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

had published a valuable essay on jail-fever, and described a deeply-interesting case of human monstrosity.

Professional work, though daily urgent, was not the sole occupation of his mind; in the midst of numerous private and public engagements he found leisure to study the natural history of Cumberland.

Dr. Heysham ceased to tabulate his observations on the bills of mortality after 1788. No reason has ever been assigned for this; it may have been owing to his increasing practice, or greater partiality for natural history; probably he was influenced by a more potent charm than scientific inquiries in the person of Miss Coulthard, only daughter and heiress of Alderman Thomas Coulthard, a rich tanner, who had twice occupied the mayoralty of Carlisle. He was married to Elizabeth Mary Coulthard in London on 4th May 1789. He was in his thirty-sixth year, his wife was in her twenty-fourth year. Mrs. Heysham bore a family of four sons and three daughters to her husband. She died on 30th May 1803. Of her sons, John Coulthard Heysham died in infancy; William, lieutenant and adjutant of the 53d Bengal Native Infantry, died 13th October 1825, aged twenty-nine years; Thomas Coulthard Heysham, a distinguished naturalist, died in Carlisle, 6th April 1857, aged sixty-six years; James Heysham, lieutenant of the navy, died at Borren's Hill, Carlisle, 10th May 1870. Of his daughters, Mary Heysham died 28th May 1808,

aged fourteen years; Isabella, who became the wife of Mr. G. G. Mounsey, of Castletown, Carlisle, died 14th May 1848, leaving numerous issue. The only survivors are the Rev. John Heysham, M.A., Vicar of Lazonby, Cumberland, and Miss Anna Heysham of Carlisle.

Dr. Heysham, on his marriage, took a three-storey house immediately opposite his old lodgings in St. Cuthbert's Lane: there he and his wife lived happily, and brought up their family in a manner commensurate with their good position in society. He was affectionately attached to his children.

Dr. Heysham was a naturalist in the true acceptation of the term, and did more than any other person to make the natural history of Cumberland generally known. His penchant for the study of animated nature arose in early life amidst the woods and dales of Westmoreland, and along the pleasant shores of Morecambe Bay, where he loved to wander and enjoy the picturesque scenery around. Being skilled in the use of the bow and arrow, his rural walks were made subservient to his ornithological pursuits, and these of all others were the most favoured in his natural-history career. If his first steps were juvenile and amateur-like, the knowledge gained of anatomical forms, by his medical studies, gave a fresh colouring and precision to his observations. He soon made himself known as a naturalist, and far beyond the Carlisle district. He was elected an Associate of the Linnæan Society,

London, at the second meeting of the said society held at the Marlborough Coffee-House in March 1788. The writer is not aware if Heysham contributed any papers to the "Linnæan;" there is no record of such in the Society's "Transactions;" and as he died before the publication of the monthly "Proceedings," there is no obituary notice of him by the Society.

Persons residing in Cumberland and Westmoreland, who met with birds of doubtful plumage, or rare specimens, or who had marked any deviation from the usual habits and manifestations of animals, used to consult Heysham. In this way he enjoyed the double advantage of his own observations and the experience of others. He compared notes with fellow-workers over a wide area of country, so that every division of the northern district came to be explored—the high peaks of the fells, the green dale-land, the marshes, rivers, seabord, and, in fact, the sea itself, from Burgh-on-Sands and the Scottish shore to Barrow-in-Furness, Lancashire. As books were scarce and dear, a local and scientifically educated authority of Heysham's stamp was sought for and highly prized by less favoured promoters of natural history. Distance of locality counted nothing with enthusiastic minds; and if Heysham would walk twenty miles to see a nest, others would travel twice the distance to take counsel of a proved leader in the science they loved so well.

