following the war, and seems to have been made to obtain employment in the recently opened mills. The great Industrial Revolution had progressed so far that the antagonism to machinery was practically overcome, and the workers were beginning to regard the factory, resounding with whirling wheels, as a possible blessing.



rather than as an unmitigated evil. Mr. David Dale had erected mills on the bank of the Clyde, and his son-in-law, Robert Owen, had an interest in the mills. A number of women were employed, and Grandpa was greatly distressed, because their poor little children were left so many hours without care. Mr. Owen was anxious to retain the women's services, and saw that they would be more willing to remain in the factory if they knew some provision was made for their children; so he finally agreed to Grandpa's plan to devote himself to the children, and after a time gave for their use a large room in one of the factory buildings. Grandpa's diary says: "In June, 1814, I went to Lanark, being then thirty years. In November, 1815, I commenced my new era, and gave up the desire of becoming rich or great, content if my life would be useful." The one idea was to keep the children from harm, and in the beginning neither Mr. Owen nor Grandpa had any thought of a school. Years afterwards Mr. Owen seems to have claimed (or, perhaps, some one made the claim for him) that he originated the school and trained Grandpa, but he did neither. He simply supplied a bare room without even seats, much less toys, pictures, or anything else to occupy, instruct or amuse the children. An article published comparatively late in the *Westminster Review*, which I have not been able to obtain, gave, I believe, the credit of originating the Infant School system to Robert Owen, and even Miss Smith thought that he had trained Grandpa, but the family documents given by Father and Auntie, and the fact that Grandpa had absolutely no school apparatus or equipment (except such as he improvised) till after he went to London prove the contrary. Infant Schools had been in existence for a good many years before anyone attempted to wrest from Grandpa the credit of founding them. Further proof is the following excerpt from an old paper, of which, unfortunately, we have neither the name nor date, but which quotes as current news a letter dated 1830. The excerpt is evidently from a report on education.

"Secondly, Infant Schools. With respect to infant schools so much might be said with advantage that we regret to be confined to a very few words indeed on the subject. They are spreading rapidly in every quarter of the globe. They are the happiest means of withdrawing the

young from evil example, and from the bad language of the unfortunate convicts in New South Wales, where they were introduced seven years ago. In India and in Africa they are found most successful in anticipating the uncivilised habits of the tribes, to whom we have but too often imparted only the ills of worse than barbarian tyranny and degradation. In our own most crowded streets they offer asylums from filth and neglect, and present examples of all that is good and happy. Still, infant schools are almost languishing in England for want of public support and good visitation. There are, perhaps, 25,000 children in them instead of the 150,000 who ought to be there. In Westminster, for instance, the centre of public spirit, there are above 8,000 children from two to six years of age fit for infant schools. During twelve years also the richer people of Westminster have had before their eyes eminently successful examples of these schools, from their first establishment under Mr. Buchanan, their originator; . . . nevertheless about 1,000 children only are provided with this excellent corrective to vice. . . . There are now in England above 500 infant schools, the whole number wanted being about 6,000. . . . Most enviable will that member of a reformed parliament be who shall bring before the legislature the details proper to promote the establishment of institutions which, duly managed, will secure universal applause."

At New Lanark in the beginning Grandpa made the children march round the room to the strains of his flute. Then he marched them through the village, and allowed them to amuse themselves on the banks of the Clyde, and march back again. But this was not occupation enough, and was apt to be prevented by bad weather, so he had to invent indoor occupation or amusement for them. He began with simple gymnastic movements, arm exercises, clapping the hands, and counting the movements. *Viva voce* lessons followed, arithmetical tables, etc. Before long the children began their day with him by all standing, putting their little hands together, and, with closed eyes, repeating after him the Lord's Prayer, Watt's Divine and Moral Songs and similar simple hymns soon followed, and the children never tired of singing them to the accompaniment of his flute. He also gave the little people simple object lessons in which they did most of the talking, and learned to

observe and describe. He never grew up, but was always simple-hearted and natural as a child, and had a child's power to imagine and dramatise. This gift made him a delightful raconteur, who never failed to charm children. He loved to tell them Bible stories, which he filled with life and significance. In England Eben chanced to meet a man who had been one of Grandpa's pupils in London, and this man told how the children loved the story of Daniel in the lions' den, and how the space under "the gallery" was the den occupied by some of the older boys, who growled lustily, and how Grandpa would mount the gallery, and, leaning over the railing, call "Daniel, has God kept you safe?" and Daniel would reply, "O, King, live for ever." Daniel was always duly rescued, but the story ended there, for Grandpa did not approve of punishment, especially for children.

So Grandpa's system of education was the gradual outgrowth from his efforts to interest and help the little children whom he had taken in the first instance with the sole aim of keeping them from harm. It is worthy of remark that, while he was developing his system in Britain, Froebel was working in Thuringia along the same lines; and that, though they worked quite independently of each other and of him, they really used the basic principles which Pestalozzi formulated in Switzerland, and recorded in his book entitled "How Gertrude Teaches her Children," published in 1801. Possibly Froebel may have read Pestalozzi's book, but Grandpa certainly had not. In his day practically nothing was known in England of continental educational literature.

When Grandpa left New Lanark the school had existed so short a time, and had been so hampered by lack of equipment, that the children had hardly been fairly started, but in London he laid a good foundation for future progress. From the beginning he made abundant use of original rhymes to convey general information and moral principles. He also used liberally his flute, which he played well, though entirely by ear. The rhymes he often set to popular airs, and I have no doubt that occasionally he strung together a few original bars, as, for instance, the following, for transferring the children from one occupation to another:



in our places.

Among his rhymes are the following:

Twice one are 2, thumbs up to view,
2 4 fingers on the floor,
3 6 fingers playing tricks,
4 8 count them now they're straight,
5 10 all hands up again.
Appropriate action accompanied all such rhymes.

Three little words we often see

Are articles—*a, an, and the*;

A noun is the name of anything,

As *school, or garden, hoop or swing*;

Adjectives tell the kind of noun,

As *great, small, pretty, white, or brown*;

Instead of nouns the pronoun stands—

John's face, his head, my arm, your hands;

Verbs tell of something being done—

To *read, write, count, sing, jump, or run*;

How things are done the adverbs tell,

As *slowly, quickly, ill or well*;

The prepositions stand before

A noun, as *in or through* a door;

Conjunctions join the nouns together,

As *men and children, wind or weather*;

An interjection shows surprise,

As *Oh, how pretty! Ah, how wise!*

The whole are called nine parts of speech,

Which reading, writing, speaking teach.

THE COW.

Come, children, listen to me now,
 And you shall hear about the cow.
 You'll find her useful, live or dead,
 Whether she's black, or white, or red.
 When milkmaids milk her morn or night,
 She gives us milk so fresh and white,
 And this we little children think
 Is very nice for us to drink.
 The milk we skim and shake in churns,
 And then it soon to butter turns.
 The curdled milk we press and squeeze,
 And so we make it into cheese.
 The skin, with lime and bark together,
 The tanner tans and makes it leather,
 And without this what should we do
 For soles for every boot and shoe?
 This is not all, as you will see:
 Her flesh is food for you and me;
 Her feet provide us glue and oil;
 Her bones tend to improve the soil;
 And last of all, if taken with care,
 Her horns make combs to comb our hair.
 And so we learn, thanks to our teachers,
 That cows are very useful creatures.

Fishes swim in water clear,
 Birds fly up into the air,
 Worms and serpents crawl along,
 But children walk on feet so strong.

I love little pussy, her coat is so warm,
 And if I don't hurt her, she'll do me no harm;
 So I'll not pull her tail nor drive her away,
 But pussy and I very gently will play.
 She will sit by my side, and I'll give her some food,
 And she'll love me because I am gentle and good.

For every evil under the sun
 There is a remedy, or there is none.
 If there is one, try to find it;
 If there is none, never mind it.

This is only a sample of Grandpa's numerous poems
 (if we may so dignify them). One on the sheep began:

"Hark now to me and silence keep,
 And you will hear about the sheep;
 For sheep are useful, and you know
 That on their backs the wool does grow.
 The sheep are taken once a year,
 And plunged in water cool and clear;
 And there they swim and never bite
 While men do wash them clean and white."

Unfortunately he probably never even wrote his
 shorter poems, and though he may have written the longer
 ones, he never printed any. Consequently most of them
 are now wholly forgotten or remembered in part only, so
 are for ever lost. The authorship of

"If at first you don't succeed,
 Try, try, try, again,"

has recently been claimed by another, but I am pretty sure
 Grandpa wrote the poem. I know it was sung in Auntie's
 school (and I believe in his) to the tune of "Duncan
 Gray cam' here to woo." His rhymes were freely used by
 the teachers he trained, and some of them attempted original
 rhymes which were far from being an unqualified success.

Notwithstanding lack of equipment, within four short
 years Grandpa's work at New Lanark proved so successful
 that his little establishment took rank as a school and
 aroused considerable interest; so that visitors to the mills
 —themselves a novelty—were often brought to see this
 novelty. A party of these visitors consisting of Henry
 (afterwards Lord) Brougham, John Smith, M.P., the
 Marquis of Lansdowne, Zachariah Macaulay, and other
 men of note, were so pleased with the school that they
 determined to establish similar schools in England. They
 accordingly persuaded Mr. Owen to release Grandpa, and
 arranged for his removal to London. They formed a com-
 mittee, to which were added Thomas Babington, Lord
 Dacre, Sir Thomas Baring, William Leake, M.P., Henry
 Hare, Benjamin Smith, M.P., John Walker, and Joseph
 Wilson. In 1819 they established Grandpa in the premises
 23, Brewers' Green, Westminster, with a large brass plate
 on the door, inscribed "The Westminster Free Day Infant

Asylum." Before long the committee either lost interest in the school or allowed more personal affairs to crowd it out. Mr. Benjamin Smith then bought a site at Carey Street, Vincent Square, Westminster, and erected a double-storied building to accommodate the school and furnish a suitable dwelling for the teacher. Mr. Joseph Wilson (the only other member of the committee apparently still interested in the work) built a school in Quaker Street, Spitalfields.

The Carey Street school was fairly well furnished for the times. The walls were liberally adorned with pictures of animals and lesson cards, among them white cards with the geometric figures of bright-coloured paper pasted on them. A picture in an encyclopædia of an abacus attracted Grandpa's attention, and he immediately recognised the potential utility of this simple instrument. He accordingly had one made for his school with wooden balls fully an inch in diameter strung on stout wires. The abacus is now considered essential to the equipment of every kindergarten and primary school, and is found in many homes, but in my childhood ours was the only home in South Africa which could boast an abacus (counting-frame we called it), and the only other one in Maritzburg was the property of the Infant School.

Grandpa's school attracted a good many visitors. One of them, Samuel Wilderspin, seemed so interested that Grandpa offered to train him for a teacher. After a short period of training, Wilderspin was engaged as teacher of Mr. Wilson's school at Quaker Street. For a considerable time Grandpa, with Father as a model pupil, walked every morning the long distance to Spitalfields to open the school and start Wilderspin on the day's work. Grandpa did this gratuitously, and Wilderspin repaid the kindness by publishing some years later a book entitled "My Infant School System," and claiming the credit of being the originator of Infant Schools, and by attempting to divert to himself the pension which had been proposed for Grandpa. In October, 1848, Uncle David wrote to Grandpa: "A friend told me the other day that Lord Ashley had referred to the origination of the Infant School System as if Lord Brougham never set the matter in the proper light. I would give a trifle to have been there, and would have vindicated—not your right—but truth and justice. I scorn this pension. Let those who can sign a receipt for what they unjustly lay claim to take it and welcome. I hate the thought of

this whole matter. If the Infant School had done as little for me as it has done for Mr. Wilderspin, I should consider it as worth less than nothing." And again to Auntie, under date May, 1849: "You ask what I think ought to be done about Father's pension. I thought all hopes had vanished. Not that I ever hoped for anything, but Sir Henry Pottinger's bringing out those letters from the Secretary of State was calculated to lead to expectations. I have often wondered that Mr. Smith did not in some way interfere and set matters right. . . . For my own part, I am excessively exasperated about the success of Mr. Wilderspin's unjust pretensions, and would give a trifle to be in England at any one of the meetings where the thing might be so much as mentioned, though I hate the thought of scrambling for a pension." At last, in 1851, I suppose the truth regarding Wilderspin's claim was proven, for a "pension" (really only a bonus) of £100 was given to Grandpa in recognition of his great services to education.

Another pupil of Grandpa's was Thomas Bilby, who also published a book on the Infant School System. He taught for some years the Infant School at Brewers' Green, later a school at Chelsea, then went to a school in the West Indies.

Grandpa took it for granted that visitors to the school wanted to see the work that was being done, so he just went on as usual. One day all the children were seated in the semi-circular gallery at one end of the schoolroom, and Grandpa was standing in front of them giving them a lesson, when he found that a gentleman and two young ladies were beside him, and apparently much interested. He went on with his work, and the children sang some of their little songs, finishing with the National Anthem. The gentleman then volunteered to sing to the children, and sang the alphabet to the tune of the National Anthem. After expressing much pleasure and appreciation, the visitors left, and Grandpa discovered they were King William IV, his niece (then) Princess Victoria, and a Spanish Princess.

The opening of a school at Crich is told of elsewhere. In order to open another school in Derbyshire, Grandpa and Grandma spent a year at Florence Nightingale's home, Lea Hurst. Mr. Smith, who was Florence Nightingale's uncle, arranged this, and meantime lent the building in Carey Street to an "Infant School Society," who at the close of

the year refused to relinquish the building, and were evicted with difficulty.

After devoting almost a quarter of a century to the work he loved so well, Grandpa determined to go to New Zealand to start infant schools there. He set off alone in September, 1839. When he reached Cape Town, Uncle William persuaded him to stay there. This voyage was under the auspices of the "New Zealand Land Company," and the "Embarkation Order," which was endorsed, "Mr. Buchanan is Master of the Infant School. Please to pay him every attention," gives details which show something of the conditions under which people travelled in those days. "Each emigrant must be provided with bedding, and the necessary utensils required on board, such as a knife and fork, plate, spoon, drinking mug, etc.; the latter had better be of tin or pewter. The articles required in cooking will be supplied on board."

"Each adult emigrant will be allowed to carry out as much baggage as will measure 20 cubic feet, and not exceed half a ton in weight; and every one is strongly recommended to provide a large stock of plain, strong clothing, or the materials for clothing, in making up which the females may advantageously employ themselves on the passage. As no fresh water can be allowed for washing while on board, a considerable stock of clothing is essential to comfort."

"Each family should provide a linen bag, large enough to hold a month's supply of clothing. All other articles should be packed closely in boxes, just large enough to contain them."

"On arriving at the depot, the baggage of the emigrants will be inspected, to ascertain whether they have provided a sufficient stock of clothing and bedding, and the necessary tools of their respective trades, and unless an emigrant has proper clothes and tools, he will not be allowed to embark."

"During the passage you will be placed under the care of the Surgeon-Superintendent, to whose directions in all matters it is expected you will pay the readiest attention."

We must bear in mind that the term "emigrant" then applied to all persons of all classes who travelled to the colonies.

"The passengers to be in messes of six or more, as the Surgeon may determine"; and the dietary, while

probably as wholesome as circumstances permitted, was certainly of the plainest.

As soon as Grandpa was settled in Cape Town, Grandma and Auntie, who had always assisted him in the school, then gave up the school in Vincent Square and followed him. Grandma lived but a short time after reaching the Cape, and in 1856 Grandpa went on to Natal and spent the remainder of his life in our home in Maritzburg. When he found he liked Natal well enough to settle down there, Auntie joined him. On January 14th, 1857, Auntie, who had been visiting some of the city schools, described to him all she had seen, and he was keenly interested and greatly pleased. At the tea-table he was bright and cheery as usual; and after tea he went on to the verandah, as was his custom, to smoke his evening pipe. A little later he went up to his room and fell on the floor. Father heard the fall, and ran up at once and found Grandpa insensible. The doctor, summoned immediately, said at once that he could not rally. He did not regain consciousness, and passed away very quietly about six o'clock the next morning. All his faculties were unimpaired, and his sudden call was evidently attended by no suffering. In the words of the inscription on the simple monument to his memory: "His gentle and loving spirit passed without a pang into the presence of his Lord God and Saviour Jesus Christ." He was born in Edinburgh, March 10th, 1784, so died in his 75th year.

The following rhyme, scribbled by Grandpa in pencil, evidently offhand, is apparently intended for a whimsical description of himself:

Just to a scruple, honest and upright,
All own that in your actions you are right.
Much good you've done, for honesty's your rule:
Each man of sense will own your Infant School
Should teach a child to be through life no fool.
But though I own your purposes are good,
Upright your conduct, yet your thoughts are crude;
Crammed with false notions, shallow as an ass,
Hot in your temper, obstinate as brass.
And none can speak a word but you'll dispute,
Nor start a subject that you won't refute.
A lord or beggar—'tis the same to you.
Now say, is not this character most true?

Annexe 8 – Extrait de RUSK, Robert (1933). A History of Infant Education,
University of London Press (pp.140-141)

Est inclus l'article tiré de *The Westminster and Foreign Quarterly Review*, volume 46, octobre 1846 - janvier 1847, pp.220-222, qu'il attribue à Lord Henry Brougham.

