

Of all the inhabitants in 1779, 1 in $30\frac{3}{4}$ died annually; in 1780, 1 in $34\frac{1}{2}$; in 1781, 1 in $38\frac{3}{8}$; in 1782, 1 in 38; in 1783, 1 in $43\frac{1}{7}$; in 1784, 1 in $50\frac{1}{8}$; in 1785, 1 in $37\frac{1}{7}$; in 1786, 1 in $37\frac{5}{8}$; in 1787, 1 in 44. The average of the nine years being 1 in $39\frac{1}{4}$ nearly.

N.B.—This Table makes the mortality greater than it actually is, as the calculations from 1779 to 1787 inclusive were made from the number of inhabitants which existed in January 1780; whereas there was an increase of 1000 in that period.

“The deaths which occurred from accidents were, in 1779, 4; in 1780, 3; in 1781, 5; in 1782, 4; in 1783, 3; in 1784, 5; in 1785, 4; in 1786, 2; and in 1787, 2.”

From Table IX. it appears that the most healthy period of human life is from 10 to 15 years of age; and that health declines in the following order—namely, between 20 and 30, 15 and 20, 5 and 10, 30 and 40, 40 and 50, 50 and 60, 60 and 70, under 5, 70 and 80, 80 and 90, 90 and 100.

In the month of April 1796 a survey was made of Carlisle by Mr. Johnston, under the direction of the editors of Hutchinson's *History of Cumberland*; and the two parishes of St. Mary and St. Cuthbert were found to contain 1587 houses, 2616 families, and 10,289 inhabitants. It therefore appears that the increase in the population of Carlisle from 1780 to 1796 was 2612, and from 1788 to 1796 of 1612 persons.

CHAPTER IV.

HISTORY OF THE JAIL-FEVER IN CARLISLE—THE FOUNDATION OF THE
CARLISLE DISPENSARY—MEDICAL CASES—HUMAN MONSTROSITY.

[I]N the beginning of April 1781, there was an outbreak of typhus fever in Carlisle, resembling in character the jail-fever or *Typhus carcerum* of authors. This fever made its appearance in Ricker-gate, a suburban district on the north side, in a house which contained about half-a-dozen very poor families; the rooms were exceedingly small, and in order to diminish the window-tax, every window that even poverty could dispense with, was shut up: hence stagnation of air, which was rendered still more noxious by the filth and uncleanness of the people. “One of the persons affected with fever in this house was a weaver, who, on his recovery, went to his usual employment at a large workshop, where he communicated the disease to his fellow-weavers, and from thence the fever spread all over the town.” The disease prevailed “amongst the common and lower ranks of people, and more especially those who lived in narrow, close, confined lanes, and in small crowded apartments. It continued for twelve months, and affected adults more frequently than children; the infirm

than the robust; women than men; and the married were more subject to it than the single. It often seized a whole family, and was worse in the suburbs than within the walls of the city."

About 600 persons took the disease—that is, about 1 in 11 or 12 of all the inhabitants of Carlisle,* and 1 in 10 nearly of all who were attacked, died. Of the 52 deaths there were 3 boys, 3 bachelors, 15 husbands, 3 girls, 2 maids, 21 wives, and 5 widows; so that two-thirds of those who succumbed to the fever were married people.

As there was no evidence to show that the fever was imported into the house in Rickergate, the fever was believed to have its origin in this nest of filth and contamination. The same view had been entertained of the disease as observed in jails, or very crowded hospitals, in the two preceding centuries; hence Dr. Heysham's definition of the epidemic in Carlisle—*Typhus carcerum*.

