all his men to be armed and drawn up on the beach. After going through ſome evolutions, they fired three vollies in preſence of the King and his attendants, who expreſſed their ſurpriſe by hallowing, jumping, &c. One of the fowls, which had been ſaved from the wreck, was made to paſs acroſs the cove, where Mr BENGER was prepared with his fowling-piece loaded with ſmall ſhot. He fired, and the bird inſtantly dropped, having one wing and one leg broken. Some of the natives took it up, and brought it to the King, who was aſtoniſhed, as he had ſeen nothing paſs out of the gun, how this effect could have been produced.

Some time after, Captain WILSON, and the whole ſhip's company were vexed, and even alarmed, on obſerving an unuſual coolneſs in the aſpect and behaviour of the King. Inſtead of his former open and affectionate manner, he had become moroſe and apparently diſtruſtful. The cauſe of this change, however, when developed, was not only a confirmation of the higheſt honour in the breaſt of the Sovereign, but a proof of the greateſt delicacy of ſentiment. The King was at war with an iſland not far diſtant, called *Artingall*. He meant to make an attack upon that iſland in a few days. He wiſhed to have the aſſiſtance of five Engliſhmen armed with muſkets, piſtols, &c. to aſtoniſh and annoy his enemies. Whenever Captain WILSON diſcovered the nature of the King's requeſt, he inſtantly complied. In a moment, every countenance aſſumed an unuſual gaiety, and perfect harmony and mutual confidence were reſtored. The five men, with THOMAS ROSE the interpreter, accompanied the fleet of King *ABBA THULLE*, which conſiſted of a hundred and fifty canoes filled with warriors. No ſooner did they arrive within a proper diſtance of the enemy's fleet than the muſketry were ordered to be fired. One or two men were obſerved to fall. Terror and

diſmay, at an exhibition ſo far removed from the conception of thoſe iſlanders, inſtantly ſeized them, and they fled with the utmoſt precipitation. The King, elevated by the victory he had ſo eaſily obtained, and the terror which he had excited in the minds of his enemies, returned in triumph to his own dominions, where he was received by his ſubjects with every mark of joy and exultation. Some little time afterwards, the King prepared his canoes and ſoldiers for another expedition againſt Artingall. Ten Engliſhmen, armed as before, with the addition of a ſwivel-gun, were ſolicited from Captain WILSON to attend *ARBA THULLE* and his warriors. This requeſt was alſo granted; and the havock made by the fire-arms was ſo great, that another victory was eaſily obtained by the Monarch of Pelew. Soon after this defeat, peace was concluded between the two contending parties.

Marriage, among theſe people, ſeemed to be a civil contract, which they regard as inviolable. A plurality of wives was allowed, though the number ſeldom exceeded two. *RAA ROOK* had three wives, and the King five; but they did not live together. After a woman was pregnant, though ſhe accompanied her huſband, ſhe never, while in that ſtate, ſlept with him. When any Chief appeared with his two wives, they generally ſat on each ſide of him; and the company paid no more attention to them than what is cuſtomary where the greateſt good manners prevail. One of the Engliſh gentlemen, endeavouring to render himſelf agreeable to a lady by what is uſually termed a marked aſſiduity, *ARRA ROOKER*, with much delicacy, hinted, that ſuch behaviour was not altogether proper.

With regard to their mode of *burying* the dead, Mr SHARP the ſurgeon, and THOMAS HARVEY the boatſwain, ſaw the funeral of

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Raa Rook's ſon, who had fallen in battle. The body was wrapped in a mat, and carried on the ſhoulders of four men, on a machine made of bamboos, and reſembling what is called a *horſe* by our chairmen. Beſide theſe four bearers, the funeral proceſſion conſiſted entirely of women, who inceſſantly ſet up the loudeſt lamentations. The ſame cuſtom formerly exiſted in the north of Scotland, and ſtill prevails in ſome parts of the Highlands and weſtern iſles of that country.