Though ready to investigate both land and marine animals by

the more or less imperfect lights of Linnæus and Buffon, the authorities of one hundred years ago, his special study was ornithology and some divisions of entomology. He collected great numbers of birds, also their eggs and nests, and preserved the best *generic* specimens, with which to compare any additional examples that might come in his way. He adopted the same practice in other departments of the animal kingdom; and being favoured with the friendship of such gentlemen as Sir James Graham, the first Baronet of Netherby, and Mr. John Losh of Woodside, who took interest in his pursuits, he was enabled to gather a rich harvest of facts in natural history. These facts became of import at an earlier date than was expected, owing to an application being made to Heysham by Mr. William Hutchinson, about to undertake a History of Cumberland,* to furnish "a Catalogue of Cumberland Animals" for the proposed work. Heysham was the only man in the county acquainted with the animal tribes, so that his co-operation in the work was not only of import, but essential and imperative, seeing that a history of Cumberland devoid of infor-

* Heysham, though he possessed the records of fifteen years' observation, would hardly have gone to press on his own account, knowing, as he would do, that Cumberland folk were not much given to any form of reading, and that they would rather borrow than buy a volume. As very few people cared a straw for natural history, it would have been unwise to incur so great an expense as that of publishing an essay on the Fauna of Cumberland. His observations filled 53 pages of double-lined quarto in Hutchinson's *History*.

mation on the natural products and fauna of the county would have been manifestly imperfect.

Heysham entered with spirit upon the work assigned him by the editor, and the result of his labours up to 1793 or 1794 is to be found recorded in the first pages of Hutchinson's *History of Cumberland*. In glancing at Heysham's public contributions, the writer must content himself with a few general notes, exemplifying the originality of his observations, or the more instructive generic data of his work.

In his classification of the Cumbrian fauna, Heysham relied mainly upon the *Systema Naturæ* of Carl Linnæus; Thomas Pennant's *British Zoology* (1761-77); and John Latham's *General Synopsis of Birds* (1781). Along with the technical description he gave the local nomenclature for each species, so that, whilst his catalogue was scientific in character, it was no less accessible to the meanest capacity. It is worthy of special note that Heysham only recorded what he had himself seen and investigated: his observations necessarily bear a high value, compared with those of the mere compiler and copier of other men's labours. He went carefully through the whole animal kingdom; beginning with the quadrupeds, and passing down the zoological scale, he catalogued every species known to exist in Cumberland. His notes appended to each description rendered the whole compendium readable, instructive, and locally interesting. His work bespeaks labour, research, and a painstaking accuracy, all the more creditable that it was undertaken on behalf of the interests of science.

The narrative of his natural history experiences, as found in Hutchinson's *History of Cumberland*, comes down to 1794 or thereabouts; since which time, it is hardly needful to say, changes have taken place in the county greatly affecting the condition of the people, and correlatively the natural habits of the zoological genera—be they the casual bird visitors or indigenous tribes observed within its area eighty years ago. Significant as is the contrast between the primitive living and bucolic pastimes of Cumbrians at the close of the last century, and the reigning fashion of to-day; more widely apart, however, may be said to stand the relations of the winged tribes to their former rendezvous and habitations. To avoid the haunts of men and the wanton savagery of indiscriminate shooters, abandonment of the old grounds, or dispersion, has become an instinctive necessity with the rarer species, failing which, nothing less than annihilation awaits them in England. Nowhere, perhaps, in the whole range of English ornithology, could a more striking example of this opinion be found than on Newtown Common, within a mile and a half of Carlisle. Suburban extension, the inroads of the factory system upon rural life, and the depredations of poachers, have rendered a locality that was unusually rich in ornithology in Heysham's day,

a complete waste to all but the sparrow and common hedgerow birds.

CLASS I. QUADRUPEDS.—In treating of the *genus* Deer, Heysham states, "The stag or red deer (*Cervus claphus*,* Linn.) may be said to range, almost in a state of nature, in the forests and hills of Martindale, in the neighbourhood of Ullswater." In the same locality were to be seen a few examples of the wild cat, then rapidly disappearing, and now unheard of.