Dr. Heysham, in 1782, published an essay on the subject—"An account of Jail-Fever or *Typhus carcerum*, as it appeared at Carlisle in the year 1781," in which he states that, as this form of fever was already well known, he would not have obtruded his opinions upon public attention, had not the treatment of the disease which he adopted and successfully pursued appeared to

* Dr. Heysham had ascertained that "in January 1780, there were 6299 inhabitants in Carlisle; of these 1019 were husbands, 1091 were wives; 91 were widowers; 408 were widows; and the remainder were either children, bachelors, or maids."

differ from what had hitherto obtained in general practice. This difference consisted in the more early application, and in the much freer use, of bark and port wine.

He described the symptoms*—headache, nausea, lassitude, weakness and weariness, dejection of spirits, thirst, disturbed sleep, followed by incoherent talk; pulse frequent and feeble, tongue dry and brown, and, when thrust out of the mouth for examination, unsteady and tremulous. In the worst cases, those which proved fatal, the pain of the head increased, a putrid colliquative looseness, etc., comes on. "Sometimes *petechiæ* appear in different parts of the body, and in some cases the whole surface of the body is covered with a scarlet efflorescence, which, however, soon disappears. The pulse becomes weaker and quicker, from 130 to 150 strokes in a minute; the patient is now altogether insensible; the excretions are voided without consciousness; he knows not the bystanders; the delirium is, however, of the low, not of the furious or outrageous kind; his muscles become flaccid, he gathers his bedclothes, and is affected with *subsultus tendinum*, convulsive startings and twitchings of the whole body, cold extremities; then the livid and cadaverous appearance, ending in death."

* Heysham gave Cullen's nosological character of typhus—"Morbus contagiosus; calor parum auctus; pulsus parvus, debilis, plerumque frequens; urina parum mutata; sensorii functiones plurimum turbata, vires multum imminuta."

There was a diarrhoea or cough occasionally in the course of the fever, but no relapse. "Patients died from the 5th or 6th day to the 16th or 17th days. The salutary terminations occurred as frequently on the *non-critical* as on the *critical* days. In one case no visible change for the better took place till the 18th day." Thus the doctrine of critical days could not be applied to this form of fever.

The salutary termination of the disease depended on the constitution of the patient, and the early administration of wine.

The *petechiæ* did not portend imminent danger, nor did a bleeding of the nose; moreover, Heysham never observed either *petechiæ* or *scarlet efflorescence*, or a *bleeding of the nose*, in patients who began to take the *bark* and *wine* early in the disease.

He believed in the extreme contagiousness of the fever, and "that it was the offspring of filth, nastiness, and confined air in rooms crowded with many inhabitants." He maintained that the *Human Effluvia*, subtle, active, and virulently poisonous, often originated in ships, hospitals, and jails; in proof of which he instanced the Assizes held at Oxford in the year 1577, when *putrid effluvia* arising from the prisoners at the bar infected a great part of the Court with a pestilential fever, of which upwards of 300 persons died. Also the more melancholy instance at the Sessions of the Old Bailey in 1750, where 100 prisoners were tried, "who were all, during the sitting of the Court, either placed

at the bar or confined in two small rooms which opened into the Court. Great numbers present in the Court were almost instantly seized with the jail-fever, and above 40 died of it; but the most remarkable circumstance was, that those only were affected who were on the left-hand side of the Lord Mayor,* a stream of air being directed to that side of the room, in consequence of a window being opened on the other. All on the right-hand side escaped, the *putrid effluvia* being wafted from them to the opposite side."

"In both these instances, it does not appear that the prisoners, either before or after their trial, were particularly affected with any distemper, resembling that which seized so many, and of which they were supposed to have communicated the contagion." To account for the curious fact of the prisoners escaping from the dangers of their own *effluvia*, whilst the fact of their coming into court endangered so many healthy lives, Heysham observed that many of the prisoners had been long confined, and were accustomed to filth and uncleanness, in conse-

* "The persons of chief note who were in Court and died of the fever were Sir Samuel Pennant, Lord Mayor for that year; Sir Thomas Abney, one of the Justices of the Common Pleas; Charles Clarke, Esq., one of the Barons of the Exchequer; and Sir Daniel Lambert, a London Alderman. Of less note, a gentleman at the bar, two students, one of the under-sheriffs, an officer of Lord Chief-Justice Lee, several of the jury, and about forty other persons whom business or curiosity had brought thither."