INFANT EDUCATION

We have fortunately the evidence of one who was instrumental in bringing Buchanan to London, namely, Lord Brougham. An article on "Origin of Infant Schools" in *The Westminster and Foreign Quarterly Review*¹ for 1847, although anonymous, was unquestionably contributed by Brougham. In it he rightly assigns the origin of Infant Schools to J. F. Oberlin, and after mentioning his visit to New Lanark fifteen years after Owen had published his thoughts on education in 1812—he had not frequently visited New Lanark, as Owen asserts in his autobiography²—he presents the following account of the origin of the Infant School at New Lanark and the part played in it by Buchanan :

The method adopted for the younger children grew out of circumstances. There was, in the first instance, no especial intention of forming an infant school, but the youngest child able to walk was to be admitted, on the principle that education should begin from the cradle. That this part of the experiment did not utterly fail, as many similar attempts had failed, and end in the dismissal home to their mother of all the little children, may be attributed to the happy accident of a teacher having been found for this branch of the establishment with the patience, tact, and inventive faculties required for a novel position. James Buchanan succeeded in a task under which all common-place schoolmasters, wedded to old methods, would have broken down. He found out the art of winning infantile attention,—amused while he instructed his little classes with pictures and objects, instead of books, and made them happy. His success was complete, and the New Lanark children, in great part at least, through his exertions, became an object of attraction to tourists. Thousands visited the place for curiosity; amongst whom were some of influence and station, who became desirous

¹ Vol. XLVI, October 1846–January 1847, pp. 220–2.

² *Life: Written by Himself*, p. 196.

of seeing similar establishments in England. Henry Brougham, Lord Lansdowne, John Smith, James Mill, Mr. Wilson, and others, formed a Committee in 1818, for this object. They opened an asylum¹ for infancy in Brewer's Green, afterwards removed to Vincent Square, Westminster, and borrowed James Buchanan of Mr. Owen to conduct it.

Contesting Wilderspin's claim to be the founder of Infant Schools, Brougham concludes :

As a promoter of infant schools, and the agent of their promoters, Wilderspin has well earned the pension he receives. It was a mistake of the minister to call him the founder ; a mistake which Wilderspin should himself have hastened to correct. We do it for him, because the right man, as far as England is concerned, is not here to claim his right,² and because there is a quiet order of merit which wins our respect by not obtruding itself ; a quality in those who are only seen by the public when pushed forward by others, and it is one which belongs to James Buchanan.

Annexe 9 - Article sur James Buchanan et les Infant Schools paru dans The Westminster and Foreign Quarterly Review, volume 47, avril-juillet 1847, pp.484-486

Est incluse une lettre de William Buchanan, le fils de James, datée du 4 février 1847, concernant le rôle de son père dans la diffusion des Infant School.

THE
WESTMINSTER
AND
FOREIGN QUARTERLY
REVIEW.

APRIL, 1847—JULY, 1847.

"Legitima inquisitionis vera norma est, ut nihil veniat in practica, cuius non sit etiam doctrina aliqua et theoria."—BACON, *De Augm. Scient.*
"Those who have not thoroughly examined to the bottom all their own tenets, must confess they are unable to prescribe to others; and are unreasonable in imposing that as truth on other men's belief which they themselves have not searched into, nor weighed the arguments of probability on which they should receive or reject it."—LOCKE, *Essay on Human Understanding*.

VOL. XLVII.—1847.

LONDON:
GEORGE LUXFORD, 1, WHITEFRIARS' STREET.

MDCCCXLVII.

INTELLIGENCE AND CORRESPONDENCE.

Infant Schools.—Mr. James Buchanan.

It is highly satisfactory to us to note the facts, from time to time, which mark that a growing interest in the subject of education is beginning to pervade every department of government. Inquiries, it appears, have been instituted, through the Colonial Office, to discover the present abode of Mr. James Buchanan, the first teacher of Infant Schools in Great Britain, and their original *founder* in the proper sense of the term; inasmuch as it is not so much those who with philanthropic objects establish a school, as he who first introduces the plan which makes a school succeed, to whom the country is chiefly indebted for the gift of education. We have been favoured with a copy of the following letter, and we trust it may lead to some public acknowledgment of services which no amount of pecuniary recompense could adequately repay; that may solace an old age of modest and retiring merit.

Cape Town, February 4th, 1847.

SIR,—I have the honour to acknowledge the receipt of your letter, dated the 1st instant, informing me that a despatch had been received from the Right Honourable the Secretary of State, directing inquiries to be made whether Mr. James Buchanan is residing in this colony, and in what capacity; and requesting me, as the son of Mr. James Buchanan, to furnish whatever information I can on the subject with a view to its transmission to the Secretary of State.

In reply, I have the happiness of being able to state that my father, Mr. James Buchanan, is residing with my sister, Miss Anne Buchanan, teacher of the Infant School at Rondebosch, near Cape Town (of which institution you, sir, are President), by whom he is chiefly supported, his advancing age rendering him incapable of much continuous exertion.

I may be permitted to add, that my father arrived in this colony in the year 1839, on his way to New Zealand, whither he was proceeding with the view of establishing infant schools for the benefit of the settlers' and native children in connection with the New Zealand Company. This was after he had been occupied for a period of twenty-four years, uninterruptedly, in the work of infant education (about four years at Lanark, from 1815, and twenty years in Westminster, from 1819), during which time many thousands of young children had successively passed under his care and received the impress of an earnest and pious spirit; while a practical exemplification was thus constantly, for so long a time, furnished of the working of the infant system, whereby great numbers of teachers were made acquainted with it, and who afterwards, with more or less success, carried it into operation in different parts of the country. Delighting in the work of infant instruction for its own sake, and the system he had originated having spread and been adopted throughout the kingdom; he became impressed with a desire to extend its usefulness to the promising sphere, which, according to the accounts then published, appeared to be opening so favorably in the settlements projected by the New Zealand Company. Passing the Cape for this purpose, in December 1839, the vessel in which he sailed unexpectedly touched here, where my brother and myself were then engaged in teaching,—and here, at our solicitation, he providentially remained; we reimbursing the Company for the expense they had incurred on his account.

Since then, he has not been directly connected with any particular school,—but has found an agreeable exercise for his ruling affection, in instructing the children, and (coloured) servants of some Dutch families in the neighbourhood.

Trusting that these particulars, which are all capable of instant verification, may be satisfactory with regard to the object of the inquiry,—

I have &c.

(Signed.) WILLIAM BUCHANAN.

The Hon. J. Montagu, Esq. Secretary to Government.

We find the following remarks in the *Cape Town Journal* of January last (No. 308), upon the article we published on this subject in our number for October, 1846. After confirming our account of the origin of Infant Schools as an accurate statement, the Editor remarks :—

“ We think it not unfitting to state here (from personal knowledge), that the *first* Infant School in England was removed to a building erected for the purpose, in Vincent Square, and maintained, by the liberality of Benjamin Smith, Esq., M.P. for Norwich, after it had been three or four years in operation in Brewer's Green, supported by Lord Brougham, Lord Lansdowne, John Smith, James Mill, Joseph Wilson, and—let him not be forgotten—

Zachariah Macauley. It was in Brewer's Green that Mr. Wilderspin first became aware of the existence of such an institution; and it is a fact that he was introduced on the establishment of the *second* school in Spitalfields, as correctly stated by the Reviewer.”

We learn from a paragraph in another newspaper of the same colony, that the Editor of the *Cape Town Journal* is Mr. William Buchanan, the writer of the preceding letter; an authority unquestionable for the facts to which the letter and the extract refer.

“ In our observations upon the article on Infant Schools in the *Westminster and Foreign Quarterly Review* for October, 1846, which we had marked for notice, we have been a little anticipated by our contemporary of the *Cape Town Mail*, on whom falls all the merit and the honour—for we believe it is to the father of that individual that the subject chiefly applies. And thus it is that modest merit is often buried in obscurity, and thus do some run off with the prize which in all justice should be shared by others. No objection has been raised to the annuity or pension granted to Mr. Wilderspin,—who appears to have been worthy of his reward,—but he seems to have forgotten to render honour where honour was due, and to have lost sight of the *head* and *founder* of that system which brought him fame and comfort.

“ Were Mr. James Buchanan now in London, instead of being sepulchred in Grave-street, Cape Town, his high claim to public esteem might not go long unrewarded. Fame, with her trumpet tongue, would spread his deserts through the press; and although as ‘a Moravian or Swedenborgian Teacher’ he might not meet with much countenance or success in the neighbourhood of the Old Church Sanctuary, still, as an admirer of that angelic and intellectual spirit, whose *love* and *wisdom* are now shining through the *letter* of Scripture, (and whose theology and philosophy are spreading and enlightening in all directions), he would not be left solitary as a pelican of the wilderness, but have companions of his own sphere.”—*African Journal*, Jan. 21, 1847.

Annexe 10 – Lettre de Robert Owen au rédacteur en chef du Times en date du 12 novembre 1834 (Robert Owen Correspondence Collection, National Co-operative Archive, item n°714) et sa transcription

<p>714</p> <p>Robert Owen Esq Editor of the Times 12 Nov 1834</p> <p>X</p>	<p>714 R.O.</p> <p>Mr Owen presents his compliments to the Editor of the Times & begs to say that the Convention letter addressed to Mr O. in reply to the letter of the 13th which appeared in the Times of Monday, is now being forwarded for an early insertion & will be before the end of the week.</p>
<p>In addition he has been the pleasure in passing to the letter of the 13th of the Editor of the Times, & in now enclosing to him the proposed to the Editor of the Times, & has been in now enclosing to him the proposed to the Editor of the Times, & has been</p>	<p>only as he wishes to be put in the Times. The last night received a second letter from the Convention on the same subject in reply to a private letter from Mr O. sent with a copy of the present letter, but as it is private it does not appear to be in the is withheld from the Times, & the important documents which are to be to the Editor of the Times, & has been</p>

714.
 present personal communications
 after the last Charleston letter.
 especially new
 from him, on all measures, connected
 with a having reference to education.

And it is true & true that he is fully
 to state that he is indirectly & by
 own knowledge, with taking a more
 lively interest than he has, at
 that period, in promoting the
 in all ways & on all occasions,
 the education of the poor &
 virtuous slaves.

Love to
 you & -
 Not known

Nov 1823

The relation of the following might
 after the last Charleston letter.

Mr. Wilson
 than so much of the interest
 of the Lord's chosen one being
 relation to his are visiting him
 search until the present year
 school was opened. I understand
 letter to the Lord's Charleston
 states that he has visited to his
 work to think before seen, the
 first in 1822. The second with Dr
 Kansas in 1823. During
 publication on the subject of
 Appeal Schools was published & my
 visiting circulates between 1812 &
 1819 in the 2nd year - year then

Robert Owen to the Editor of the Times

12 nov. 1834

Mr Owen presents his compliments to the Editor of the Times.

H²&e encloses the Lord Chancellor's letter addressed to Mr O. in reply to the letter of Mr O. which appeared in the Times of Monday.

Mr O. hopes for an early insertion [?] as he wishes it to appear first in the Times.

Mr O. had [?] received a second letter from the Chancellor on the same subject in reply to a private letter from Mr O. sent with a copy of the [?] letter, but as it is private without permission toward [sic] it, it is withheld.

Mr Owen also requests an important [?] which can be [?] to the public. [?]the insertion of the following [?]after the Lord Chancellor's letter.

M. Editor

I have no doubt of the correctness of the Lord Chancellor's memory relation to his not visiting New Lanark until the Brewers Street School was opened. In a subsequent letter to me the Lord Chancellor states that his two visits to New Lanark to which [?] were, the first in 1822 & the second in the [?] in 1823.

But many publications on the subject of Infant Schools were published & very widely circulated between 1812 & 1819 & in all those years I had frequent personal communications with the ever action minded Henry Brougham, especially on all new measures connected with or having reference to education.

And it is [?] to him thus [?] to state that no individual, to my knowledge, could take a more lively interest than he did at that period, in all ways & on all occasions, the education of the poorest industrious classes.

I am

[?]

Robert Owen

12 nov. 1834

An addition has been made this morning by Mr Owen this morning to the letter sent by him last week to the Editor of the Times, it is now [?] forwarded [?] to the Editor who Mr O. requests to insert in the lines [?].

APPENDIX. A a.

TESTIMONY

Of Lord Brougham and Mr. Wilderspin as to the origin of Infant Schools.

ATTEMPTS having frequently been made to publish false statements respecting the origin of Infant Schools, it will be useful to preserve here the following testimony from two gentlemen, than whom none are better acquainted with the facts of the subject.

LORD BROUGHAM, in a speech which he made in the House of Lords on the 21st of May 1835, said:—

“ In this country, I think it is now seventeen years since, my noble friend Lord Lansdowne and I, with some others, began the first of these seminaries, borrowing the plan, as well as the teachers, from Mr. Owen’s manufactory at New Lanark.”

MR. WILDERSPIN in his work on infant education published by Simpkin and Marshall, 3rd edition, 1825, says, at page 8,—

“ it may be proper for me to show to whom the public are indebted for the establishment of the first Infant School. I do not know with whom the idea first originated, nor do I think it of much importance to know this ; the point is, who first brought it into action ? The first Infant School that we heard of in this country was established at Westminster in the year 1819 ; the master of that institution is J. Buchanan, who came from Mr. Owen’s establishment at New Lanark, where an Infant School had been previously formed by that gentleman.”

And again, at pages 233 and 234, he says,—

“ As far as I know, Mr. Owen is the first person with whom the idea originated of educating infant children upon an extensive scale. * * * * *

“ Having taken the liberty of mentioning the name of Mr. Owen, I take this opportunity of returning my sincere thanks to that gentleman for having visited the Spitalfields Infant School several times. He has been pleased to express his approbation of the system there pursued, and during these visits has given many useful hints, for which I beg most humbly to thank him ; and here I may observe, that I could not have brought the school to its present state had I not received some assistance.”

These quotations will be a sufficient reply to any mis-statements which may hereafter be made respecting the origin of Infant Schools in this country.

Annexe 12 – Allocution des habitants de New Lanark adressée à Robert Owen, signée le mardi 8 février 1820, prononcée le lundi 13 mars et publiée le samedi 18 mars dans le *Glasgow Courier*.

(From the GLASGOW COURIER, 18th March 1820.)

THE following address to ROBERT OWEN, Esq. from the Inhabitants of New Lanark, was presented to that Gentleman on Monday Evening last, at the New Institution, by a Committee appointed for the purpose. A considerable number of the Villagers were present on the occasion.

To ROBERT OWEN, ESQUIRE.

SIR,

A CONTINUATION of former privileges, and a recent instance of your unceasing attention to our well-being, afford us an opportunity of again presenting our grateful acknowledgements. These, Sir, we beg you will accept, not as the constrained suffrages of a people borne down by accumulated labour, and overawed by the authority of severe regulations, but as the unequivocal sentiments of our hearts, arising from a course of uninterrupted good treatment, and from contrasting our lot with the circumstances of the many thousands throughout the kingdom who are in abject misery, whose hearts are torn while their children look up to them for that sustenance which it is not in their power to give. While, then, Sir, we would sympathise with these, we are happy in offering to you our thanks, not merely for bread, but also for many superior advantages which we and our families continue to possess.

We have felt how conducive a reasonable period of labour is to the comfort of the poor man, and have proved, we trust, that a man, encouraged by the prospect of ending his day's work in ten and a half hours, will exert himself and do as much as when it is protracted considerably beyond that time.

Relieved also from much of that anxiety which a parent continually engaged in watching over a young family must naturally feel, we return you our grateful thanks for the establishment of an Infant School; and as you continue to give the education of our children in the more advanced classes so much of your attention, we are happy it has been demonstrated to us, that even in infancy they may be trained to regular habits, and that a child can hardly be too young to learn.

We would also advert to your goodness in retaining in employ all the people who were thrown idle by the late alarming fire, and also in paying them wages in full, since the accident took place, without receiving from their labour a return by any means adequate. Your kindness in these respects has exceeded their most sanguine expectations, neither do we know from what other quarter such things might have been expected in similar circumstances.

We beg, Sir, you will present to the absent Proprietors our renewed expressions of esteem for them, in their co-operation with you in forwarding whatever is for the good of their servants in this village.

We conclude, Sir, by cordially wishing that success may attend your intention of becoming a member of the ensuing Parliament, and that your disinterested exertions on behalf of the poorer orders may soon be rewarded, by seeing the practical adoption of those plans which you have devised for promoting their interest, by putting them in possession of privileges such as we hold.

Signed by request of a meeting of the inhabitants of New Lanark, held in the New Institution, 8th February 1820.

ALEX^r. INNES, *President.*
GEORGE L. MEUDELL, *Sec.*

Annexe 13 – APPENDICE de l'Esquisse du système d'éducation suivi dans les écoles de New Lanark, de Robert DALE OWEN

Traduit de l'anglais de M. Dale Owen par M. Desfontaines

Paris, Lugan, 1825

(132)

plissent ce devoir avec une étonnante facilité.

Une copie de cet Appendice a été faite par quelques-uns des écoliers ; en leur imposant ce travail, on s'est proposé de former leur écriture courante, et de graver plus sûrement dans leur esprit les connaissances sommaires qu'il renferme.

LA TERRE.