The black rat was becoming rare, having been expelled from the county by the brown rat. Oddly enough, Heysham had a specimen of the black rat "perfectly white" in colour. However incongruous this statement may appear of a specific black animal showing entirely white, it is quite reconcileable with well-ascertained facts in zoology. Man himself presents as great a variety of colour, and what can be more antipodal in external character than the black negro, and the albino—the latter exemplar of the human race being by no means so rare as the white coloured specimen of the black rat. In connection with colour, it may be noted that Heysham had a mole presented to him by William Dacre of Kirklinton of a fine cream colour.

* Claphus is likely to be an error of spelling for Elaphus, the designation of the red deer by modern writers being *Cervus elaphus*, in honour, it may be supposed, of Aristotle's Ἔλαφός. Linnæus gets the credit of naming it *Cervus vulgaris*. The animal has a long list of synonyms.

CLASS II. BIRDS.—The *Sea Eagle* used to build in the rocks which surround the lake of Ullswater, and the great trout, upwards of ten pounds in weight, of that lake had been taken out of its nest. "Its food is principally fish; which it takes as they are swimming near the surface, by darting itself down upon them."

The *White-tailed Eagle* was found among the rocks in the neighbourhood of Keswick. A young one taken in Borrowdale was presented to Dr. Law of Carlisle, afterwards Bishop of Elphin; it lived nineteen years, but the characteristic white tail did not appear till it was six years old.

The *Peregrine Falcon* "breeds constantly every year in a rock near the cascade at Gilsland, or in another high rock six miles from that place, near a public-house called Twice-brewed Ale, on the road from Carlisle to Newcastle." It was near this rock (fifteen miles from Carlisle) that Heysham watched a female falcon constantly upon the wing for five hours; then it perched and he shot it. Had he lived in the days of Queen Elizabeth, he would have paid dearly for his shot, as the female peregrine, in the language of "falconrie," was called the falcon *par excellence*, and claimed for the royal preserves. Heysham held it to be the most destructive of game of any bird in Cumberland; later observers fully confirm his view as to the daring and ferocity of this falcon.—(*Vide* Mr. Thompson's paper in *Magaz. Zool. and Botan.* vol. ii. p. 53; and Selby's *Ornithology*.)

Hen-harriers.—Linnæus was of opinion that the birds commonly known as hen-harriers and ringtail were of different species; the former he designated *Falco cyaneus*, the latter *Falco pyargus*. Pennant and Latham adopted his views. On the other hand, Brisson, Ray, and Willoughby, considered the hen-harrier male, and the ringtail female, as the male and female birds of one species, known to modern writers as *Circus cyaneus*. Seeing such great names opposed to each other led Heysham to exercise uncommon vigilance. Having discovered, in the year 1783, three nests of the ringtail and hen-harrier on Newtown Common, about a mile and a half from Carlisle, he watched the habits of the birds very closely during the incubated periods of 1783 and 1784. In June 1785 he had also three nests on the same common; and having entrapped the birds, satisfied himself and others that the birds were male and female, and not distinct species, thus confirming Ray and Willoughby's opinions. Heysham's narrative of his observations is very interesting, and the nature of the evidence adduced by him proved irresistible to Latham, and fairly settled the point at issue.

Merlin.—"Mr. Pennant says the merlin is a bird of passage, and does not breed in England, which is a mistake; it breeds in Cumberland, and remains with us the whole year." Heysham proved this by three nests on Rockcliff Moss, and by obtaining both the male and female birds. He saw a merlin strike a blackbird; and one day in February (1793) he got a fine cock partridge, which this bird had killed the moment before.

The *Butcher-bird* or Great Shrike (*Lanius excubitor* of Linnæus) is a "beautiful and scarce bird.* I have only met with three or four specimens. In spring and summer it imitates the notes of other birds, by the way of decoying them within reach, that it may destroy them."