quence of which the *putrid effluvia* would be generated gradually, and for a long time be constantly applied to their bodies in small quantities, till it at length became, as it were, their natural atmosphere, when they would no more feel its influence than the *tanner* perceives the smell of his tanyard, or the *chandler* the smell of his putrid tallow." He then went on to show that the human body is possessed of the power of accommodating itself, or resisting the effects of many active and noxious agencies, when they are constantly and gradually applied in small quantities, which would injure many of the functions of life, nay, even in some cases, bring on death, were they given in large doses at first. He illustrated this hypothesis by the effects of opium, hemlock, and tobacco, on the human body, and showed that a person will in time acquire the habit of taking without danger a quantity at one dose which would either injure the health, or even destroy the life, of another person.

The TREATMENT of the fever.—Dr. Heysham relied on *port-wine* and *cinchona* or *bark* given in large quantities. If not the first* to advocate stimulants, Heysham prescribed much

* Dr. Heysham, though not original in his views of treating typhus by stimuli, deserved much credit for setting this example in these northern parts of the island. At the beginning of the century (1700), F. Hoffman, the famous professor at Halle, had recommended nourishing food and good wines for typhus. Among British practitioners, Strother of London (1729), Rogers of Cork (1734), and the better known Huxham of London (1739 and 1757), had all

larger doses than any physician who preceded him in the century. Sir John Pringle, the boldest advocate for wine, seldom gave a bottle in the day, but Heysham ordered from one to two bottles and a half of port in the same period of time, and always with advantage. The doses of bark prescribed by Heysham were also nearly double those which Pringle usually exhibited. In no case did Heysham see any bad effects from the administration of the fullest dose of wine and cinchona. He gave the wine pure, or mixed with cold water for thirst.

"By a copious and liberal use of tonics, cordials, stimulants, or say the wine and bark, the pulse became slower and stronger, the thirst and pain of head abated, the delirium was removed, and the patient got refreshing sleep."

He gave fruit throughout the whole course of the disease, except when contra-indicated by diarrhoea; and this symptom was checked by opiates and astringents.

Ranking or predisposing causes were poor diet, uncleanness,

advocated the use, more or less, of stimulants; Sir John Pringle, a high authority, gave bark and serpentaria, and half-a-pint of wine daily; and Dr. James Lind of Haslar Hospital (1763), and Dr. James Sims of Tyrone (1771-3), shared nearly similar opinions with the President of the Royal Society of London. One year previous to Heysham's detection of the jail-fever at Carlisle, an outbreak of the disease occurred among the Spanish prisoners confined at Winchester, of whom 268 died in three and a half months. Dr. J. Carmichael Smyth, the physician in attendance, condemned bleeding, and gave large quantities of port and Madeira; in one case two bottles in twelve hours; and the patient recovered.

intemperance, mental depression ; and these he endeavoured to counteract.

As a preventive of contagion, he recommended a generous diet, and his favourite stimulus, wine, also bark, along with other sanitary measures. He insisted upon clean linen, fresh air directed upon the sick-bed, and through the apartment; in short, thorough cleanliness, as essential to the comfort and cure of the patient.

He dwelt upon the advantage of inspiring his patients with hope, and of avoiding every depressing influence, physical or mental. He condemned the customs prevalent in Carlisle upon the death of any inhabitant :—1st, The tolling of the death-bell, announcing to the world the dissolution ; 2d, The “public cryer,” who used to ring his bell and proclaim in every street in a loud, distinct, and melancholy tone of voice, the hour of the deceased’s funeral, inviting “all friends and neighbours to attend ;” 3d, Funeral psalms sung by the attendants as they were conducting the corpse through the public streets to the churchyard for interment. “In ages of popish ignorance and superstition,” Heysham remarked, “such ceremonies might perhaps be thought conducive to the future happiness and repose of the dead.” Knowing the objectionable nature of such lamentations, he sought the aid of Dr. Percy, then Dean of Carlisle, and the Mayor and Corporation, to get them abolished ; and for a time they were, but superstition was too hydra-headed to be crushed *in toto*.