Captain Wilson and his ſhip's company, before their new veſſel could be fitted for ſea, remained three months in Oroolong, and occaſionally viſited ſeveral other of the Pelew Iſlands. During this period they could diſcover no marks of a public *religion* of any kind among theſe iſlanders: But they uniformly exhibited the greateſt examples of *humanity* and *moral rectitude*, which ought to be the genuine characteriſtics of all religions, whatever diverſity of ceremonials they may happen to aſſume. But, though theſe people have no place of *public* worſhip to which they reſort, both their private and political virtues are ſo eminently conſpicuous, that it is almoſt impoſſible they ſhould not have ſome idea of a ſupreme and a benevolent Deity. The people of Pelew, however, diſcovered ſome portion of ſuperſtition; for, when King *Abba Thuile* ſaw a particular ſpecies of *wood* employed in the conſtruction of the new ſhip, he expreſſed a wiſh that this wood ſhould be removed, as he conſidered it as a *bad omen*, or *unpropitious*. They had likewiſe a notion of an evil ſpirit, that often counteracted human affairs. When the ſecond mate, Mr *Barker*, fell backward from the ſide of the veſſel then on the ſtocks, *Raa Rook*, who happened to be preſent, ſaid, the accident was owing to the *unlucky wood*, which had been allowed to remain in the veſſel, that the evil ſpirit had brought this misfortune upon Mr *Barker*.

They ſeemed to have alſo a ſtrong notion of divination. When about to undertake any affair of moment, by ſplitting the leaves of a plant ſimilar to our bullruſh, and meaſuring or twiſting theſe ſtrips upon their middle finger, they imagined they could diſcover whether the event would be proſperous or adverſe. *Captain* WILSON, in converſation with *LEE BOO*, King *ABBA THULLE's* ſecond ſon, after his arrival in England with the Captain, told him, that the intention of ſaying prayers at church was in order to make men good, and that, when they died, and were buried, they might live again *above*, pointing to the ſky; *LEE BOO*, with great eagerneſs, replied—*All ſame* PELEW—*Bad men ſtay in earth—good men go into ſky—become very beautiful*, holding his hand in the air, and giving a fluttering motion with his fingers. This ſingle circumſtance indicates, in the moſt unequivocal terms, that theſe innocent people firmly believe the exiſtence of the ſoul after the diſſolution of the body, and have an idea of future rewards and puniſhments correſponding to the virtuous or vicious behaviour of individuals.

It is a ſingular circumſtance in the hiſtory of theſe people, that, if an *attack* is intended againſt an *hoſtile* iſland, inſtead of ſurpriſing the enemy, intimation is uniformly given of the time when the aſſault is to be made. Though illuſtrious patterns of humanity, they put to *death* every *priſoner* taken in *war*. This ſeeming cruelty, however, muſt not be haſtily condemned. It is not performed with the inſulting ſolemnities of ſeemingly *legal trials*, like the execrable conduct of the preſent *French Convention*, which will for ever remain a moſt deteſtable and humiliating proof of the *barbarity* of what has, till now, been eſteemed one of the moſt *civilized* nations in Europe. The Pelew Iſlanders, on the contrary, never kill their priſoners but inſtantly after a victory is obtained, before the effervеſcence of animoſity

moſity is allayed; and the poor victims are deprived of life by thoſe who are either ſmarting under *perſonal* wounds, or who have loſt ſome near *relation* in the combat.

It has formerly been related, that the inhabitants of the South Sea Iſlands are addicted to *petty thefts*. In the *Pelew* Iſlands inſtances of theft likewiſe occurred; but this *crime*, if in them it merits that appellation, was always confined to the lower claſs of people. When a theft, however, was committed, the King and his Chiefs conſidered it as a groſs breach of hoſpitality, made ſtrict inquiries after the thief, whom they generally diſcovered, and reſtored the articles. 'Should 'ſome eaſtern prince,' Captain WILSON humanely remarks, as an apology for the Pelewcis, 'magnificently decorated, accidentally, as he 'paſſed along, drop a diamond from his robe, and were a poor peaſant (knowing how great an acquiſition it was), to ſee it ſparkling 'in the duſt, where is that reſiſtance, that ſelf-denial, which would 'go in and leave it untouched?—A nail, a tool, or a bit of old iron, 'was to *them* the alluring diamond.'

We muſt not leave theſe amiable people, till a ſhort ſketch of the character and feelings of LEE BOO, who was brought from Pelew to England by Captain WILSON, ſhall be given. This young Prince was about twenty years of age when he arrived in a *New World*. His natural diſpoſition was mild, affable, ſprightly, and affectionate. He diſcovered, on all occaſions, a keen ſpirit of inveſtigating the cauſes or effects which to him were at firſt incomprehenſible. After landing at Macao, he was conducted, along with his protectors and friends, to the houſe of Mr M'INTYRE, and brought into a large hall, which was lighted with candles, a table being placed in the middle covered for ſupper, and a ſideboard handſomely ornamented.