The *Carrion-crow* he held to be more numerous in the north of England than in any country of the world, and as destructive to young ducks and chickens as any species of hawk. He asked for the revival of an ancient statute (8 Eliz. c. 15), by which churchwardens could levy an assessment and pay for the heads of "old crowes, choughs, or rooks," and numerous birds of known destructive propensities. At the time he wrote, some parishes in Westmoreland paid so much a head for house-sparrows, and of other birds of no better repute.

The *Jay* stands alone among British birds in feeding entirely upon vegetables, according to Heysham.

The *Cuckoo*, it was ascertained, was migratory in habit. He had difficulty in distinguishing the sex by external colours. He

* The Butcher-bird, a native of Norway and Sweden, is extremely rare in Britain. In October 1865 Mr. Jackson Gillbanks, of Whitefield House, shot one near the base of Skiddaw. In the same month one was captured alive by some boys in the market-place of Wick, Caithness. It constitutes the *Lanius cinereus* of Gesner and Aldrovandus.

had seen the cuckoo's egg, and also two eggs in the nests of several small birds—viz. water-wagtail, hedge-sparrow, and titlark, but most frequently in the last named; moreover, he had seen the young cuckoo fed by the titlark.

The common *Kingfisher*, the nest of which had occupied the fancies of Pliny and other ancient writers, and whose plumage had been specially noted by Englishmen on account of its beauty, was found by Heysham to have no nest at all; the eggs being placed on the bare mould at the extremity of a narrow channel, eighteen inches long, in the banks of the river Peterill. The eggs of the kingfisher and water-ouzel are alike in colour, and nearly so in size. Heysham walked ten miles from home to the banks of the Roe, to see the nest of the water-ouzel.

The *Bohemian* or *Waxen Chatterer* only visits Cumberland occasionally. Great numbers of this beautiful bird were killed in the north of England in the year 1787. Its horny appendages on the tips of the secondary feathers, being of the colour of the very finest red sealing-wax, and other peculiarities, distinguished this bird from all others. At Keswick, Temple-Sowerby, and near Carlisle, specimens were obtained, and Sir Henry Liddell, Bart.. sent one to Heysham from Ravensworth in Northumberland.

The *Martins* (*Hirundo urbica*, *riparia*, and *apus*) engaged much of his attention—their migration, mode of building, etc.

He cited a series of meteorological observations, both of his own and of Mr. J. Mackenzie of Brampton, with the view of showing the exact temperature of the air at the times when these martins appeared and disappeared, and of testing the then disputed point of migration on the part of these birds. His observations were conclusive as to their migratory character. Of the Cumberland birds which migrate, Heysham remarked, but "thirty-eight appear in the spring, and depart either in the autumn or beginning of winter, and forty-three appear during the winter, and depart in the spring." He used invariably, in the spring months, to watch night and morning, if not oftener in the day, for the arrival of the swallows, martins, redbreasts, etc.

In 1790 the *Pheasant* and *Blackcock* were rare in Cumberland. Sir J. Graham of Netherby and others were trying to introduce the pheasant—marvellously abundant in the present day. The blackcock was at the time most seen on the Netherby estate; and, singularly enough, there was an annual brood upon Newtown Common, about a mile and a half from Carlisle. This Newtown Common seems to have been a wild aviary to Heysham; and so different were the genera of birds found upon its waste land, that it is difficult to account for their habitats being alike, as well as their numbers being so great.

WATER-BIRDS.—Of the *Common Heron* (*Ardea cinerea* of Temminck and Latham) Heysham relates a curious history, based

on observations made at Dallam Tower, in Westmoreland:—"There were two groves adjoining to the park, one of which for many years had been resorted to by a number of herons, who there built and bred. The other was one of the largest rookeries in the country. The two tribes lived together for a long time without disputes. At length, the trees occupied by the herons, consisting of some very fine old oaks, were cut down in the spring of 1775, and the young brood perished by the fall of the timber! The parent birds immediately set about preparing new habitations, in order to breed again; but as the trees in the neighbourhood of their old nests were only of a late growth, and not sufficiently high to secure them from the depredations of boys, they determined to effect a settlement in the rookery. The rooks made an obstinate resistance; but, after a very violent contest, in the course of which many of the rooks, and some of their antagonists, lost their lives, the herons at last succeeded in their attempt, built their nests, and brought out their young."