Though the weather was held to be inoperative as a cause of the fever of 1781, it should be stated that the spring of the year was mild and temperate ; the summer “warm, dry, and serene ;” the autumn warm, and the winter tolerably mild, or Heysham could not have gathered the common wild daisy (*Bellis perennis*) on Christmas day.

Nowhere, as a physician, did Dr. Heysham display more character and firmness of purpose than in his advocacy of wine and stimulants in the treatment of typhus. The disease, nay, the very name of fever, was associated with high action, furious pulse, and hot burning skin ; and everybody looked upon such a condition as only to be mastered by bleeding and depletive measures. His acting so contrary to the recognised doctrines of the medical schools of his epoch, as well as the popular beliefs, showed that he had made observation, and not empirical views, his principles of guidance in the treatment of fever. Happily for himself, as well as his patients, the practice he recommended on truly rational grounds was highly successful. So long and persistent had “the starving system” prevailed, along with bleeding, that any other plan was looked upon as highly culpable, if not heinous to a degree. Nearly fifty years had passed over after Heysham’s pamphlet was issued—say 1830 or later—before physicians would venture upon the use of wine in fevers ; and then it was no easy matter to indoctrinate the great majority of practitioners with the

new views of treatment. Though not the first in Britain, Heysham was assuredly foremost in the North of England to introduce the stimulating mode, and may be said to have been half-a-century in advance of his own times. He deserved more credit than he ever got for making so bold a stand against popular prejudices, and the medical experience that would admit of no exception to bloodletting as a sheet-anchor in the treatment of fevers. It required the philosophical acumen of Alison of Edinburgh, and the practical mind of Graves in Dublin, to shake off the shackles of dogmatic medicine, and to lay down a more rational recognition of the forms of febrile diseases *quoad* treatment. The best proof of the rarity of the stimulating treatment urged by Heysham in 1781, may be found in the words addressed to his Practice of Physic class by Dr. Graves some years ago: "If," said he, "you are at a loss for an epitaph to be placed on my tomb, here is one for you: He fed fevers."

FOUNDATION OF THE CARLISLE DISPENSARY.

The increasing numbers of the sick poor who sought the gratuitous medical services of Dr. Heysham made it imperative upon him to have a larger room than the one attached to his lodgings in St. Cuthbert's Lane, and this led him to think of a public medical institution for the destitute poor of the city. He mentioned his views to Dean Percy of Carlisle, and some of the

wealthier classes. The former provided Dr. Heysham with a room attached to one of the prebendal residences, then approached from Castle Street by a narrow lane. Subscriptions were got up, and the Public Dispensary was fairly established on July 1, 1782. To Dr. Heysham is due the entire honour of founding this excellent institution. He was also its first physician. The friends who helped him most in this good work were the Earl of Surrey, then member of Parliament for the city, and afterwards Duke of Norfolk; the bishops of Carlisle, Clonfert, and Dromore; and Messrs. Dacre, Losh, and Liddell. The Dean and Chapter were liberal supporters; and each year, through Heysham's active exertions, the subscriptions of the county families and wealthier manufacturers of the city greatly increased. In the first year 390 patients appeared on the books of the Dispensary, and during the first fourteen years of its operations no less than 11,382 persons shared in the benefits of the charity. Dr. Heysham continued to take deep interest in the welfare of this institution, and is said to have written all the annual reports that were published till the year 1818.