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This new ſcene filled LEE BOO's mind with amazement. But the glaſs-veſſels ſeemed principally to arreſt his attention. He fixed his eye upon a large mirror, which nearly reflected his whole body. Here he ſtood ſome time loſt in aſtoniſhment. He then laughed, drew back, and, abſorbed in wonder, returned to view this ſtrange appearance. He looked, as young children, when placed in the ſame circumſtances, uniformly do, behind the mirror, to ſee if any perſon was there. As there were no quadrupeds in his country, except two dogs which had been left there by the Engliſh, the ſheep, goats, and cattle he ſaw at Macao, were objects which ſtruck his mind in the moſt forcible manner. One of the dogs left at Pelew was a Newfoundlander, and his name a *Sailor*. LEE BOW, from this circumſtance, denominated every quadruped he ſaw, whether ſmall or great, *Sailor*. A horſe was a *large ſailor*, &c. Obſerving a man paſs the houſe on horſeback, he was ſo aſtoniſhed, that he preſſed every perſon in company to go and ſee ſo ſtrange a phaenomenon.

When on his voyage to England in the Morſe indiaman, Captain ELLIOT, he was very deſirous of learning the name and the country of every ſhip that paſſed. As each inquiry was gratified, he made an additional *knot* on his *line*. Theſe *knots* were to him the ſame as written memorandums to us. But, as the knots ſoon became numerous, to refreſh his memory, he was obliged to read them over every day. The officers of the Morſe, when they ſaw him ſtudying his *line*, uſed to ſay he was *reading* his *journal*. He ſollicited Captain WILSON to be inſtructed in the uſe of letters and of reading, which was readily acquieſced in; and he was very attentive and alert in comprehending every ſpecies of information he received. On arriving at St Helena, he was much ſtruck with the ſoldiers and cannon on the fortifications. When walking in the Company's garden, he

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was pleaſed with ſome ſhady walks formed with bamboos arching overhead on lattice-work; and remarked that his own countrymen were ignorant of many advantages they might eaſily obtain. Like a philoſopher and patriot, every uſeful and extraordinary thing that occurred in his travels, he noted down in his manner, and with the uniform view of improving his countrymen when he ſhould return to his native ſoil. The Morſe arrived at Portſmouth on the 14th day of July 1784. When LEE BOO landed, the number and magnitude of war ſhips in the harbour, the variety and ſtructure of the houſes, and the ramparts, ſo rivetted and abſorbed his mind, that he found himſelf unable to aſk any queſtions. When he reached London from Portſmouth, he was conveyed to Captain WILSON's houſe at Rotherhithe. He arrived in his natural glow and youthful ſpirits. What he had remarked in ſilence, was now diſcloſed with vivacity and intelligence. He deſcribed the incidents of his journey, and ſaid that it was very pleaſant; that he had been put into a little *houſe*, which was run away with by *horſes*; that he ſlept, but was ſtill proceeding in his journey, and that, whilſt he was moved one way, the *fields*, the *houſes*, and the *trees*, went in the contrary direction. At the hour of reſt, he was conducted to his chamber, where, for the firſt time, he ſaw a fourpoſt bed. Not knowing for what purpoſe it was intended, he repeatedly jumped in and out, and felt and pulled and the curtains. At length, being acquainted with its uſe, he laid himſelf down to ſleep, ſaying, that, in England, there was *a houſe for every thing*. Being aſked his opinion of England and of his preſent ſituation, he inſtantly replied, *All fine country, fine ſtreet, fine coach, and houſe upon houſe up to ſky.*

LEE BOO was ſent to an academy, to be inſtructed in reading and writing. Whilſt there, his manner and deportment ſoon gained him

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the eſteem of the maſter, and the affection of his young companions. In the hours of receſs from ſchool, he amuſed Captain WILSON's family with his vivacity and good humour. He mimicked ſuch peculiarities as he obſerved in the manners and behaviour of his ſchool-fellows, and often ſaid, that, when he returned to *Pelew*, he would have a ſchool of his own, and ſhould be thought very wiſe *when he taught the great people their letters*. He always called Mr WILSON *Captain;* but he uniformly gave the appellation of *Mother* to Mrs WILSON, conſidering it as a greater mark of affection and reſpect. He was often told, that he ſhould ſay *Mrs WILSON;* but his conſtant reply was, *No, no—Mother, Mother*. When ſollicited for charity by *young* people of either ſex, he told them, that it was ſhameful to *beg* as long as they were able to *work;* but the ſollicitations of *old age* he could never reſiſt, ſaying to himſelf, LEE BOO *muſt give poor old man—old man not able to work*. Captain WILSON and the young Prince, when dining with Mr KEATE, a friend of Mr WILSON, and well known to LEE BOO, a miniature picture of Mr KEATE was exhibited; LEE BOO, taking the picture into his hand, inſtantly recognized the likeneſs, and exclaimed, *Miſſer* KEATE—*very nice, very good*. Captain WILSON aſked him, if he underſtood what it repreſented? He replied, LEE BOO *underſtand well—That Miſſer* KEATE *die—This Miſſer* KEATE *live!* A volume on the utility of portrait-painting could not contain more than theſe few forcible words uttered by this untutored child of Nature.