The next season the same contests took place, and victory was again in favour of the heavy battalions. After this the rooks relinquished possession of that part of the grove, and, retiring to a respectable distance, kept the peace towards their betters.

Heysham observes—"This bird (heron), which is now seldom or ever seen upon a table, was, in former times, esteemed very delicate food;" in proof of which he quotes the following prices

of birds from the twenty-seventh year of the reign of Edward I.:—A fat cock to be sold at three-halfpence, a goose for fourpence, a partridge for three-halfpence, a pheasant for fourpence, a heron for sixpence, a plover for a penny, a swan for three shillings, two woodcocks for three-halfpence, a fat lamb, from Christmas to Shrovetide, for sixteenpence, and all the year after for fourpence, Looking to the list of prices of birds sold at Carlisle in 1796, or five centuries later, the reader will ascertain the difference of the two periods by multiplying Edward's prices by ten, to gain the value of victuals in the middle of George the Third's reign in northern England.

The writer reluctantly passes over what Heysham records of the dunlin, dotterel, spotted rail, little auk, northern diver, and the disputed points in the history of the goosander and dun-diver, and the instances of peculiar apathy manifested by the corvorant. Before leaving the ornithological division, note should be made of the fact laid down by Heysham, that in several species of birds, where the male plumage differs materially from the female, as in the blackcock and grey hen, hen-harrier and ringtail, all the young birds, whether male or female, resemble the female more than they do the male.

Heysham said but little of the REPTILES: he is much more discursive on FISHES. He describes the angel-fish taken near St. Bees in 1793, and gives a drawing of it when dried and preserved

for the purposes of a show. His history of the marine fishes is ample enough, and embraced all that was known in his time. He discusses the *Salmonidæ* at great length, as all anglers and naturalists have done from "time immemorial;" and of course saw strong reasons to find fault with the provisions of the several acts passed by the Legislature for the protection of the salmon brood. The writer has too much regard for his reader to think of trespassing on salmon ground, so fertile of disputation and endless unscientific *palaver*. Heysham's opinions on every subject he touched are worth attentive consideration; and nothing more need be said to induce those in search of *Salmoniana* to peruse the record of his experiments in the Eden and other Cumberland rivers, than which no better salmon rivers can be met with in England.

As the Linnæan system of classification prevailed beyond the eighteenth century, it is not to be supposed that Heysham's *generic* views are strictly in accordance with the opinions held to-day; his description of species, however, may be thoroughly relied upon. Terrestrial animals found pretty nearly their proper places in the zoological scale, as their anatomy, functions, and habits, were more patent in character. This could hardly be said of the denizens of the deep, which were looked upon as of one flesh, and that flesh fishy. The fish swims, so do the whale and the minnow; hence arose the doctrine that all were fish that

swam in the sea; and the classification of the Mammal Cetacea with the cold-blooded fishes.

All that Dr. Heysham publicly recorded of his natural history observations, as far as the writer can ascertain, is to be found in Hutchinson's *History of Cumberland;* yet there is no doubt of his having done much more in this broad field of inquiry after 1795, the date of the county history. It is said that he kept his thermometrical records as late as 1830; and it is highly probable that he left numerous manuscripts on these and kindred subjects, which came into the possession of his son, Thomas Coulthard Heysham, whose penchant for natural history was quite equal to his own. Now, there is reason to believe that when Mr. T. C. Heysham, in his latter years, threw into the fire bundles of his own papers, containing valuable researches in entomology and ornithology, his father's manuscripts suffered the same fate. At any rate, there is no clue to a very large collection of papers, supposed to have fallen into Mr. T. C. Heysham's hands. The history of entomology would have been largely benefited had the Doctor and his son's researches found their way into the world.