In setting forth the advantages of the Dispensary, he held that £100 a-year might be so managed as to communicate relief to thousands, and that in no other way could money go so far, or charity impart happiness with equal efficacy, or to the like extent. According to his calculation, there were upwards of 4000 inhabit-

ants supported by daily wages, from which little was ever laid up, so that sickness always found these unprovided for any extraordinary expense.

In the first report of the Carlisle Dispensary, and written by Dr. Heysham, embracing the period from July 1, 1782, to July 1, 1783, it is said that 26 cases of jail-fever were admitted to the benefits of the institution. All were treated with bark (cinchona) wine, and considerable doses of opium, and all recovered. In the Dispensary, year 1783-84, there were 37 cases of jail-fever, and in 1784-85, 43 cases of the same fever. Very early in January of the year 1785 the jail-fever originated among the felons of the jail, and then traversed the city, and continued to rage almost the whole of the year. In January, February, and March, there were 4 cases each month. April had 3; May and June each showed 8 cases; in July there were 10, in August 15, in September 19, and in October and November there were 11 cases each month. The disease was not so virulent as in 1782. Petechiæ and hemorrhagies were seldom observed. A greater portion of children were affected. Relapses were much more frequent. He gave opium early in the disease (1785), and in large quantities the moment he felt sure of the disease being "putrid fever." There were 9 deaths in all in the city out of the 97 cases affected in the 11 months of 1785. In further Dispensary reports, up to the year 1793, jail-fever occupies a

prominent place; but the disease had evidently become a much milder disease, and still more amenable to treatment. Thus, in the report 1786-87, there were 59 cases of jail-fever; in 1787-88 no less than 252 cases, of which 14 died; in 1788-89, 69 cases; in 1790-91, 123 cases; in 1791-92, 158 cases; in 1792-93, there were 123 cases.

Dr. Heysham published, in the *Medical Commentaries* for 1780, vol. vii. p. 349, a "Remarkable Cure of Epilepsy and Dysphagia Spasmodica;" and in the same volume, p. 359, a case of Epilepsy cured by *Cuprum ammoniacum*, in half-grain doses twice a-day. This preparation of copper seems to have been a favourite remedy in Heysham's hands for all nervous complaints, *ex. gr.* St. Vitus' dance. In his Bills of Mortality for 1782 he gave "an account of a peculiar and painful affection of the *Antrum maxillare*, which, upon being opened, contained three insects." This case led to a great war of words between the Doctor and a Carlisle surgeon, but added nothing to what had been observed by Dr. Fothergill (*Medical Observations and Inquiries*, vols. iii. and v.) Other isolated medical or surgical cases recorded by Dr. Heysham hardly deserve to be noticed in this memoir.

HISTORY OF A HUMAN MONSTROSITY.

On the 26th May 1788, Mary Clarke, aged 26 years, and the mother of six children, some of whom were healthy and

others unhealthy, was delivered of a living female child,* the strange appearance of whose head alarmed the midwife, who called in Dr. Heysham within an hour after delivery. The doctor found the bones of the upper part of the skull wanting, and, instead of a brain, a large reddish-brown excrescence projecting a little over the integuments towards the forehead, and extending over the root of the nose. He thought he could perceive the division of the two hemispheres of the brain, and likewise the division of the cerebrum from the cerebellum. On raising this substance, the child began to cry, and started as if influenced by an electric shock. The infant was full-grown, and seemed in perfect health; her limbs were plump, firm, and well-proportioned, and she moved them with apparent agility. The external organs of sense were also perfect. The eyes were full and lively, and the vision seemed perfect. She swallowed well, and took sufficient food, but sometimes during the act of swallowing started a little. She lived from 8 A.M. on Monday, May 26th, till 5 A.M. on the Sunday (June 1st) following, five days and twenty-one hours, and then expired. After the second day she had convulsions occasionally. During the greater part of her brief existence a thin

* The case is narrated in Hutchinson's *History of Cumberland*, vol. ii. p. 676. The medical reader will find it described in the *Memoirs of the Manchester Literary and Philosophical Society*, vol. v. Part ii. p. 496. Dr. John Hull, in a paper read to the said society (Nov. 28, 1800), "On the Nervous System of Different Animals," discussed the physiological bearings of Dr. Heysham's case.

watery fluid, slightly tinged with blood, escaped from the excrescence, which greatly diminished its bulk, and reduced it one-half before death, whilst the surface of the said excrescence was beginning to put on an appearance of mortification.