LA terre sur laquelle nous vivons est un globe immense à peu près rond. Les montagnes qu'on rencontre à sa surface, même les plus élevées, qui sont six ou sept fois plus hautes qu'aucune de celles de l'Angleterre, ne s'opposent pas plus à la rondeur de la terre, que les inégalités de l'écorce d'une orange ne s'opposent à la rondeur de ce fruit, parce que, comparativement à la

APPENDICE.

LES abrégés suivans, qu'on pourrait appeler *Introduction aux arts et aux sciences*, sont offerts pour expliquer quelle sorte de résumés nous recommandons de mettre entre les mains des enfans, avant d'entrer dans aucun détail. Ils ont été faits pour les écoles de New-Lanark, et ont été communiqués aux classes plus avancées. Les professeurs ont été invités à rendre chaque idée claire et intelligible, soit par des anecdotes, par des récits intéressans que leur esprit peut leur suggérer, soit par des dessins ou des modèles; on leur a surtout recommandé d'encourager les enfans à expliquer en langage familier, comment ils ont compris ce qu'ils ont entendu. En général, les élèves de New-Lanark rem-

(133)

grosseur de notre monde, les montagnes les plus élevées ne sont pas plus hautes que les aspérités de l'écorce de l'orange, comparées à l'orange elle-même. Voilà pourquoi si nous voulions représenter la terre aussi petite que le fruit dont nous venons de parler, les montagnes ne devraient même pas être si sensibles que les inégalités de la peau de l'orange.

La terre ne peut nous paraître ronde, parce que nous n'en voyons qu'une très-petite portion à la fois, et qu'une infiniment petite partie d'une immense circonférence, est trop semblable à une ligne droite pour que nous puissions y trouver quelque différence ; cependant nous savons que la terre est ronde, parce que si on voyageait pendant deux ou trois ans, marchant toujours dans la même direction, on reviendrait au lieu même d'où on serait parti : on aurait fait le tour du monde.

Nous ne pouvons savoir si la terre est un solide ou non, parce que nous n'en connaissons que l'extérieur et un peu de la

(134)

profondeur ; mais l'intérieur nous est inconnu.

Le monde est dans un mouvement continu de rotation ; mais nous ne pouvons l'apercevoir, parce qu'il nous entraîne et que nous tournons avec ce globe. Il en est de même d'un navire qui vogue sur une mer tranquille : nous sommes dans une chambre de vaisseau, et nous ne sentons point le mouvement que le vent lui donne ; il nous semble au contraire qu'il ne marche point.

La terre est éclairée par un globe plus lumineux qu'elle ne l'est ; c'est le soleil. Cet astre est fort éloigné de notre monde. S'il en était plus près, tout serait consumé. S'il ne lui communiquait pas la chaleur, rien ne pourrait vivre ni croître.

Une lumière quelconque ne peut éclairer qu'une portion d'un globe à la fois ; l'autre partie est dans l'obscurité. De même, le soleil n'éclaire qu'une partie du monde à la fois, et laisse l'autre dans les ténébres. Telle est la raison du jour et de la nuit. La

(135)

portion de terre que nous habitons est tournée vers le soleil pendant le jour, la nuit elle est tournée du côté opposé.

(Ici on peut donner la raison qui fait que les jours sont plus ou moins longs, et faire entendre pourquoi il fait chaud l'été et froid l'hiver.)

Si on voulait dessiner une boule, on ne pourrait jamais en peindre que la moitié; alors il faudrait retourner son papier pour dessiner la seconde moitié derrière la première; voilà pourquoi on représente la terre par deux hémisphères. Sur le papier, chaque hémisphère paraît plat, mais il représente réellement la moitié d'un globe. Toute carte, représentant une partie du monde que nous habitons, devrait, pour être parfaitement correcte, être en relief sur le papier.

Le monde, ou quelqu'une de ses parties, peut-être dessiné sur une carte grande ou petite; de la même manière que volant peindre une maison, nous pouvons la faire grande, dans un cadre vaste, ou petite,

(136)

dans un cadre plus resserré, en diminuant seulement les proportions. C'est ce qu'on appelle dessiner *sur une grande ou petite échelle*.

Une partie de la terre est couverte d'eau. La partie que les eaux ne couvrent pas est appelée *terre*, et n'est pas tout-à-fait aussi étendue que la moitié de l'autre.

La totalité de la terre est donc divisée en *terre* et *eau*.

Cette terre est elle-même entièrement entourée par l'air.

On appelle *substance* tout ce qui se trouve sur *terre* ou en *terre*. On suppose que chacune des *substances* est un composé de *particules* trop petites pour être aperçues.

Toutes ces substances sont fixées à la terre, ou dans l'intérieur de la terre, et les différentes parties qui la composent tiennent les unes aux autres, parce que toutes les substances s'attirent l'une l'autre, sans

(137)

que nous puissions savoir pourquoi ni comment.

Plus une substance a d'étendue, plus elle attire à elle celles qui l'environnent, parce qu'elle est composée d'un plus grand nombre de particules, et que chacune de ces particules agit un peu. Voilà pourquoi la terre attire à elle tous les corps; ou autrement, pourquoi une substance quelconque que nous abandonnons à elle-même, tombe à terre, et *presse*, de ce que nous appelons *son poids*, le corps sur lequel elle s'appuie.

Lorsqu'un corps tombe sur la terre, il l'attire en haut, très-peu à la vérité, mais à peu près de la même manière que la terre l'attire en bas; tous les corps sont si petits, comparativement à la terre, et la terre est par conséquent si étendue relativement à eux, que nous ne voyons jamais le globe mù par quelque substance que ce soit, et qu'au contraire elle les attire toutes.

Les différens corps que nous remarquons

(138)

sur la terre pourraient s'attirer l'un l'autre, s'ils avaient plus d'étendue que notre globe; mais il en est tout autrement, et quoiqu'ils aient une tendance à s'attirer l'un l'autre, la terre, plus volumineuse, les attire tous avec tant de force, qu'ils demeurent fixés à sa surface, et ne peuvent plus agir l'un contre l'autre.

Voilà pourquoi il faut que nous fassions un effort pour lever un bras ou une jambe, tandis que nous n'en faisons aucun pour laisser retomber un de ces membres.

Telle est encore la raison qui fait que nous ne nous éloignons jamais de la terre; quoiqu'elle soit en rotation; car (la terre en attirant puissamment à elle), nous sommes toujours attachés à sa surface, que nous soyons debout, assis ou couchés.

Nous disons que ce qui est dans la terre est au-dessous de nous; et que ce qui l'environne (par exemple les nuages), est au-dessus de nous, parce que, bien que la terre tourne, nous restons toujours la tête en haut et les pieds en bas; c'est-à-dire, les pieds

(139)

fixés à la terre et la tête dirigée vers le ciel.

Si un corps d'une plus grande étendue que la terre venait à s'en approcher, il attirerait notre monde à lui, et non-seulement notre monde, mais tout ce qui est sur ce globe; mais, quoiqu'il y ait des corps d'un plus grand volume que la terre, ils n'en sont pas assez rapprochés pour l'attirer.

Plus les substances sont près les unes des autres, plus elles agissent puissamment les unes sur les autres. Voilà pour quelle raison les petites particules qui composent un corps solide sont étroitement unies, et pourquoi il faut employer de la force pour les séparer, les couper ou les diviser.

Cette propriété que les substances ont de s'attirer s'appelle *attraction*; et quand elles sont réunies, nous disons qu'il y a *attraction* entre elles.

Sans cette *attraction* des substances, chaque puissance, qui pourrait agir sur les corps, à quelque degré de mouvement qu'ils

(140)

fussent arrivés (le vent, par exemple), les mettrait en pièces; et en très-peu de tems, le monde entier serait divisé en une infinité de particules.

Lorsque la force du vent est plus grande, et agit plus puissamment sur un corps, que l'attraction de la terre sur la substance qui le compose, ce corps est emporté dans les airs; et quand ce vent cesse, et que l'attraction de la terre sur la substance reprend la supériorité de force, le corps tombe.

Si la puissance du vent, sur les particules qui forment une substance, est plus grande que l'*attraction* de ces particules entr'elles, la substance est détruite.

Quand l'attraction des parties d'une substance, ou d'un corps, est plus grande avec la terre qu'entr'elles, le corps tombe en pièces; parce que chacune des parties de la substance tombe nécessairement à terre, aussitôt que l'étendue de la terre donne lieu à une *attraction* plus grande que celle qui résulte de la densité de ces particules entr'elles.

(141)

Car la force de l'attraction dépend toujours de la *densité* des *corps* ou de leur *étendue*.

Presque tous les corps que nous voyons sont faits de deux ou de plusieurs substances, et alors sont appelés *corps composés*. Les substances qui composent les corps sont appelées *éléments* ou *corps simples*. Nous trouvons rarement des corps simples, parce que rarement il arrive qu'un être soit composé d'une seule substance.

Quoiqu'il y ait un grand nombre de corps composés, il n'y a cependant que peu d'espèces différentes de corps simples; mais la diversité de leurs combinaisons en semble donner lieu aux différents effets que nous remarquons, de même que l'alphabet, composé de peu de lettres, peut servir à former une très-grande quantité de mots.

Nous pouvons décomposer les êtres *composés*; c'est-à-dire, que nous pouvons extraire les corps simples qui entrent dans la composition d'une substance, mais nous ne pouvons ensuite recomposer un corps que nous avons analysé; par exemple,

(142)

nous pouvons décomposer un morceau de viande ou un os, et analyser les substances simples qui le composent; mais après avoir extrait ces substances, nous ne pourrions plus en relaire ni de la viande ni un os.

Toute substance appartient à une des trois grandes divisions appelées *règnes*, savoir :

Le règne animal,

Le règne végétal

Et le règne minéral.

Maintenant nous allons vous apprendre à reconnaître auquel de ces trois règnes appartiennent les objets.

Les animaux changent, vivent, se meuvent d'eux-mêmes et pensent (sinon tous, au moins la plupart.)

Les végétaux changent, vivent; mais ils ne peuvent se mouvoir d'eux-mêmes, et on ne suppose pas qu'ils pensent.

Les minéraux changent; mais ils ne vivent pas, ils ne peuvent donc ni mourir ni

se flétrir, et ils ne sont pas plus susceptibles que les végétaux, de se mouvoir d'eux-mêmes et de penser (1).

Ainsi les animaux, les végétaux, les minéraux, ou toutes les substances, sont susceptibles de changement; les animaux et les végétaux changent et vivent; les animaux changent, vivent, se meuvent, et pensent.

I. Comment les animaux, les végétaux et les minéraux changent.

Toute substance change continuellement, soit que le changement s'opère lentement, soit qu'il ait lieu avec promptitude, il peut être nécessité par l'accroissement ou par le déclin; quelquefois il se fait peu à peu et par degrés imperceptibles, quelquefois un instant suffit pour que la métamorphose soit complète. Lorsque les:

(1) Ces définitions ne sont pas données comme les plus exactes qu'on puisse faire; mais comme simples et d'une facile application.

animaux ou les végétaux changent pour augmenter en étendue, nous disons qu'ils croissent.

Quand un animal naît, il est plus petit qu'après avoir vécu quelque tems; il continue à augmenter de volume, ou à croître; quelquefois, il suffit de peu d'heures; d'autres fois, il faut beaucoup d'années pour qu'il arrive à sa plus grande étendue. Cependant les particules qui composent la substance dont il est formé, ne cessent point d'agir; bientôt elles s'altèrent, et dès ce moment le corps commence à décliner, mais avec lenteur. Les animaux croissent avec si peu de rapidité, que nous ne pouvons suivre de l'œil leurs progrès; mais si ces animaux ont été loin de nous pendant un certain tems, nous pouvons alors apprécier le développement ou l'altération qui a eu lieu.

Les végétaux commencent à croître, ou d'une graine ou d'une racine, lorsque cette graine ou racine est mise dans la terre, ou simplement dans l'eau. Une partie des vé-

(145)

gétaux pousse hors de terre, et c'est cette partie que nous voyons; une autre partie croît en terre, et c'est ce qu'on appelle *racines*.

En général, la crue des végétaux est plus rapide que celle des animaux; mais il est bien rare que leur accroissement soit assez prompt pour que nous le puissions suivre de l'œil.

Beaucoup de végétaux ne croissent que pendant les mois chauds de l'année, et l'hiver ils cessent de pousser, ou même perdent une partie de leur crue. Les particules qui composent un végétal se meuvent à l'intérieur de la plante, et finissent par l'altérer, de même que chez les animaux. Quelques végétaux atteignent une étendue beaucoup plus considérable que celle de quelque animal que ce soit.

Les *minéraux* changent, comme les animaux et les végétaux, mais d'une manière très-différente, et beaucoup plus lente; souvent même ils semblent ne pas changer du tout. Quelques-uns des minéraux ce pendant deviennent plusieurs milliers de

7

(146)

fois plus étendus qu'aucun animal ou végétal.

La masse de la terre, du moins autant que nous en sommes instruits, est composée de minéraux, qui ont subi des changements après une longue suite de tems.

Il y a un nombre bien plus considérable de substances minérales sur la terre, que de substances animales ou végétales, car les animaux et les végétaux ne croissent qu'à la surface de la terre, tandis que la terre elle-même est probablement une masse de substances minérales.

II. *Comment les animaux et les végétaux vivent.*

Nous avons dit que les animaux, les végétaux et les minéraux changent continuellement, devenant tantôt plus étendus, tantôt moins; mais nous avons remarqué que les animaux et les végétaux prennent leur accroissement tout différemment que les minéraux. D'abord ils croissent plus prompt-

(147)

tement; ensuite, les animaux ne peuvent se développer s'ils ne sont nourris, non plus que les végétaux s'ils ne sont plantés; les animaux et les végétaux augmentent en dimension pendant un certain tems, s'arrêtent ensuite à un certain degré; puis, deviennent de moins en moins vigoureux, et enfin finissent par subir un changement complet, que nous appelons *mort*.

Dans cet état, l'animal ne peut plus ni se mouvoir ni prendre aucune nourriture; comme, il est dans l'habitude de le faire; le végétal ne croît plus dans la belle saison, et ne perd plus son feuillage l'hiver; il tombe à terre; les racines et les branches, de même que le corps de l'animal mort, se décomposent par parties, et se mêlent avec les minéraux et les végétaux qui les entourent et finissent par se combiner avec ces substances.

Cette propriété qu'ont les animaux et les végétaux de changer de manière, d'être est appelée *la vie*; et le changement soudain qu'ils subissent, dès qu'ils ne peuvent plus

(148)

continuer d'exister de la même manière, est appelé *mort*.

Les minéraux ne croissent pas de la même manière pendant un tems, et ne sont pas sujets à ce changement soudain; ainsi donc, les minéraux ne peuvent ni *vivre* ni *mourir*.

Les animaux ne peuvent vivre sans prendre de nourriture, laquelle est toujours composée d'une substance *animale*, végétale ou minérale, mais surtout végétale, non plus que sans aspirer et rejeter l'air qui environne la terre; si les animaux étaient privés de nourriture et d'air, même pendant un laps de tems assez court, ils mourraient tous; cette nourriture et cet air doivent être propres à l'animal, sans quoi il mourrait également. Quelques animaux ont besoin d'une sorte de nourriture, tandis que d'autres en choisissent une différente; chaque espèce recherche une sorte d'alimens différente de celle qui convient aux autres espèces. Il y a aussi une qualité d'air qui tuerait un animal s'il le respi-

(149)

rait, et qu'on trouve quelquefois dans la terre, à un peu de profondeur; mais, en général, l'air qui entoure le globe est propre à la respiration; seulement il est plus ou moins bon dans un lieu que dans un autre.

Une partie de la nourriture que l'animal mange, se combine avec les particules de son corps, et l'air qu'il respire emporte quelques-unes de ces particules, qui ainsi sont continuellement en mouvement, et font changer l'individu peu à peu. La plupart des animaux ont du sang; il est rouge chez les uns, et blanc chez les autres. Il circule à l'intérieur du corps tant que l'animal vit; s'il s'écoule par une blessure, ou qu'un coup violent arrête son mouvement, l'animal meurt.

Quelques animaux ne vivent pas un jour; d'autres vivent deux cents ans. Nous ne pouvons savoir quelle est la plus longue durée de la vie de quelques animaux.

Les végétaux, comme les animaux, ne peuvent vivre sans alimens ni air. Leurs

(150)

racines reçoivent la nourriture de la terre ou de l'eau, et cette nourriture circule dans tout le corps du végétal. Les autres parties de la plante, particulièrement les feuilles, sont mises en action par l'air qui les environne, et ainsi la circulation est établie jusque dans les dernières ramifications du végétal.

Quelques végétaux exigent ou une espèce de terre, ou une autre. Il y en a qui vivent seulement un été, on les appelle *plantes annuelles*; d'autres existent beaucoup plus long-tems que les animaux; on assure que quelques-unes vivent jusqu'à mille ans; on les nomme *éternelles*.

Si on coupe un végétal en deux, la partie qui reste en terre continue de subsister; l'autre meurt.

Quelques animaux et quelques végétaux ne peuvent subsister que dans des pays chauds; d'autres, au contraire, ne vivent que dans des pays froids.

III. *Comment les animaux se meuvent et pensent.*

Parmi les animaux, les uns vivent sur la terre, les autres dans l'eau.

Ceux qui vivent sur terre se meuvent au moyen de pieds qui leur servent à se porter en avant ou en arrière selon qu'il leur plaît. Quelques animaux terrestres se meuvent sans pieds, en ramassant et étendant successivement leur corps; d'autres ont la faculté de se transporter dans l'air, et de s'y mouvoir sans toucher la terre : ils se servent d'ailes avec lesquelles ils frappent l'air aussi long-tems qu'ils veulent se maintenir élevés.