Such were the conditions observed during the child's life; but an examination after death revealed more extraordinary facts than the mere external appearances indicated. Dr. Blamire and Mr. Charles Farish aided Dr. Heysham in the *post-mortem* inquiry.

The bones which constitute the upper and lateral regions of the head were wanting, and the substance, or excrescence, was found to consist only of membranes, blood-vessels, and several bags, one of which was as large as a nutmeg, the rest of different sizes, and smaller. These bags, or cysts, were filled with a brownish-coloured fluid, that escaped with force on the cysts being punctured. There was not the least appearance of *cerebrum*, *cerebellum*, or any *medullary* substance whatever; in less technical language, neither the great nor the small brain, nor any brain-substance. The spinal cord, or marrow, had a natural appearance, but did not seem to have been connected with the parts above described.

Dr. Heysham was led to infer—1st. That the fluid discharged from the excrescence during the life of the infant, and which produced the great diminution of its bulk, was occasioned by the

rupture or erosion of cysts, similar to those which remained sound and full after death.

2d. That the living principle, the nerves of the trunk and extremities, sensation, and motion, may exist independent of, and that the natural, vital, and animal functions may be performed without, the brain. And as the external organs of sense—namely, the eyes, the nose, the tongue, and the ears—all seemed perfect, may we not, therefore, suppose that the optic, the olfactory, the gustatory, and the auditory nerves (belonging to the senses), may exist independent of, and unconnected with, either the brain or spinal marrow?

The Doctor was content with describing this extraordinary case, leaving others to deduce from it such conclusions as the appearances observed might be thought to warrant. A fat, plump, and vigorous child living very nearly six days, and correctly performing all the ordinary functions pertaining to infantile life without a brain, or even particle of brain matter, was a phenomenon well calculated to excite surprise amongst the uneducated, and not less to puzzle the best informed in science. No more uncommon instance of foetal development passing into extra-uterine life, and for six days manifesting active organic functions, is to be found in the records of medical history from that day to the present time. No wonder it is cited both on account of its rarity and the many physiological considerations involved in its study.

The anatomy of the brain, and the spinal cord connected above with the brain, and occupying the channel formed by the bones of the spine as low as the loins, was only broadly indicated, whilst the functions of these nervous centres were but little understood in 1788; so far, however, as was known, Dr. Heysham reasoned correctly as to the facts observed by him in the case of Mary Clarke's child. It is to be regretted that he did no more than note the conditions of the child, when the case itself afforded a great opportunity for physiological inquiry.

The nervous system was a great puzzle till Sir C. Bell discovered the functions of the roots of the nerves in 1811. Nearly fifty years after Heysham saw the brainless child, Dr. Marshall Hall opened out a new mine of physiological doctrine by experimenting on animals previously reduced to a condition of life resembling that of the child Clarke—namely, by suspending the action of the brain, whilst the functions of the spinal cord were allowed to continue in force. Had Heysham worked the ground lying at his feet, and been possessed of a microscope, he might have demonstrated the fibrillæ or minutest elements of the nerves, and their mode of termination in the encephalon, and helped to unravel some of the intricate problems in biological science.* To trace the mode in which the will conveys its dicta

* That which Dr. Heysham overlooked in 1788 the writer of these pages had the good fortune to discover in 1841 in a child of monstrous formation.—*Vide Edinburgh Medical and Surgical Journal*, vol. lx. p. 330.

to the muscles, and is responded to with the quickness of thought ; to ascertain how the instinctive or involuntary acts are manifested independently of the will ; and to note those intimate relations between the nervous centres and the nutritive functions of the body, were of deep interest to the professional mind. A full and eliminative inquiry into the anatomical and physiological history of the brainless infant would also have helped the cause of psychology, and prepared the English mind for the newer doctrines of an age in which philosophical thought has come to supersede the crude speculations of the past, and sound deductions to take the place of theological supposition and dogma.