Les animaux qui vivent dans l'eau s'y meuvent au moyen de nageoires, qui sont composées de substances cartilagineuses; et leur servent comme de pieds, à se transporter où ils ont besoin.

Nous ne connaissons qu'une espèce d'animaux aquatiques, et qui aient la faculté

de vivre exposés à l'air, encore n'est-ce que pour très-peu de tems.

Presque tous les animaux ont cinq sens, savoir : la vue, l'ouïe, le tact, l'odorat et le goût.

Toute chose qui approche un animal fait une impression sur ses sens, de la même manière que nous pouvons faire une impression quelconque sur un corps, par exemple, en le frappant ou en le pressant.

Si nous pressons ou frappons un corps, il reçoit le coup ou la pression; de même si quelque chose frappe notre vue, nos yeux reçoivent l'image de cette chose. Si ce sens n'agissait pas ainsi, nous ne pourrions juger du rapport des choses entr'elles. Il en est de même des autres sens.

Nous ne savons certainement pas *comment* nos sens reçoivent ces impressions, mais nous savons qu'ils les reçoivent, puis-que nous voyons avec nos yeux, nous entendons par nos oreilles, nous tâtons avec les doigts, ou avec toute autre partie de

(153)

notre corps, nous flairons par le nez, et nous goûtons avec la bouche.

Si nous ne pouvions voir, toucher, entendre, flairer ni goûter, nous ne connaîtrions rien de ce qui nous environne ; ainsi toutes nos connaissances nous viennent par les sens.

Nous ne pourrions nullement penser si nous ne connaissions rien de ce qui est autour de nous, puisque c'est toujours sur ce que nous connaissons, ou sur les impressions que nous avons reçues, que nous pensons. Ces impressions font donc naître des idées, et après avoir conçu une idée, nous agissons.

D'où on voit que ce sont les impressions que nous recevons par nos sens, qui nous engagent à nous mouvoir et à agir.

Les végétaux n'ont point de sens ; ils ne peuvent ni voir, ni entendre, ni toucher, ni flairer, ni déguster. Ils ne peuvent donc ni penser, ni se mouvoir d'eux-mêmes, ni agir.

7.

(154)

Nous allons maintenant faire connaître les différentes sortes de connaissances que les hommes ont acquises par leurs sens.

Toute connaissance appartient à un *art*, ou à une *science*.

Tout ce qui nous instruit de la nature, et des propriétés d'une substance, est une *science*.

Tout ce qui nous enseigne à produire quelque chose est un *art*.

Les principales sciences sont :

L'astronomie, la géographie, les mathématiques, la zoologie, la botanique, la minéralogie, la chimie.

Les arts sont :

L'agriculture, la mécanique, l'architecture, le dessin (comprénant la sculpture), la musique, et quelques autres de moindre importance.

Presque tous les arts reposent sur les sciences, car il est nécessaire de connaître la nature des choses avant de chercher à les produire.

Nous allons examiner les sujets dont

(155)

traitent les sciences , et ce que les arts nous apprennent.

L'ASTRONOMIE.

Nous avons dit qu'il y a beaucoup de corps très-volumineux outre la terre, et que quelques-uns d'entr'eux sont beaucoup plus étendus que notre monde. Ces corps sont le soleil, la lune et les étoiles.

L'astronomie nous enseigne tout ce qui concerne ces astres, leur dimension relative, et la distance qui existe entr'eux.

Les planètes sont à une si grande distance de nous, que beaucoup d'entr'elles ne nous sont pas connues.

LA GÉOGRAPHIE

Est la connaissance des différentes contrées de la terre. Cette science nous apprend en quoi les pays différent, où se ressemblent, et quelle est leur division. Elle nous apprend aussi quelles sont les

(156)

mœurs et les coutumes des peuples qui habitent ces contrées, et quels sont les animaux et les végétaux qu'on y trouve.

LES MATHÉMATIQUES

Nous enseignent à énumérer et à mesurer les différents corps, et à calculer leurs dimensions relatives.

LA ZOOLOGIE

Est l'histoire naturelle des animaux, ou la connaissance de la formation, de la figure, des mœurs et des dispositions des animaux.

Comme les hommes et les femmes sont des animaux, elle nous les fait connaître ; par exemple, elle nous donne des notions sur leur corps, le sang, la chair, les os, les nerfs, les articulations, et les différentes parties de l'individu.

Cette science nous explique, autant que cela peut l'être, comment les animaux vi-

(157)

vent, se meuvent, comment ils sentent et pensent, et comment ils doivent être traités; mais parmi toutes ces facultés il y a un grand nombre de choses qui ne sont point découvertes encore, et que nous ne pouvons comprendre.

La partie de l'histoire naturelle des hommes et des femmes, qui nous apprend quels sont ceux d'entr'eux qui ont vécu depuis un certain tems, est appelée *histoire*.

Nous ne sommes pas certains que toutes les histoires soient également vraies, parce que les hommes qui les ont écrites peuvent avoir été trompés, ou même avoir écrit des choses qu'ils savaient bien n'être pas arrivées. Cependant, lorsque différens écrivains, qui ne se connaissent point, et ne pouvaient savoir les uns et les autres ce que chacun d'eux écrivait, disent la même chose, ce qu'ils affirment est plus probablement vrai que ce qui n'est avancé que par un seul écrivain.

Il est plus difficile de s'assurer de la vérité de ce que nous lisons dans l'histoire,

(158)

que de l'exactitude de ce que nous lisons sur la terre et ses productions, parce que nous voyons la terre et ce qu'elle produit, tandis que nous ne pouvons voir ce qui était passé avant notre naissance, ni même, si les événemens étoient anciens, voir personnellement qui en ait été témoin.

La partie de zoologie qui nous entretient des hommes et des femmes, est la science la plus importante du monde, puisque c'est elle qui nous apprendra, quand nous serons hommes, tout ce qu'on sait, et tout ce qui reste à connaître d'utile sur nous-mêmes. Tout sujet nous concernant appartient donc réellement à la zoologie; cependant la partie de cette science qui traite de l'homme est si étendue et si différente de l'histoire naturelle des autres animaux, qu'on a jugé à propos de l'en distraire, et de diviser la zoologie en un certain nombre d'autres sciences dont on vous parlera lorsque vous serez plus âgés, et plus capable de les comprendre.

(159)

LA BOTANIQUE

Est la connaissance de toutes les substances qui appartiennent au règne végétal, comme les arbres, les fleurs, les fruits, et toutes les autres productions végétales.

MINÉRALOGIE.

Cette science traite des substances qui composent la terre.

La partie de la minéralogie qui nous fait connaître l'intérieur de la terre, et les grandes masses de minéraux, s'appelle *géologie*.

Nous avons très-peu de connaissances en géologie, parce que nous n'avons jamais pu pénétrer dans la terre qu'à deux milles de profondeur. Et puisque la terre a 8,000 milles d'épaisseur, il aurait fallu descendre à une profondeur 4,000 fois plus grande que celle à laquelle nous avons pénétré, pour connaître tout l'intérieur du globe.

(160)

Examinons à présent les arts dont nous avons parlé.

L'AGRICULTURE.

La plus grande partie de nos alimens viennent de la terre. L'agriculture est l'art de faire croître cette nourriture. Cet art est le plus nécessaire de tous, puisque sans lui nous ne pourrions vivre.

LA MÉCANIQUE.

Toutes les choses que nous portons, et dont nous nous servons, la nourriture exceptée, sont produites par des manufactures. Le plus grand nombre des objets est fait au moyen de mécaniques. Une mécanique fait souvent plus d'ouvrage qu'un grand nombre d'hommes et de femmes réunis. Tous les jours de nouveaux mécanismes sont inventés.

Les professions qui ne sont que de pe-

(161)

tites manufactures , s'appellent métiers ; par exemple, le métier de cordonnier , de tailleur, etc.

L'ARCHITECTURE.

Cet art est celui de construire les maisons dans lesquelles vivent les hommes.

Une hutte, ou cabane, est une petite maison facilement bâtie, et qui ne contient qu'une ou deux chambres.

Un palais est une grande maison, qui contient de vastes appartemens, et pour la construction de laquelle il faut beaucoup de tems et de peine.

LE DESSIN

Est l'art de représenter les objets, de manière à ce que les personnes qui voient le dessin puissent reconnaître l'objet qu'il retrace, quoiqu'elles n'aient point vu l'original. Ainsi plus un dessin est semblable

(162)

à l'objet qu'il représente, plus il est parfait.

On fait des dessins sur le papier, la toile et l'ivoire. Ceux qui représentent une personne, s'appellent *portraits*.

La sculpture est l'art de représenter les objets, en donnant leur forme à du bois ou à de la pierre.

LA MUSIQUE

Est l'art de produire des chants agréables, au moyen de la voix ou de différens instrumens.

La connaissance des règles nécessaires pour composer la musique, s'appelle *base fondamentale*.

Beaucoup de sciences peuvent être comprises dans la *chimie* ; et même une grande partie des arts en dépendent, car la chimie est effectivement la connaissance des pro-

(163)

priétés de toutes les substances, de la manière dont les substances simples sont combinées, et de celle dont les substances composées peuvent être analysées.

On peut dire que la chimie, *dans la signification la plus étendue*, est la connaissance de quelques-unes des propriétés de celles des substances que nous avons déjà découvertes, de quelques-unes de leurs combinaisons, ainsi que des moyens de faire quelques-unes de ces combinaisons.

Même, dans l'acception la plus rétrécie, la chimie renferme une partie des sciences appelées *zoologie, botanique et minéralogie*.

Les substances dont les chimistes s'occupent principalement aujourd'hui sont les minérales; c'est donc avec la minéralogie que cette science a maintenant le plus de rapports.

Nous n'avons pas, en chimie, les connaissances que nous pouvons espérer d'en avoir, lorsqu'on aura apporté plus d'attention, et multiplié les expériences.

(164)

Pour nous faciliter les moyens de nous instruire dans les sciences et dans les arts, nous apprenons à lire et à écrire, à comprendre les langues, et les signes employés en arithmétique, de même que dans la musique. Mais ces connaissances préliminaires ne sont pas les sciences. Nous ne les prenons que comme des moyens d'étudier. Toute connaissance réelle est dans la science elle-même, et non dans les moyens qui nous sont offerts pour l'acquiescer.

Le négoce, ou commerce, est le système de dispositions au moyen desquelles les productions de la nature et des arts se répandent maintenant par toute la terre.

Tout fait nouveau dans les sciences est appelé *découverte*; toute manière nouvelle de produire, dans les arts, s'appelle *invention*.

Aucune science n'est complète, aucun

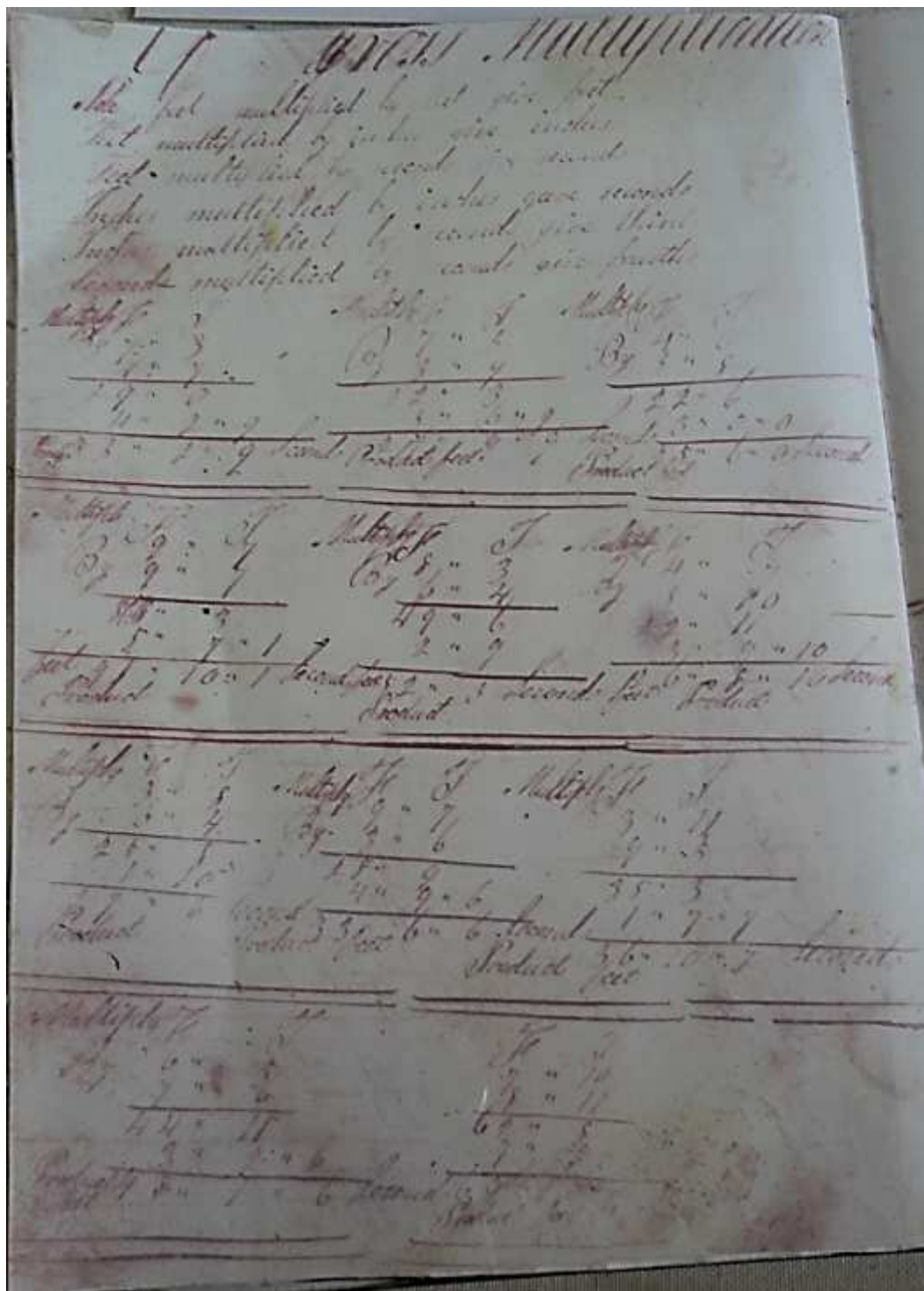
(165)

art n'est borné. L'esprit humain acquiert chaque jour quelque lumière; ainsi, chaque jour peut voir éclore une invention nouvelle, une découverte utile.



FIN.

Annexe 14 – Copies d'extraits de cahiers d'arithmétiques d'élèves de New Lanark estimés autour de 1826. Les originaux sont conservés à le Mitchell Library de Glasgow / Mise en perspective avec l'ouvrage dont les leçons semblent extraites : Dilworth, T. (1800). *The Schoolmaster's assistant, being compendium of arithmetic, both practical and theoretical*, Air : J. & P. Wilson¹



¹ Les extraits ici présentés sont tirés d'une édition de 1800 de ce texte mais des éditions antérieures ont pu être identifiées.

A joiner having finished several very curious pieces of workmanship, would know the contents of the whole: now the first piece measured seventeen feet, ten inches, two seconds, and one third; the second measured twenty feet four inches, and seven thirds; the third forty-nine feet, six inches, and nine seconds; the fourth fourscore feet, and ten seconds; the fifth seventeen feet and four thirds; the sixth threescore feet, and ten seconds; and the seventh thirty-seven feet, and nine thirds;—what was the contents in square measure?

Subtraction of Duodecimals

EXAMPLES.

	F.	I.	"	'''	'''
From	74	3	4	7	6
Take	19	4	1	8	10

	F.	I.	"	'''	'''
From	100	5	7	3	1
Take	97	8	9	10	11

A joiner having lined several rooms very curiously, with cedar, finds the amount to be, in square measure 800 f. 3 in. 4"; but several deductions being to be made for windows, arches, &c. those deductions amounted to 76 f. 3 in. 7" 10" 5";—how many feet of workmanship must be paid for?

Multiplication of Duodecimals, commonly called Cross Multiplication.

Note. Feet multiplied by feet give feet.
 Feet multiplied by inches give inches.
 Feet multiplied by seconds give seconds.
 Inches multiplied by inches give seconds.
 Inches multiplied by seconds give thirds.
 Seconds multiplied by seconds give fourths, &c.

Of Loss and Gain

What is loss and gain? Loss and gain is a rule which teacheth merchants what they shall gain or lose in the sale of their goods having the price that they bought them for and the price for which they are to be sold both known, how are the following questions proved let them be solved

Q. I Bought 15 cut cloths at 15 p^{er} cut which I sell at 20 p^{er} cut. What is the profit at the whole?

$$\begin{array}{r} 1^{\text{st}} \text{ } 28^{\text{th}} \text{ } 15 \\ \underline{15} \\ 224 \\ \underline{224} \\ 24504 \\ \underline{2304} \end{array}$$

$$\begin{array}{r} 1^{\text{st}} \text{ } 32^{\text{th}} \text{ } 15 \\ \underline{15} \\ 72 \\ \underline{72} \\ 316 \\ \underline{316} \\ 144 \\ \underline{144} \\ 8064 \\ \underline{8064} \\ 423214 \\ \underline{423214} \\ 127036 \\ \underline{127036} \\ 25818 \\ \underline{25818} \end{array}$$

Q. I Buy cloth at 12 p^{er} cut and sell them again at 15 p^{er} cut. What shall I lose if I do 120 dozen?

$$\begin{array}{r} 1^{\text{st}} \text{ } 20^{\text{th}} \text{ } 120 \\ \underline{120} \\ 12800 \\ \underline{12800} \\ 24000 \\ \underline{24000} \\ 120 \end{array}$$

$$\begin{array}{r} 1^{\text{st}} \text{ } 17^{\text{th}} \text{ } 1440 \\ \underline{1440} \\ 10080 \\ \underline{10080} \\ 1440 \\ \underline{1440} \\ 21440 \\ \underline{21440} \\ 2040 \\ \underline{2040} \end{array}$$

$$\begin{array}{r} 120 \\ \underline{102} \\ 18 \end{array}$$

$$\begin{array}{r} 20 \text{ } 2045.6 \\ \underline{20228} \end{array}$$

OF LOSS AND GAIN.

Q. WHAT is Loss and Gain?

A. Loss and Gain is a rule which teacheth merchants what they shall gain or lose in the sale of their goods, having the price that they bought them for, and the price for which they are to be sold, both known.

Q. How are the following questions proved?

A. Let them be varied.

Examples.

1. Bought 18 cwt. of cheese, at 18s. per cwt. which I sell out again at 3d. per lb. what is the profit of the whole? *An. £4:4s.*

2. If I buy deals at 20d. a piece, and sell them again at 17d.—what shall I lose by 120 dozen? *An. £18.*

3. Hats bought at 4s. a piece, and sold again at 4s. 9d.—what is the profit in laying out 100l? *An. £18:15s.*

4. Bought 19 fother of lead, at 14s. per cwt.—what is gained by the whole, sold out at 4d. per lb? *An. 432:5s.*

5. Bought 60 reams of paper, at 15s. per ream—what is the loss in the whole quantity, at 4 per cent. *An. £1:16s.*

6. Bought 7 tons of wine, at 17l. per hhd. which I sell again at 19. per pint, I demand the whole gain, and the gain per cent. *An. £229:12s. whole gain; an. £48:4:8 1 qr. $\frac{4}{5}$ the gain per cent.*

7. If I sell 500 deals at 15d. a piece, and 9l. per cent. loss—what do I lose in the whole quantity? *An. £2:16:9.*

8. Bought 3 oxen for 24l. 10s. which I sell again for 2s. per stone—what ought the 3 oxen to weigh together, the hides and offal being the only clear gain? *An. 245 stone.*

9. A draper bought 100 yards of broad cloth, for which he gave 56l.—I desire to know how he must sell it per yard to gain 19l. in the whole? *An. 15s. per yard.*

10. A draper bought 100 yards of broad cloth for 56l.—I demand how he must sell it per yard to gain 15l. in laying out 100l.? *An. 12s. 10d. 2 qrs. $\frac{1}{4}$.*

OF FELLOWSHIP.

Q. HOW many sorts of Fellowship are there?

A. Two; Single and compound.

Of Single Fellowship.

Q. What is Single Fellowship?

A. Single Fellowship is when the stocks of each partner continue for an equal term of time.

E. 2

Interest

If the allowance given in the borrow of any sum of money to the lender principal is the money lent rate per cent is the sum agreed on amount is the principal and interest added together to find the

interest for one year. Rule, multiply the principal by the rate per cent and divide by 100 to find the interest for several years. Rule multiply the interest for one year by the number of years

Examples.

1 What is the interest of 85 for a year at 5 per cent ans 4 1/4

$$\begin{array}{r} 85 \\ 100 \overline{) 425} \\ \underline{400} \\ 25 \end{array}$$

$$\begin{array}{r} 25 \\ 100 \overline{) 500} \\ \underline{500} \\ 0 \end{array}$$

2 What is the interest of 100 £ 10 0 for a year at 12 per cent ans 12 0

$$\begin{array}{r} 100 - 10 \\ 100 \overline{) 454} \\ \underline{400} \\ 54 \end{array}$$

$$\begin{array}{r} 25 \\ 100 \overline{) 250} \\ \underline{200} \\ 50 \end{array}$$

$$\begin{array}{r} 25 \\ 100 \overline{) 250} \\ \underline{200} \\ 50 \end{array}$$

$$\begin{array}{r} 25 \\ 100 \overline{) 250} \\ \underline{200} \\ 50 \end{array}$$

EXAMPLES

12 3 16 of tobacco at 4-12 per cwt. Fact 59-6-1-1-1

55	4	
2	6	
1	3	
0	15	11
659	6	14

C.	qrs.	lb.		l.	s.	d.		h.	n.	d.	
13	2	14	of tobacco,	at	3	14	0 per cwt.	Facit	46	14	3
17	3	19	of sugar,	at	2	2	6 per cwt.	Facit	80	1	6
4	1	16	of soap,	at	3	12	0 per cwt.	Facit	15	16	3
10	0	12	of tallow,	at	1	19	6 per cwt.	Facit	19	19	2
5	1	0	of tobacco,	at	2	17	0 per cwt.	Facit	14	19	3
4	3	0	of sugar,	at	2	18	6 per cwt.	Facit	13	17	10
7	0	19	of sugar,	at	3	16	0 per cwt.	Facit	27	4	10
5	2	10	of tobacco,	at	2	18	6 per cwt.	Facit	16	27	2
7	1	14	of tobacco,	at	3	15	9 1/2 per cwt.	Facit	27	18	9
9	2	26	of tallow,	at	4	10	4 1/2 per cwt.	Facit	43	19	6

OF INTEREST.

Q. **H**OW many kinds of Interest are there?
A. Two: Simple and Compound.

Of Simple Interest.

5. What is Simple Interest?

A. Simple Interest is the profit allowed in the lending or forbearance of any sum of money for some determined space of time.

Q. What is the principal?

A. The principal is any sum of money lent, for which interest is to be received.

Q. What is the rate *per cent*?

A. It is a certain sum agreed on between the lender and the borrower, to be paid for every 100 pounds for the use of the principal, which, according to the laws of England, ought not to be above 5l. for the use of 100l. for one year, and 10l. for the use of 100l. for two years; and so on for any sum of money, in proportion to the time proposed.

Vulgar Fractions

Case 1st

How is it to reduce vulgar fractions from one denominator to another of the same value having the denominator of the required fraction given & the denominator of the given fraction is to its numerator - is the denominator of the intended fraction to its numerator will be Case and case & prove each other

Examples

Reduce $\frac{5}{7}$ to a fraction of the same value whose denominator is 49

$$\begin{array}{r} \frac{5}{7} = \frac{49}{7 \times 7} \\ 4 \overline{) 343} \\ 28 \\ \hline 63 \\ 56 \\ \hline 73 \end{array}$$

Reduce $\frac{4}{3}$ to a fraction of the same value whose denominator is 36

$$\begin{array}{r} \frac{4}{3} = \frac{48}{3 \times 12} \\ 4 \overline{) 48} \\ 36 \\ \hline 12 \\ 12 \\ \hline 0 \end{array}$$

Reduce $\frac{2}{5}$ to a fraction of the same value whose denominator is 75

$$\begin{array}{r} \frac{2}{5} = \frac{30}{5 \times 15} \\ 2 \overline{) 30} \\ 15 \\ \hline 15 \\ 15 \\ \hline 0 \end{array}$$

CASE IX.

Q. How do you reduce vulgar fractions from one denomination to another of the same value, having the denominator of the required fraction given?

A. As the denominator of the given fraction,
Is to its numerator:
So is the denominator of the intended fraction,
To its numerator.

Note, This case and case 8 prove each other.

EXAMPLES.

1. Reduce $\frac{1}{2}$ to a fraction of the same value, whose denominator shall be 40. *Facit* $\frac{20}{40} = \frac{1}{2}$.
2. Reduce $\frac{1}{4}$ to a fraction of the same value, whose denominator shall be 49. *Facit* $\frac{12.25}{49}$.
3. Reduce $\frac{1}{2}$ to a fraction of the same value, whose denominator shall be 46. *Facit* $\frac{23}{46} = \frac{1}{2}$.
4. Reduce $\frac{1}{3}$ to a fraction of the same value, whose denominator shall be 131 $\frac{1}{3}$. *Facit* $\frac{43.666}{131} = \frac{1}{3}$.

CASE X.

Q. How is a mixt fraction reduced to a single one?

A. 1. When the numerator is the integral part: Then,

(1.) Multiply it by the denominator of the fractional part, and to that product add the numerator of the fractional part, for a new numerator.

(2.) Multiply the denominator of the fraction by the denominator of the fractional part of the numerator, for a new denominator.

Note, This proves case 9.

EXAMPLES.

1. Reduce $4\frac{1}{2} \frac{7}{8}$ to a simple fraction. *Facit* $\frac{71}{8}$.
2. Reduce $1\frac{1}{2} \frac{1}{3}$ to a simple fraction. *Facit* $\frac{5}{2}$.
3. Reduce $2\frac{1}{3} \frac{4}{5}$ to a simple fraction. *Facit* $\frac{14}{3}$.
2. When the denominator is in the integral part: Then
- (1) Multiply it by the denominator of the fractional part and to that product add the numerator of the fractional part for a new denominator.
- (2) Multiply the numerator of the fraction by the denominator of the fractional part, for a new numerator.

Note, This proves case 8.

EXAMPLES.

1. Reduce $11\frac{1}{2} \frac{2}{3}$ to a simple fraction. *Facit* $\frac{25}{3}$.
2. Reduce $4\frac{1}{2} \frac{1}{3}$ to a simple fraction. *Facit* $\frac{13}{2}$.
3. Reduce $15\frac{1}{2} \frac{1}{3}$ to a simple fraction. *Facit* $\frac{31}{2}$.

vulgar Fractions

Reduce 8 of 8 of 4 to a single fraction. In part 1486

$$\begin{array}{r} \frac{1}{2} \times \frac{1}{4} = \frac{1}{8} \\ \frac{1}{8} \times \frac{1}{4} = \frac{1}{32} \\ \frac{1}{32} \times \frac{1}{4} = \frac{1}{128} \end{array}$$

Case 6

Now do you reduce the fraction of one denominator to the fraction of another but greater, retaining the same value. Reduce the given fraction to a compound fraction by comparing it with all the denominations, then it and that denomination which you would have it to. Reduce that compound fraction to single one by case 5.

Examples

Reduce 8 of a penny to the fraction of a pound 1774

$$\begin{array}{r} \frac{1}{4} \times \frac{1}{2} = \frac{1}{8} \\ \frac{1}{8} \times \frac{1}{2} = \frac{1}{16} \\ \frac{1}{16} \times \frac{1}{2} = \frac{1}{32} \end{array}$$

Reduce 6 of a farthing to the fraction of a shilling 1774

$$\begin{array}{r} \frac{1}{4} \times \frac{1}{4} = \frac{1}{16} \\ \frac{1}{16} \times \frac{1}{2} = \frac{1}{32} \end{array}$$

Reduce 4 of an ounce Troy to the fraction of a pound 1774

$$\begin{array}{r} \frac{1}{2} \times \frac{1}{2} = \frac{1}{4} \\ \frac{1}{4} \times \frac{1}{2} = \frac{1}{8} \end{array}$$

[...]

Case VI.

Q. How do you reduce the fraction of one denomination to the fraction of another, but greater, retaining the same value?

A. 1. Reduce the given fraction to a compound fraction, by comparing it with all the denominations between it, and that denomination, which you would reduce it to.

2. Reduce that compound fraction to a single one, by case 5.

Q.

124

Examples.

1. Reduce $\frac{1}{8}$ of a penny to the fraction of a pound. *Ans.* $\frac{1}{1600}$

Dilworth, T. (1800). *Op. cit.*, p.123-124

4. Jinde Kellerröste

These merchants trade together & split in 1000 £ and 100 £ and
Kings gain 100 £ what is each mans share of the gain

1841-1842

40
10

125" - 30" - 130"

12.3 37 30

$$\begin{array}{r} 116 \overline{) 1200} \\ \underline{116} \\ 40 \\ \underline{38} \\ 20 \\ \underline{19} \\ 10 \\ \underline{9} \\ 10 \\ \underline{9} \\ 10 \end{array}$$

[Faint handwritten notes or scribbles]

1864

120 17
43
32
7

1880

$1.5 \times 10^3 \times 10^3 = 1.5 \times 10^6$
 $1.5 \times 10^6 \times 10^3 = 1.5 \times 10^9$

[...]

OF FELLOWSHIP.

Q. HOW many sorts of Fellowship are there?

A. Two; Single and compound.

Of Single Fellowship.

Q. What is Single Fellowship?

A. Single Fellowship is when the stocks of each partner continue for an equal term of time.

84 *The Schoolmaster's Assistant*

Q. What is the rule?

A. As the sum of the several stocks,
Is to the total gain or loss;
So is each man's share in stock,
To his share of the gain or loss.

Q. How is this Rule proved?

A. Add all the shares together, and the Sum will be equal to the given gain or loss.

Note. This way of proving Fellowship will not hold good always: For if an error should be committed in the beginning of the work and carried on through the whole operation, yet the same will prove, though each man's share of the gain or loss assigned him by that operation, be either more or less than his true share. The most exact method, then that, I would propose, though something more tedious, is to change the order of the question, and put each man's share of the gain or loss in the place of his stock first laid out, and make the sum of the stocks stand in the place of the whole gain or loss, and then it will be,

As the total gain or loss
Is to the sum of the several stocks;
So is each man's share of the gain or loss
To his particular share in stock.

Q. What else doth this rule belong to beside Fellowship?

A. By it the estate of a bankrupt may be divided among his creditors: Also legacies may be adjusted, when there is a deficiency of assets or effects.

Examples.

1. A and B were sharers in a parcel of merchandise, in the purchase of which, A laid out 3l. and B 7l. and the commodity being sold, they find their clear gain amounts to 25s.—what part of it must each man have?

Ans. A must have 7s. 6d.; and B 17s. 6d.

2. A, B, and C, trading together, gained 120l. which is to be shared according to each man's stock; A put in 140l.; B 300l.; and C 160l.;—what is each man's share?

Ans. A 18l. B 60l. C 32l.

3. Three merchants trading to Virginia, lost goods to the value of 800l. Now if A's stock was 1200l.; B's 4800l.; and C's 2000l.—what sum did each man lose?

Ans. A lost 120l.; B 480l. C 200l.

Dilworth, T. (1800). *Op. cit.*, p.83-84

Bien que ce dernier extrait de l'ouvrage de Thomas Dilworth ne soit pas reproduit textuellement dans les cahiers, nous notons la similarité dans structure des exercices.

Annexe 15 - Lettre de Robert Owen à Miss Carnegy 30 oct. 1817 conservée
au Robert Owen Museum de Newtown (Wales)

New South 30 Oct 1817

Madam

Your esteemed letter arrived
here while I was in London & I was
pleased to find the good news.

It always affords me pleasure to
discover minds who have been accustomed to
reason accurately without prejudice. It is
by such alone that the world can be
improved & rendered perfectly happy.

Your question, with your thoughts, is most
natural. "But where are the books to be found
which a child can understand?" I can only
reply by saying they are not yet in
existence, & I have often industriously sought
for them in vain & I think there have
been competitors by the existing prejudices to use
such books as can only destroy the
human

intellects. In the last I fear find there is
scarcely a vestige there directly & indirectly
over no wrong error. I hope however, may
feel confident the day is dawning when
these things shall rapidly change, when
we shall from infancy cultivate & not
destroy all the rational powers of the rising
generations.

Wishes there permitted the
unusual books permitted books to be
used in the schools here; for after their
had some additional discussion with the
gentry respecting the principles which I wish
to introduce into general practice; it is my
intention to have books prepared for our
schools which shall be in the most interesting season
with these principles of the university one university
or feel that one vestige there is worth
suffer or possible afterwards to be seen.

When there can make their appearance

I shall soon make pleasure in putting
them into your hands. at the next time
permit me to subscribe myself

Yr. Obedt. Servt.

W. H. B. S. C.

It is at all times afford me
satisfaction to hear of the progress
of rational principles in your
neighborhood and any such
communication with their good may
favor me shall in future need with
immediate attention.

MS. A. 1. 1
13-1880

ROBERT OWEN MUSEUM

NEWTOWN

Transcription de la lettre de Robert Owen à Miss R. K. Carnegy of Craigs,
Montrose.

New Lanark 30 Oct 1817

Madam

Your esteemed letter arrived here while I was in London & it was mislaid & not found till just now.

It always affords me pleasure to discover minds who have been accustomed to reason accurately & without prejudice. It is by such alone that the world can be improved and rendered essentially happy.

Your question, with your thoughts, is most natural. "But where are the books to be found which a child can understand ?" I can only reply by saying that they are not yet in existence, at least I have industriously sought for them in vain & hitherto I have been compelled by the existing prejudices to use such books as can only destroy the human

intellects. In the best I can find there is scarcely a sentence that directly or indirectly does not convey error. I hope however; nay I feel confident the day is dawning when these things shall rapidly change; when we shall from infancy cultivate & not destroy all the rational powers of the rising generations.