Heysham's case,* of such interest in the history of human genesis, let insight into Nature's operations, and showed what odd formations might arise if the threads of life were not correctly woven together in the web that constitutes the entity—normal and symmetrical man. It proved that there were starting points or nuclei of development, from which the formation of organic

* It is curious to note that Carlisle in 1788 yielded a monstrosity in the shape of a brainless child, who lived nearly six days ; and that a child was born about ten miles distant in 1841, in possession of a brain, but without a spinal cord, whose respiration could not be sustained for a moment : both cases stand unparalleled in teratology. As if Cumberland had not done enough in this way, a child was born near Dalston, five miles west of Carlisle, about 1859, with the smallest possible amount of brain ; it lived three months, and died of internal disease. The brain of this child, and also its facial features, bore the closest resemblance to the simian class of animals.

structures proceed, and that if a hitch or hiatus occurs, as in the child Clarke, the brain and its suitable bony covering may be replaced by a lot of small bags containing fluid—a miserable substitute for nervous matter, or rather no substitute at all.

The unprofessional reader will gather from the case under discussion, that the ordinary nutritive functions and locomotion of the body do not rest with the brain proper, but with the spinal cord or the nervous substance that is attached to the brain above and extends downwards to the loins, giving forth nerves in every direction, that become interlaced with another portion of the nervous system called the *Sympathetic*, distributed among the viscera of the body. The functions of the brain are of a higher order, marking the sentient and intellectual being, guiding the actions of life, and affording what claims man can be said to possess to immortality.

Considering the progress that philosophic thought had made, and that Locke and Hartley, both of whom were physicians, had brought their professional knowledge to bear upon metaphysics, it is remarkable that Heysham had so little to say on the relations of the brainless infant to psychology. Hartley's theory of vibrations in the white substance of the brain being the immediate cause of sensation, was an attempt to explain, on strictly anatomico-physiological grounds, the *modus operandi* of thought—the sphinx or riddle of philosophers in all ages. This opinion of Hartley's

was well calculated to claim the attention of his medical brethren, and seemed particularly relevant to the case *sub judice*; but Heysham had either been unacquainted with the writings of Hartley, and the doctrines of Bonnet, the Genevese naturalist, or he had deemed it prudent to abstain from any expression that would link his medical reasonings with the materialistic views of Hobbes and Hume, then held to be so dangerous and heterodox. Though Hartley was classified with the materialists, as all innovators on established forms of thought are apt to be, he was a believer, and a highly religious person, whom Coleridge describes as—

“He of mortal kind
Wisest; the first who marked the ideal tribes
Up the fine fibres to the sentient brain.”

CHAPTER V.

ONE DECADE OF HEYSHAM'S LIFE—HIS NATURAL HISTORY OBSERVATIONS IN CUMBERLAND.

IN the first ten years of his residence in Carlisle (1778 to 1788), Dr. Heysham had done more perhaps than any one of his medical predecessors in the place, to advance its strictly medical interests, and to promote its sanitary welfare. He had made two surveys of the city and its suburbs and village-parochial districts, and numbered the houses, the families, and the population therein. Along with the census he had collected the numbers of births and deaths, the ages and conditions of the people; and by classifying the causes of and circumstances attendant on the death-rate, had framed bills of mortality for each year.

He had founded a public Dispensary, and laid down good rules for its guidance and future success, and hesitated not for many years to take upon himself a large share of its medical responsibility.

In his wish to extend the area of medical knowledge, and to make his study and observation of disease of historical utility, he