Hitherto I have permitted the usual scotch parochial school books to be used in the schools here; but after I have had some additional discussion with the public respecting the principles which I wish to introduce into general practice; it is my intention to have books prepared for our schools which shall be in undeviating unison with those principles & I hope not contain one inconsistent or false notion – one sentiment that it would [be] useful or possible afterwards to unlearn.

When these can make their appearance

I shall have much pleasure in putting them into your hands. in the meantime permit me to subscribe myself

Yr obliged & obt serv
Robt Owen.

It will at all times afford me satisfaction to hear of the progress of rational principles in your neighbourhood & any such communication with which you may favour me shall in future meet with immediate attention.

Partie 3 - **Annexes au chapitre 4**

Annexe 16 – Présentation des règles sur lesquelles fondées des colonies autosuffisantes sur le modèle d'Owen, publiée en annexe de son ouvrage *Development of the Principles on which to Establish Self-supporting Colonies* (1841), citées d'après la traduction de Jules Gay (1837).

SYSTÈME RATIONEL DE SOCIÉTÉ.

Soul remède efficace pour apaiser l'agitation présente de la société, et la guérir de ses douleurs physiques et morales en détruisant les causes qui les produisent.

Faits Fondamentaux.

L'homme est un être composé, dont le caractère résulte de son organisation à sa naissance et des effets des circonstances extérieures au milieu desquelles il se trouve placé jusqu'à sa mort ; cette *organisation originelle* et ces *influences extérieures* agissent et réagissent continuellement.

L'homme est *forcé*, par sa constitution originelle, de recevoir *involontairement* ses sentiments et ses convictions.

Ses sentiments et ses convictions, ou la réunion des uns et des autres, sont les moteurs de sa volonté et décident de ses actions.

L'organisation de deux êtres humains, à leur naissance, n'est jamais précisément identique. Il n'y a pas d'art qui puisse, avec le temps, produire en deux individus, une similitude absolue.

Cependant, chaque enfant, sauf le cas de vice organique, peut, selon les circonstances extérieures qui influent dès sa naissance sur sa constitution, devenir ou un être inférieur ou un être supérieur.

CONSTITUTION DE LA NATURE HUMAINE.

Science morale de l'homme.

1. La nature humaine est un composé de *penchants instinctifs*, de *facultés intellectuelles* et de *sentiments moraux*.

2. Ces penchants, facultés et sentiments, se retrouvent en différentes proportions dans chaque individu.

3. Cette diversité est ce qui constitue la différence d'un individu à un autre.

4. Ces éléments de la nature humaine, ainsi que leurs proportions, sont le fait d'un pouvoir inconnu à l'individu ; ils se forment, par conséquent, sans son consentement.

5. Chaque individu naît au milieu de certaines circonstances extérieures, qui agissent sur son organisation originelle pendant la première période de sa vie, impriment leur cachet sur lui et forment son caractère particulier.

6. L'influence de ces circonstances extérieures est modifiée par l'organisation spéciale de l'individu, c'est par là que le caractère distinctif de chacun est formé dans le cours de la vie.

7. Un enfant ne peut décider en quel temps, dans quelle partie du monde, ni de quels parents il naîtra ; dans quelle religion il sera élevé ; quelles manières, coutumes ou latitudes lui seront données, ni de quelles autres circonstances extérieures il sera environné de sa naissance à sa mort.

8. L'individu est organisé de manière que, dans son enfance, il peut être *forcé de recevoir*, soit des idées justes provenant de la connaissance des faits, soit de fausses notions provenant seulement de l'imagination et en opposition avec les faits.

9. L'homme devient nécessairement irrationnel quand, dès son enfance, il reçoit de fausses notions comme des vérités ; et il ne deviendra rationnel que lorsqu'il recouvrera dès l'enfance la vérité sans mélange d'erreur.

10. L'homme jeune peut être élevé de manière à n'acquérir que des habitudes malfaisantes, ou que des habitudes bienfaisantes, ou enfin un mélange des unes et des autres.

11. La croyance de l'homme est l'effet des convictions opérées sur son esprit ; or, ces convictions ne peuvent ni lui être données, ni lui être ôtées selon sa volonté.

12. L'homme aime ce qui lui procure des sensations agréables, et hait ce qui lui en procure de désagréables. Il ne peut savoir avant l'expérience, quelles nouvelles sensations de nouveaux objets produiront en lui.

13. Les sentiments et les convictions de l'individu sont formés par les impressions que les circonstances produisent sur son organisation.

14. La volonté est formée en l'individu par ses sentiments, par ses convictions ou par les deux ensemble : de la sorte, tout son caractère physique, intellectuel et moral est formé indépendamment de lui-même.

15. Les impressions qui, à leur origine, produisent d'agréables sensations, deviennent, si elles continuent au-delà d'un certain temps, indifférentes, désagréables, et enfin pénibles.

16. Quand les impressions se succèdent trop rapidement, elles dissipent, affaiblissent et détériorent le pouvoir moral, intellectuel et physique de l'homme, et diminuent ses jouissances.

17. La santé, le développement et le bonheur de l'homme dépendent d'une culture convenable de toutes ses facultés physiques, intellectuelles et morales, dans la première période de la vie; et d'un exercice convenablement réglé.

18. Un individu est disposé à recevoir ce qu'on appelle communément *un mauvais caractère*, quand il est né avec une proportion défavorable dans les éléments de sa nature, ou quand il a été placé dès sa naissance au milieu de circonstances défavorables.

19. Un homme jouit d'un caractère médiocre; 1^o. Lorsque, créé avec une proportion favorable de ses facultés, il a été placé, dès la naissance, au milieu de circonstances défavorables;

2^o. Quand, avec une proportion défavorable, il a été placé au milieu de circonstances favorables;

30. Lorsque, créé avec une proportion favorable sous certains rapports, et une défavorable sous d'autres, il s'est trouvé placé au milieu de circonstances variées, produisant tantôt de bonnes influences, et tantôt de mauvaises : ce point a été jusqu'à présent le lot de l'humanité.

20. L'homme est propre à recevoir un caractère supérieur quand sa constitution originelle contient les meilleures proportions de ses facultés, et quand les circonstances qui l'entourent à sa naissance et pendant le cours de sa vie, sont de nature à produire seulement des impressions favorables; ou en d'autres termes, quand les lois, les institutions, les coutumes sous lesquelles il vit, sont toutes en harmonie avec les lois de sa nature.

Conditions requises pour le bonheur.

21. Posséder une bonne organisation physique, intellectuelle et morale.

22. Pouvoir se procurer tout ce qui est nécessaire pour conserver cette organisation dans le meilleur état de santé et de bien-être.

23. La meilleure éducation physique, intellectuelle et morale pour tous.

24. Le désir et les moyens d'augmenter sans cesse le bonheur de nos semblables.

25. Le désir et les moyens d'augmenter continuellement la somme de nos connaissances.

26. Le moyen de jouir de la meilleure société, et de nous associer avec ceux pour lesquels nous éprouvons le plus d'estime et d'affection.

27. Les moyens de voyager quand on le désire.

28. Point de superstition, point de terreurs surnaturelles ni autres, à la mort.

29. La pleine liberté d'exprimer notre pensée sur tous les sujets.

30. La plus grande liberté d'action individuelle, compatible avec celle d'autrui et le bien permanent de la société.

31. Pouvoir n'exprimer jamais que la vérité en toute occasion; sentir une charité pure pour les sentiments, les pensées et la conduite de tous les hommes, et éprouver une sincère bienveillance pour chacun d'eux.

32. Vivre dans une société dont les lois, les institutions et l'ordre, soient en harmonie avec les lois de la nature humaine.

Science de la Société.

33. Une connaissance des lois de la nature humaine, provenant de la démonstration des faits qui prouvent que l'homme est un être sociable.

34. Une connaissance pratique du meilleur mode de produire abondamment tout ce qui est nécessaire pour les besoins et l'agrément de la vie humaine.

35. Une connaissance pratique du meilleur mode de distribution de ces produits, pour l'avantage de tous.

36. La connaissance raisonnée et pratique d'une nouvelle combinaison de circonstances, propre à faire un jour de l'enfant, l'homme le plus perfectionné.

37. Une connaissance théorique et pratique des principes par lesquels l'homme peut être gouverné sous ces nouveaux arrangements, comme il convient à un membre de la grande famille humaine.

38. La théorie et la pratique pour fonder, dans les proportions convenables, en un système général, les cinq branches précédentes, de la science de la société, et pour garantir à tous la plus grande somme d'avantages et de jouissances.

Croyance et devoirs de la religion rationnelle.

39. Tous les faits connus indiquent qu'il n'est point d'existence sans une cause externe ou interne. Cette cause souveraine du mouvement et du changement dans l'univers est le pouvoir que les nations diverses ont appelé *Dieu*, *Jéhovah*, *Lord*, etc.; mais les faits qui mettraient à même de définir ce qu'est ce pouvoir sont inconnus à l'homme.

40. Toutes les cérémonies du culte et de l'adoration que l'homme adresse à cette cause, dont l'essence lui est encore si peu connue, proviennent de cette ignorance même; elles ne peuvent être d'aucune utilité réelle en pratique, et il est impossible de rendre les hommes rationnels dans leurs sentiments, pensées ou actions, tant que ces formalités dureront.

41. Le premier devoir de l'homme envers lui-même et envers ses semblables est d'acquérir la connaissance des circonstances qui produisent le mal et celle des circonstances qui produisent le bien; d'exercer tout son pouvoir pour éloigner les premières de la société, et pour créer seulement les dernières autour d'elle.

42. Cette inappréciable science pratique ne peut s'acquérir que par une vue complète de la vérité, par une étude des faits, soigneuse, patiente et dégagée de tout préjugé.

43. L'homme n'atteindra jamais à un état de bonheur parfait et durable, qu'il ne soit entouré, dès son jeune âge, de circonstances extérieures propres à lui inspirer un amour et une affection sincère pour tous ses semblables, à le faire regarder avec bienveillance tout ce qui respire, et à le décider à ne jamais s'exprimer que selon la vérité seule.

44. Ces principes et ces sentiments ne sauraient nous être donnés sous l'empire d'institutions fondées sur la supposition erronée, que l'homme a la liberté de former ses sentiments et ses convictions; ce qui l'en rendrait responsable.

45. Au contraire, sous l'empire des institutions du système rationnel de société, ces principes supérieurs et ces dispositions peuvent être le partage de tous les hommes, excepté dans le cas de maladie organique.

CONSTITUTION GÉNÉRALE DU GOUVERNEMENT.

Lois basées sur la nature humaine.

46. Un gouvernement rationnel peut seul donner le bonheur aux gouvernés :

Il constatera quelle est la nature de l'homme, quelles sont les lois de son organisation et de son existence, de sa naissance à sa mort ; ce qui est nécessaire au bonheur d'un être ainsi formé et se développant ainsi ; et quels sont les meilleurs moyens d'obtenir et d'assurer la possession durable de cela à ses gouvernés.

Il fera les arrangements au moyen desquels les conditions essentielles du bonheur seront pleinement et durablement acquises. Ces lois, peu nombreuses, seront faciles à comprendre, et en parfaite harmonie avec les lois de la nature humaine.

47. Tous auront une égale et entière liberté d'exprimer ce que leur dictera leur conscience.

48. Nul n'aura d'autre moyen que la libre discussion, pour contrôler les opinions ou la croyance des autres.

49. Ni louange, ni blâme, ni récompenses, ni punitions, ne seront donnés pour une croyance quelconque.

50. Tous auront le droit d'exprimer leur opinion sur la cause première, de l'adorer, sous la forme et de la manière la plus convenable à leur conscience, mais non le droit de l'imposer aux autres.

51. Nul ne sera responsable de son organisation physique, intellectuelle ou morale.

52. Nul ne sera responsable des impressions produites sur son organisation par les circonstances extérieures.

53. Personne ne sera responsable des sentiments et des convictions qui, étant en lui, sont pour lui la vérité, tant qu'il les conserve.

Entretien et Éducation de la population.

54. Au moyen des arrangements publics, chacun sera pourvu toute sa vie, des meilleures choses. Ces arrangements donneront aussi la meilleure direction à l'industrie et aux talents de chaque individu.

55. Tous seront élevés de la meilleure manière connue.

56. Tous passeront par un même développement d'éducation, par les mêmes enseignements domestiques, et par les mêmes emplois.

57. Dès leur naissance, les enfants seront sous le soin spécial de la communauté dans laquelle ils sont nés; leurs parents auront toujours un libre accès auprès d'eux.

58. Tous les enfants seront élevés ensemble, comme enfants de même famille. On leur donnera de bonne heure la connaissance de leur nature.

59. L'individu sera encouragé à exprimer ses sentiments et ses convictions, c'est-à-dire, à ne parler que d'après la vérité, en toute occasion.

60. Les deux sexes recevront une éducation égale; ils jouiront de la liberté personnelle et des droits égaux; leur union naîtra de la sympathie naturelle, n'étant plus influencée par des distinctions ou des inégalités artificielles.

61. Dans le système rationnel de société, les enfants ayant été élevés de manière à n'acquérir que des habitudes et des sentiments basés sur les lois de la nature, la propriété privée deviendra inutile et même impossible.

62. Les membres de cette communauté étant instruits, dès l'enfance, à agir conformément à leur nature, et entourés

de circonstances en harmonie avec elle, il n'y aura plus ni punitions, ni récompenses individuelles.

63. La société ne sera pas, comme aujourd'hui, composée de simples familles, mais de communautés ou associations d'hommes, femmes et enfants, de trois cents à deux mille individus, suivant les localités.

64. Quand les nouvelles communautés seront nombreuses, elles se grouperont entre elles, pour former des congrès, à l'effet de régler leurs affaires générales.

65. Chaque communauté devra posséder autour d'elle, un territoire suffisant aux besoins de ses membres.

66. Ces communautés seront organisées de manière à procurer à tous leurs membres, tous les avantages possibles et à établir, de l'une à l'autre, les rapports les plus intimes.

Conseil de Gouvernement.

67. Chaque communauté sera gouvernée par un conseil général, et chaque département sera sous la direction d'un comité, formé de membres du conseil et choisi par lui.

68. Jusqu'à ce que tous les membres de la communauté n'aient été rendus capables de prendre part aux fonctions du conseil général, il y aura choix ou élection d'individus pour en faire partie.

69. Les devoirs du conseil général seront de gouverner tout ce qui sera du ressort de la communauté, d'organiser les divers départements de production et de distribution des richesses, de formation des caractères; d'éloigner toutes les circonstances défavorables au bonheur, en faisant naître les plus favorables connues; d'envoyer des délégués aux divers cercles de communautés; de favoriser le système rationnel sur toute la terre.

70. Dans l'intérieur de la communauté, le conseil général aura plein pouvoir, aussi long-temps qu'il agira en

conformité avec les lois de la nature humaine , qui sont la règle unique.

71. Des individus élevés et placés conformément à leur nature , doivent nécessairement penser et agir rationnellement , excepté dans le cas de maladie mentale ou physique ; et alors , le conseil les placera dans des hospices , jusqu'à ce que les traitements les mieux conçus et les plus doux aient opéré leur guérison.

72. Lorsqu'il le jugera convenable , le conseil appellera devant lui les capacités pratiques et prendra leur avis.

73. Si le conseil entreprenait d'enfreindre les lois de la nature humaine , les anciens de la communauté convoqueraient une assemblée générale de tous les membres au-dessus de seize ans : cette assemblée examinerait la conduite du conseil général et en nommerait un nouveau s'il y avait lieu.

74. Tous autres différents , s'il en survient dans ces communautés , seront immédiatement terminés à l'amiable entre les parties , par la décision des trois plus anciens parmi les membres du conseil ; et si la dissidence existait entre des membres du conseil , par les trois membres qui en seraient sortis les derniers .

CONCLUSIONS.

75. Le moment d'introduire le système rationnel , ce système qui doit régénérer le caractère de l'homme , diriger la population du globe vers l'union , la paix , le bonheur , et toutes les améliorations progressives , est venu ; et nul pouvoir humain ne saurait empêcher ce changement.

76. Les gouvernements seront bientôt contraints , dans l'intérêt même de leur conservation , d'adopter ce système supérieur , pour se préserver des révolutions , de la guerre et de la ruine.

77. Ce changement déracinera et détruira entièrement le vieux système d'ignorance, de pauvreté, de compétition, de lutte entre les individus et de guerre entre les nations. Il introduira, à la place, un état de société, dans lequel la compétition, les querelles et les guerres cesseront pour toujours, et où tous les hommes seront élevés, dès leur enfance, dans l'idée de ne travailler qu'à se rendre mutuellement heureux.

78. Pour l'établissement de ce système, il faut convaincre les gouvernements de la vérité des principes sur lesquels il est fondé. Il faut aussi qu'un nombre suffisant d'individus soient imbus de l'esprit de charité, d'affection et de philanthropie véritables qui le caractérise, et soient instruits de la meilleure manière de le mettre en pratique; il faut qu'ils possèdent la patience et la persévérance pour vaincre les obstacles que les préjugés opposent à leur progrès; il faut, pardessus tout, qu'ils soient unis, qu'ils aient pleine confiance les uns dans les autres, et qu'ils soient animés d'un même cœur et d'un même esprit.

79. Sous le présent système de société, qui est contraire aux vues de la nature, les circonstances extérieures sont : dix-neuf fois sur vingt, et même quatre-vingt-dix-neuf fois sur cent, d'un caractère inférieur et vicieux. Sous le système rationnel de société, au contraire, toutes les circonstances qui dépendent du fait de l'homme, seront d'un caractère supérieur et bon.

80. Sous l'influence des arrangements religieux, politiques, commerciaux et domestiques de la Grande-Bretagne, deux cent cinquante individus ne peuvent vivre confortablement sur un mille carré de terrain, tandis que sous le système proposé, avec beaucoup moins de travail et de capitaux, cinq cents pourraient immédiatement vivre dans l'abondance; et dans quelques années, lorsque les nouveaux arrangements seront arrivés à maturité, mille, quinze cents ou plus, pourront vivre sur chaque mille carré d'un sol de bonne qualité.

Annexe 17 – Lettre de Robert Owen à l'éditeur du Limerick Chronicle sur ses croyances religieuses

Limerick, Jan. 27, 1823.

SIR—In your paper of Saturday last, I am requested by a gentleman who signed himself "A Citizen," to explain what my views are respecting religion, with the arrangements for its support in the intended colonies—and, as I feel the time is arrived for this developement, I meet his wishes with pleasure.

I have often been urged to declare myself in favour of some one sect of religion, and it is, perhaps, due to the public, that I should now explain my sentiments on this important subject.

For nearly forty years I have studied the religious systems of the world, with the most sincere desire to discover one that was devoid of error—one to which my mind and soul could consent; but the more I have examined the faiths, and practices which they have produced, the more error in each has been made manifest to me; and I am now prepared to say, that all, without a single exception, contain too much error to be of any utility in the present advanced state of the human mind. There are truths in each religion, as well as errors in all; but, if I have not been too much prejudiced by early education, and surrounding circumstances, to judge impartially between them, there are more valuable truths in the Christian Scriptures than in others,—but a religion to be pure and undefiled, and to produce the proper effect upon the life and conduct of every human being, and to become universal, must be so true, that all who run may read, and so reading, may fully comprehend. A religion of this character, must be devoid of forms, ceremonies, and mysteries, for those constitute the errors of all the existing systems, and of all those which have hitherto created anger, and produced violence and bloodshed throughout society. A religion devoid of error will not depend for its support upon any name whatever. No name, not even Deity itself, can make falsehood true—no name, not even Deity itself, can make truth into falsehood. A pure and genuine religion, therefore, will not require for its support, or for its universal promulgation and acceptance by the human race, any name whatever, nor ought, except the irresistible truths which it shall contain. Such religion will possess whatever is valuable in each, and exclude whatever is erroneous in all, and, in due time, a religion of this character, freed from every inconsistency, shall be promulgated. Then will the world be in possession of principles which, without any exception, will produce corresponding practices, and then all shall see, face to face, clearly and distinctly, and no longer through a glass, darkly. In the mean time, however, while the change shall be gradually

working in the minds of those who have been compelled to receive error, mixed with truth, it is intended, that no violence shall be offered to the conscience of any one, and that, in the proposed new villages, full provision shall be made for the performance of religious worship, according to the practices of the country in which the villages shall be situated. That to the extent which the present form of society admits, there shall be full liberty of conscience for every individual, and all will be recommended to have real charity for their brethren of the human race, who have been made to differ from them in opinions, which all must now perceive have been formed by the geographical circumstances of their birth.

Ample provision will also be made by the inhabitants of each village for the support, in the highest comfort, of the ministers of the respective persuasions, and, in consequence, all of them will be held in estimation, according to their real usefulness in the community.

To me it appears, that this mode of proceeding can alone calm the present irritations of society, and prepare the human mind for the reception of that divine charity, which, when received, will insure peace to every bosom, and extend its beneficial influence over the whole earth.

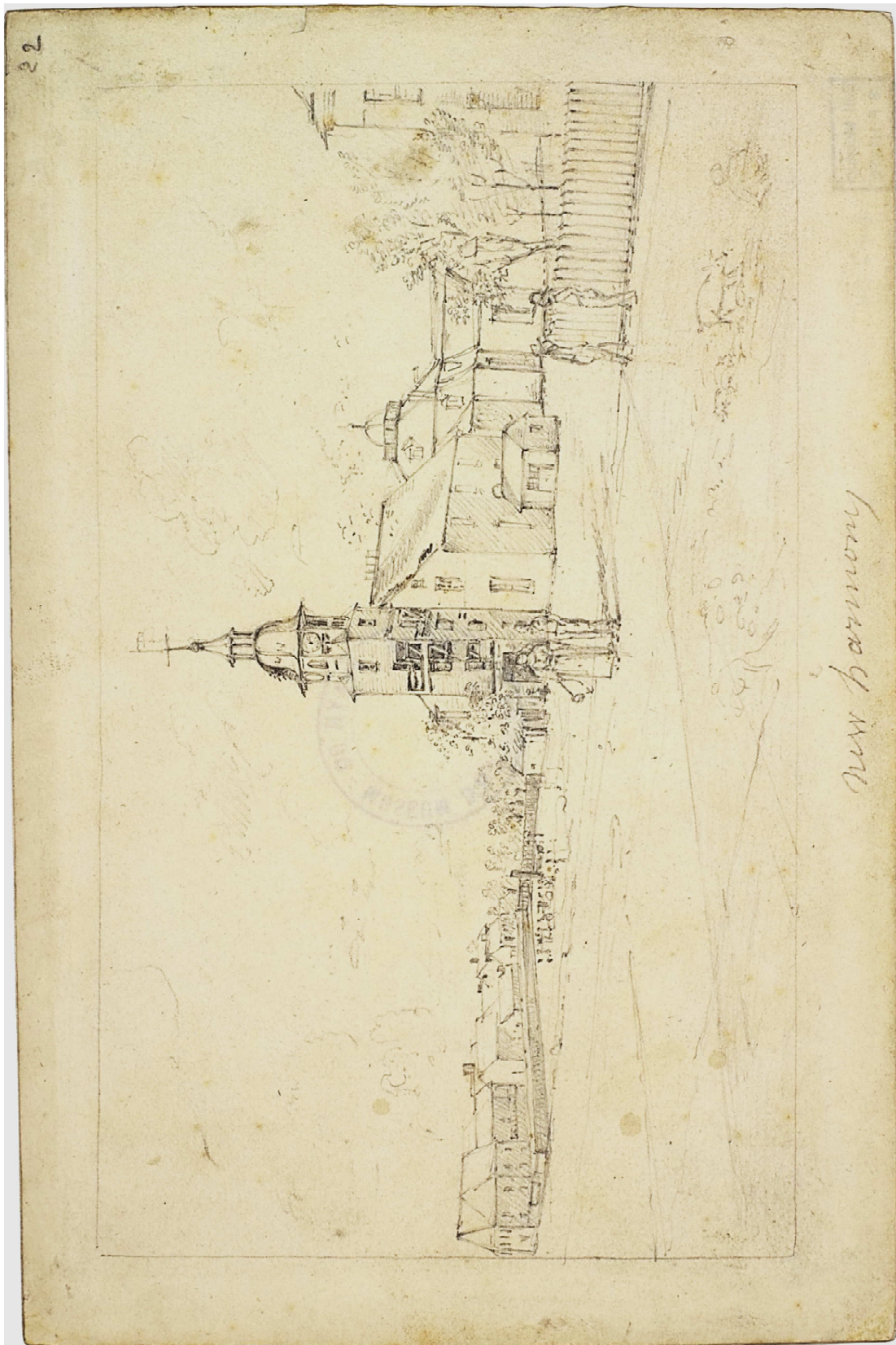
ROBERT OWEN.

Annexe 18 – Croquis de New Harmony par Charles Alexandre Lesueur.

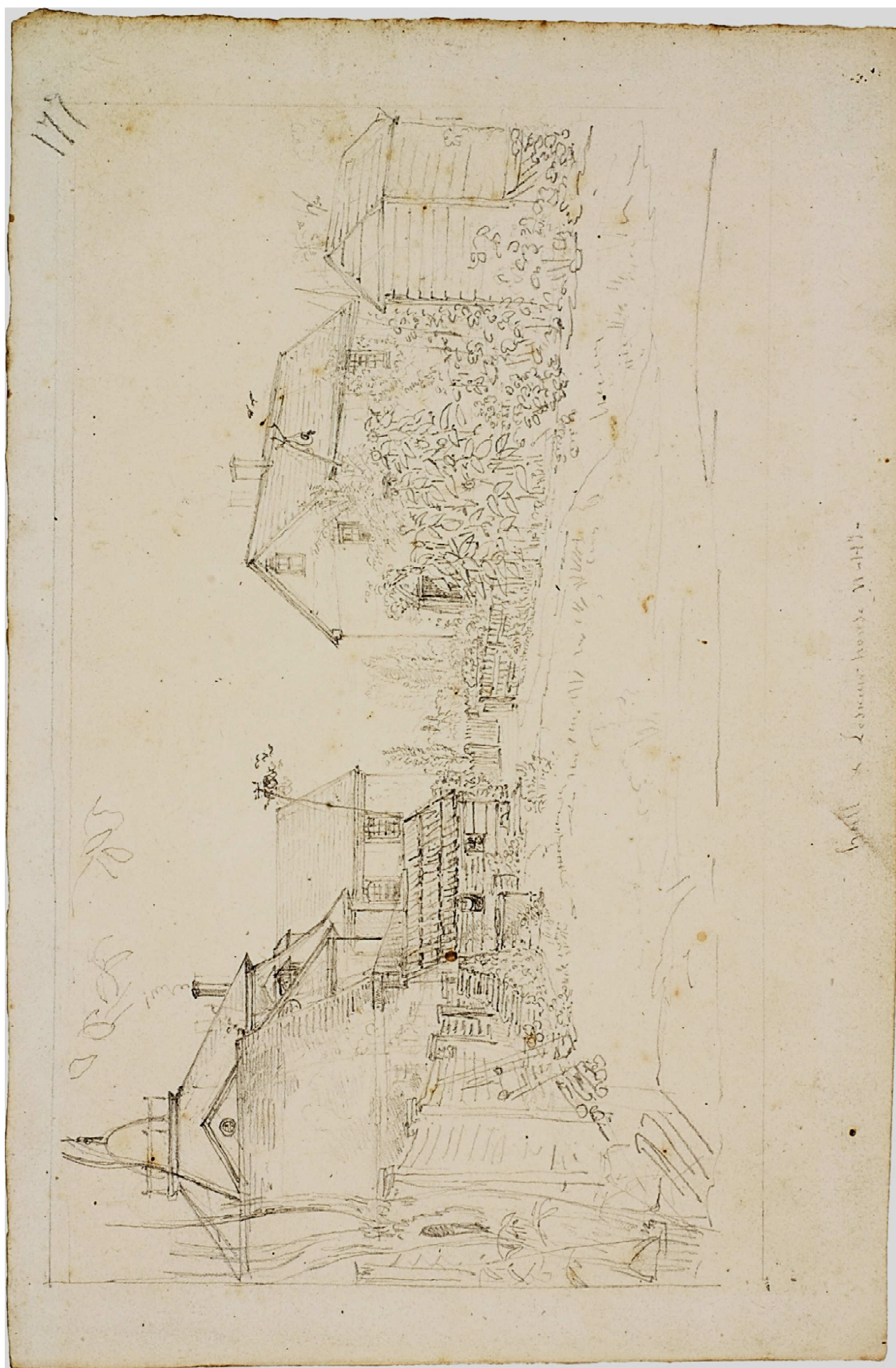


The layout of New Harmony, Indiana (Lesueur)

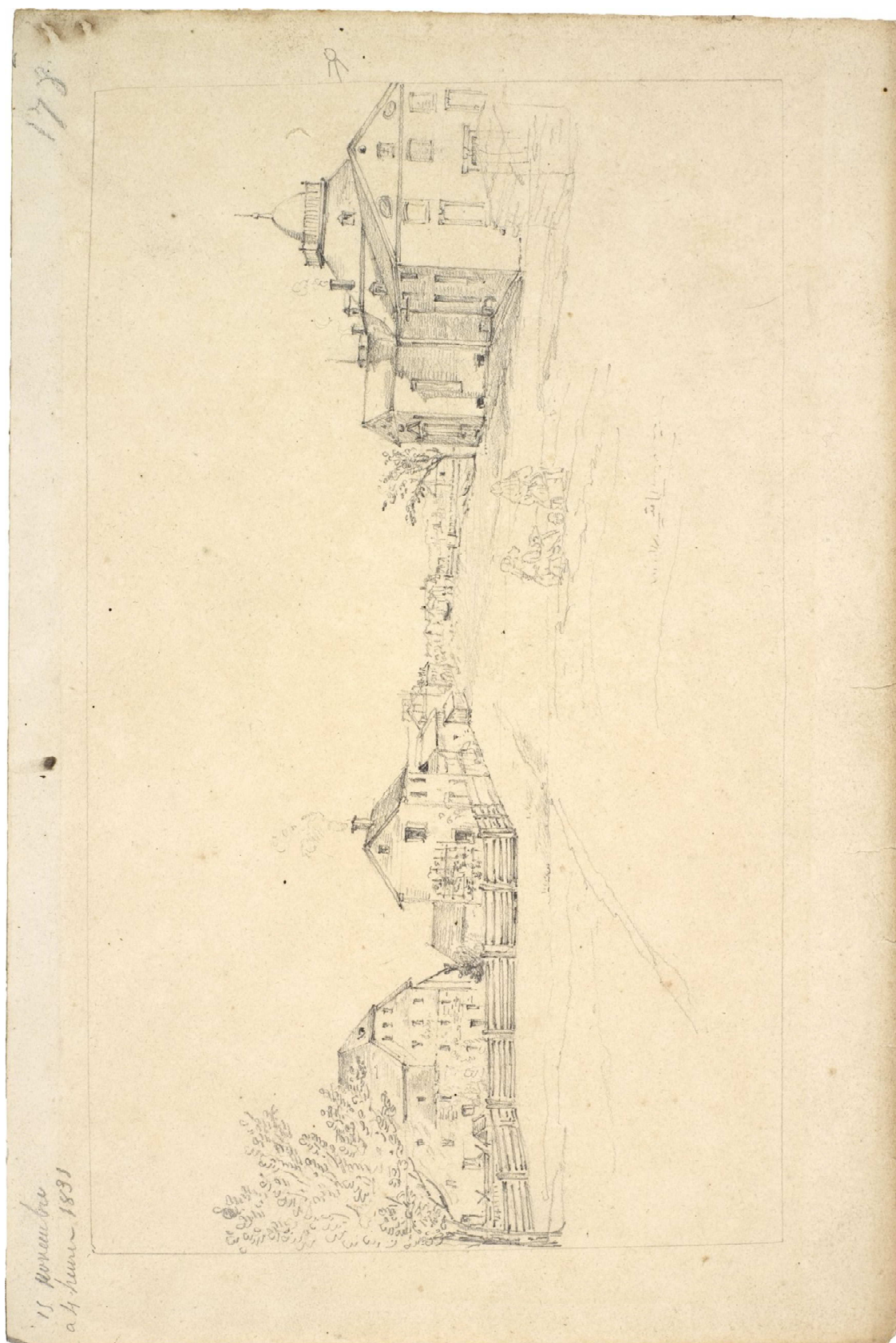
Plan de New Harmony par Charles Alexandre Lesueur



Eglise de New Harmony par Charles Alexandre Lesueur,
Mai 1826, Muséum d'Histoire Naturelle, Le Havre (France)



New Harmony- Le Hall et la maison de Lesueur, par Charles Alexandre Lesueur, 1831,
Muséum d'Histoire Naturelle, Le Havre (France)



**Le Hall et la maison de Lesueur (sur la gauche du dessin) à New Harmony,
par Charles Alexandre Lesueur, 15 novembre 1831,
Muséum d'Histoire Naturelle, Le Havre (France)**



Vue de New Harmony par Charles Alexandre Lesueur, **Muséum d'histoire naturelle du Havre**, INV 41 164, in **Christian Marbach**, « Peuplement des cités idéales », *Bulletin de la Sabix* [En ligne], 38 | 2005, mis en ligne le 22 novembre 2010, consulté le 20 août 2013. URL : <http://sabix.revues.org/504>

Annexe 19 – Détail du premier plan d'organisation des colonies de Robert Owen dans son *Report to the Committee of the Association for the Relief of the Manufacturing and Labouring Poor* (1817), reproduit en annexe de son autobiographie (1858, p.58)

The drawing exhibits, in the foreground, an establishment, with its appendages and appropriate quantity of land ; and at due distances, other villages of a similar description.

Squares of buildings are here represented sufficient to accommodate about 1,200 persons each ; and surrounded by a quantity of land, from 1000 to 1500 acres.

Within the squares are public buildings, which divide them into parallelograms.

The central building contains a public kitchen, mess-rooms, and all the accommodation necessary to economical and comfortable cooking and eating.

To the right of this is a building, of which the ground-floor will form the infant school, and the other a lecture-room and a place of worship.

The building to the left contains a school for the elder children, and a committee-room on the ground floor ; above, a library and a room for adults.

In the vacant space within the squares, are enclosed grounds for exercise and recreation : these enclosures are supposed to have trees planted in them.

It is intended that three sides of each square shall be lodging houses, chiefly for the married, consisting of four rooms in each ; each room to be sufficiently large to accommodate a man, his wife, and two children.

The fourth side is designed for dormitories for all the children exceeding two in a family, or above three years of age.

In the centre of this side of the square are apartments for those who superintend the dormitories : at one extremity of it the infirmary ; and at the other a building for the accommodation of strangers who may come from a distance to see their friends and relatives.

In the centres of two sides of the squares are apartments for general superintendents, clergyman, schoolmasters, surgeon &c. ; and in the third are store-rooms for all the articles required for the use of the establishment.

On the outside, and at the back of the houses around the squares, are gardens, bounded by roads. .

Immediately beyond these, on one side, are buildings for mechanical and manufacturing purposes. The slaughter-house, stabling, &c., to be separated from the establishment by plantations.

At the other side are offices for washing, bleaching, &c. ; and at a still greater distance from the squares, are some of the farming establishments, with conveniencies for malting, brewing, and corn-mills, &c. : around these are cultivated enclosures, pasture-land, &c., the hedge-rows of which are planted with fruit-trees.

The plan represented is on a scale considered to be sufficient to accommodate about 1200 persons.

Annexe 20 – Présentation de l'organisation de la colonie modèle par Robert Owen, tiré de Owen, R. (1841). *A Development of the Principles on which to Establish Self-supporting Colonies*, Londres : The Home Colonization Society, pp.37-40

GENERAL ARRANGEMENTS OF THE PROPOSED HOME COLONIES.

It is proposed that each establishment of these Colonies shall, in the first instance, be the property of a joint-stock company ; who,—having purchased the land, and erected thereon the requisite buildings, and furnished the same,—shall let the whole, upon lease, to a company of tenants ; the latter having power gradually to fine down the rents, and ultimately to become the owners, at a stipulated price, to be agreed on between the parties.

Each Colony to be devised to accommodate, ultimately, and permanently, from 2000 to 2500 individuals, of the usual proportions of men, women, and children ; but to be so arranged as — without disturbing any of the permanent walls or buildings — to afford accommodation, temporarily, and during the transition state, to a larger number, as will be hereafter explained.

The following is a general description of the buildings and other arrangements of the Colony.

On a suitable site,—as nearly as may be in the centre of An

ESTATE, of about 2000 or 3000 acres,—will be erected the DWELLING-HOUSES and PUBLIC BUILDINGS of the Colonists; forming A SQUARE, inclosing an area of about sixty-five acres.

In front of each side of the square will be (as shown in the block and ground plan) a noble TERRACE or ESPLANADE, of one hundred feet in breadth, and raised twelve feet from the natural surface of the surrounding land. The length of each side, including the Terrace, to be about 1650 feet.

At each corner of the square will be a large building, designed for A SCHOOL or COLLEGE,—the four constituting AN UNIVERSITY, for the scientific formation of a superior character—physical, intellectual, moral, and practical—from infancy to maturity.

In the centre of each side of the square will be a magnificent building, containing ASSEMBLY and CONCERT ROOMS, LIBRARIES and READING ROOMS, MUSEUMS, LABORATORIES, ARTISTS' ROOMS, LECTURE ROOMS, COMMITTEE ROOMS, PLACES of WORSHIP, &c. &c.

In the space between these latter buildings and those first described, will be the private DWELLING-HOUSES, 18 in number, on each side of the square. The general plan of these is, —

1st, *A Basement Story*, to be used as STORE-ROOMS, &c.; as well as for a variety of purposes connected with the apparatus for WARMING and VENTILATING, and supplying with HOT and COLD WATER, and artificial LIGHT, every apartment throughout the whole square.

2d, *Above the Basement*, will be three other stories, forming suites of APARTMENTS for the adult residents. On each of these stories or flats, will be eight rooms, with closets, and other conveniences; and a spacious geometrical STAIRCASE will run up the centre of each house.

3d, *Over these*, and forming a fifth story, will be DORMITORIES, and other apartments, for the children and young persons.

Projecting into the ^{interior} corner of the square, from the public buildings forming the centre of each side, will be four magnificent buildings, designed for REFECTORIES; attached to which, will be the KITCHENS. These buildings will contain arrangements much superior

in convenience and economy, for the purposes in view, to those of the best Club-Houses in London or Paris.

Attached to these, there will be four massive TOWERS, each 240 feet in height, and of proportionate dimensions in other respects. Among other purposes, these are designed to carry off the smoke and effluvia of the fires below, used for heating the buildings, cooking, &c. They will, also, serve as OBSERVATORIES for astronomical, meteorological, and other purposes; and from near their summits will be reflected, at night, by powerful apparatus, the new Koniaphostic LIGHT, which will brilliantly illuminate the whole square.

Within the square, also, and conveniently situated with regard to the other buildings, will be GYMNASIA, and BATHS.

In the centre of the square will be an immense CONSERVATORY, of light and elegant construction, with forcing-houses, &c. attached.

The whole of the interior of the square, will be laid out in the most tasteful and scientific manner, as PLEASURE GROUNDS; containing Botanical, Horticultural, and Floricultural GARDENS; together with plots of land for experimental agriculture; the whole intersected with spacious GRAVEL-WALKS, affording abundant space for cheerful out-door exercise.

Running entirely round the interior of the square, at a short distance from the houses, will be a spacious open CLOISTER; by means of which, access may be had to any apartment in the whole of this extensive range of buildings, without going from under cover; and which will also present opportunities for sheltered exercise in very hot, or wet, weather.

The surface of the grounds, in the interior of the square, will be nearly on a level with the floor of the *basement story*; whilst the *roof of the cloister*, which will be flat for the purpose of walking upon in fine weather, will be upon a level with the floor of the *first story* of the dwelling apartments.

Round the exterior of the square, as already explained, will be a noble ESPLANADE or TERRACE, 100 feet broad, and raised twelve feet from the natural surface of the land; but on a level with the first or ground floor of the dwelling-houses. From this terrace will be

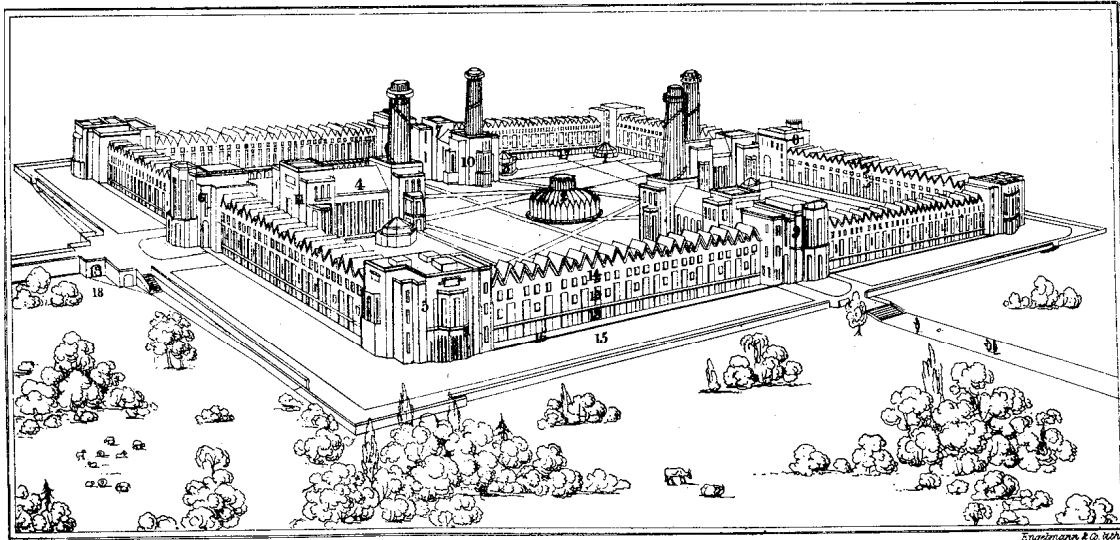
seen portions of THE ESTATE belonging to the Colony, laid out in FOUR FARMS, but having the appearance of A PARK, with its hills and dales, its wood and water. These farms will be cultivated, as far as population will admit, with the spade; and kept in the best order and most productive state.

About the centre of each farm will be the requisite AGRICULTURAL BUILDINGS, &c.

At a convenient distance from the square, surrounded by plantations, will be MANUFACTORIES, containing the most complete machinery, with mechanical power, for accomplishing, in the best manner known, such Manufactures and Trades as may be best suited to the locality and other circumstances of the colony; and to make these arrangements complete, there must also be, at some distance without the square, but *within* the territory of the colony, GAS APPARATUS; WASHING, BLEACHING, and DYEING ARRANGEMENTS; with STABLES and COACH-HOUSES; and, in a more remote situation, a SLAUGHTER-HOUSE, as long as it shall be found to be advantageous or necessary for health or happiness, for any portion of the colonists to subsist on animal food.

This, then, is a general description of what may be fairly termed A MAGNIFICENT PALACE, containing within itself the advantages of A METROPOLIS, AN UNIVERSITY, and A COUNTRY RESIDENCE, without any of their disadvantages, and situated within A BEAUTIFUL PARK of 2000 or 3000 acres; the whole most scientifically arranged, and placing within the reach of its inhabitants, at a very moderate annual expenditure, arrangements far superior to any now known, for the production and distribution of wealth, the formation of character, and the government of the population, with innumerable advantages never yet possessed by the most favoured individuals in any age or country.

Annexe 21 – Croquis légendé de Stedman Whitwell tiré de Whitwell, T. S. (1830). *Description of an Architectural Model From a Design by Stedman Whitwell, Esq. for a Community Upon a Principle of United Interests, as Advocated by Robert Owen, Esq.,* London: Hurst Chance & Co.



DESIGN

*for a Community of 2000 Persons founded upon a principle
Commended by Plato, Lord Bacon and Sir Thomas More*

EXPLANATION OF THE PARTS NUMBERED ON THE PLATE

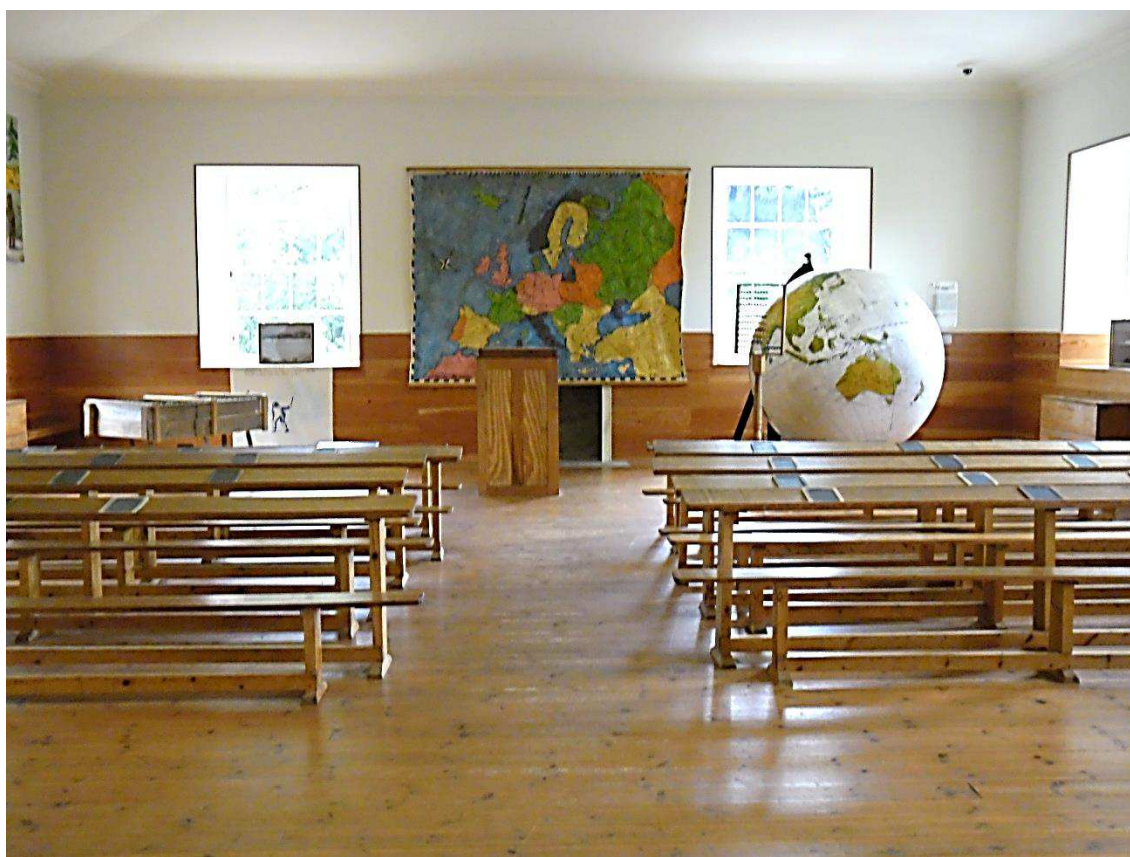
- 1 Gymnasiums or Covered Places for Exercise, attached to the Schools and Infirmary.
- 2 Conservatory, in the midst of Gardens botanically arranged.
- 3 Baths, warm and cold, of which there are four for the Males, and four for the Females.
- 4 Dining Halls, with Kitchens, &c. beneath them.
- 5 Angle Buildings, occupied by the Schools for Infants, Children, and Youths, and the Infirmary; on the ground floors are Conversation-rooms for Adults.
- 6 Library, Detached Reading Rooms, Bookbindery, Printing Office, &c.
- 7 Ballroom and Music rooms.
- 8 Theatre for Lectures, Exhibitions, Discussions, &c. with Laboratory, Small Library, &c.
- 9 Museum, with Library of Description and Reference, Rooms for preparing Specimens, &c.
- 10 The Brew-houses, Bakehouses, Wash-houses, Laundries, &c. arranged round the Bases of the Towers.
- 11 The Refectories for the infants and children are on each side of the Vestibules of the Dining halls.
- 12 The Illuminators of the Establishment, Clock-towers, and Observatories, and from the elevated summits of which all the smoke and vitiated air of the buildings is discharged into the atmosphere.
- 13 Suites of adult sitting rooms and chambers.
- 14 Suites of Chambers, which may be easily and quickly made of any dimensions required; Dormitories for the Unmarried and Children.
- 15 Esplanade one hundred feet wide, about twelve feet above the natural surface.
- 16 Paved Footpath.
- 17 The Arcade and its Terrace, giving both a covered and an open communication with every part of the building.
- 18 Sub-way leading to the Kitchens, &c. and along which meat, vegetables, coals, &c. are conveyed to the Stores, and dust and refuse brought out.

Annexe 22 – Maquette de New Harmony réalisée par Rémi Munier, mise en couleur par Alain Tchillinguirian, en 2000 pour la Saline Royale d'Arc et Senans et son exposition « à la recherche de la cité idéale ». D'après un dessin d'architecture de Stedman Whitwell. Photographie de Gilles Abegg, in **Christian Marbach**, « Peuplement des cités idéales », *Bulletin de la Sabix* [En ligne], 38 | 2005, mis en ligne le 22 novembre 2010, consulté le 20 août 2013. URL : <http://sabix.revues.org/504>



Partie 4 – New Lanark aujourd’hui : la salle de classe reconstituée

Annexe 23 - La Salle de classe



Annexe 24 - La galerie des musiciens



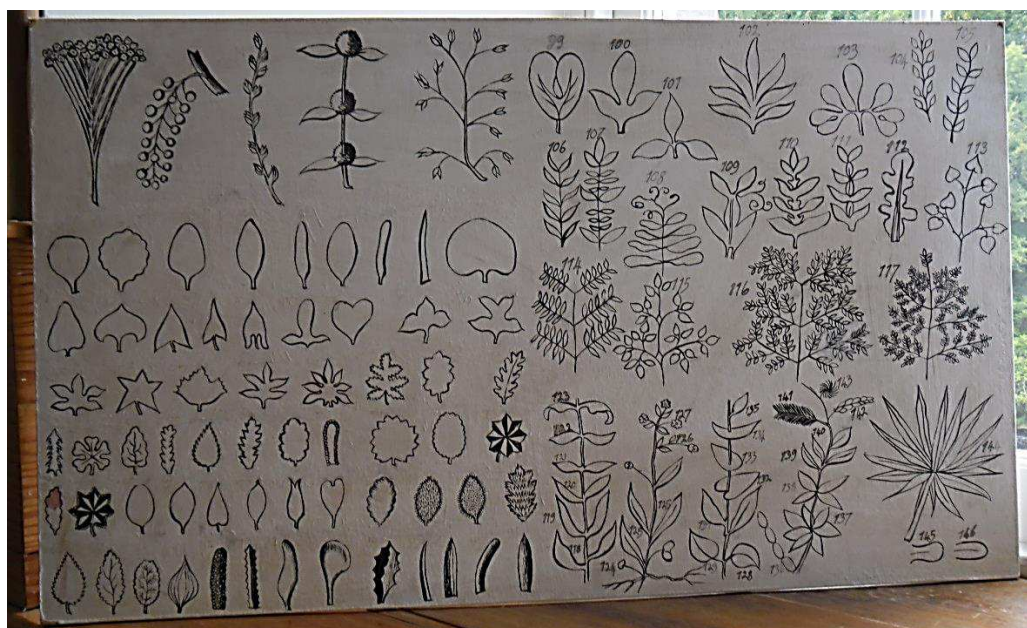
Annexe 25 - Le globe et la frise zoologique



Annexe 26 - Frises historiques



Annexe 27 - Planches de botanique et zoologie



Annexe 28 - Partition collective



Annexe 29 - Planche de géométrie