Every uſeful or uncommon object which he ſaw he examined with attention, and, like a true philoſopher and patriot, conſidered whether it might be rendered uſeful to his own country. When in gardens, he remarked particularly the eſculent plants and fruit-trees, aſked many queſtions concerning them, and ſaid that, when he returned home,

home, he would carry ſeeds of ſuch of them as he thought would grow to perfection in *Pelew*. While rapidly advancing in the knowledge of the Engliſh language, and in the art of writing, notwithſtanding all the precautions of his friends, he was ſeized with the ſmall-pox, of which he died in a few days. When very bad, he accidentally heard that Mrs WILSON was indiſpoſed, and confined to bed, he became impatient, and exclaimed, *What, mother ill?* LEE BOO *go up to ſee her.* On the Thurſday before his death, when walking acroſs the room, he looked at himſelf in the glaſs. His face being then ſwelled and diſfigured, he ſhook his head, turned away as if diſguſted with his appearance, and ſaid to Mr SHARP the ſurgeon, that *his father and mother much grieve, for they knew he was very ſick.* Growing worſe in the evening, he ſeemed to think himſelf in danger. He took Mr SHARP by the hand, and looking ſtedfaſtly on him, ſaid, *Good friend, when you go to* PELEW, *tell* ABBA THULLE *that* LEE BOO *take much drink to make ſmall-pox go away, but he die; that the Captain and mother very kind—all Engliſh very good men;—was much ſorry he could not ſpeak to the King the number of fine things the Engliſh had got.* Though his feelings and pain muſt have been acute, his ſpirit would not allow him to complain. Mrs WILSON's chamber being adjacent to his own, he often called out to know if ſhe was better, always adding, leſt ſhe ſhould ſuffer on his account, LEE BOO *do well, Mother.* Soon after his interment in Rotherhithe church-yard, the INDIA COMPANY ordered a tomb to be erected over his grave with the following inſcription:

To the Memory
Of Prince LEE BOO,
A native of the PELEW, or PALOS Iſlands;
And ſon to ABBA THULLE, Rupack or King
Of the Iſland COOROORAA;
Who departed this life on the 27th of December
1784,
Aged 20 years;
This Stone is inſcribed,
By the Honourable United Eaſt India Company,
As a Teſtimony of Eſteem
For the humane and kind Treatment afforded
By his FATHER to the Crew of their ſhip
The ANTELOPE, Captain WILSON,
Which was wrecked off that Iſland
In the night of the 9th of Auguſt 1783.

Stop, Reader, ſtop!—let NATURE *claim a tear—*
A Prince of MINE, *LEE BOO, lies buried here.*

Upon the whole; no poet, either for character, ſituation, or incident, can have a better ſubject for a *Tragedy*, than is afforded by the *Hiſtory of Prince* LEE BOO

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* This ſhort narrative concerning the Pelew iſlanders is extracted from *An Account of the Pelew Iſlands, compoſed from the Journals of Captain* HENRY WILSON, *and ſome of his officers, by the ingenious* GEORGE KEATE, *Eſq; F. R. S. & S. A.*

THIS intereſting Chapter muſt not be concluded without ſome general reflections. The reader has now been conducted through almoſt every region of the globe which has hitherto been viſited by Europeans of intelligence. Though, in different climates, men vary in colour, appearance, and manners; yet the human character, however diverſified, is not only recognizable, but perceived to be uniformly and diſtinctively the ſame. It is not by colour, nor even form, but by mental powers, that men riſe ſuperior to all other animated beings in this planet.

RELIGION.

IN every country, however remote from civilization, traces of RELIGION, or of *ſuperſtition*, are diſcernible. The forms, the objects, and even the effects of religion, according to circumſtances and ſituations, aſſume different aſpects; but the ſentiments excited are nearly ſimilar. The ſavage who ſtarves and ſhivers in a [illegible]ary frozen region, though he believes the exiſtence of ſuperior beings, naturally regards them as cruel and unpropitious. But, in climates of which the genial warmth multiplies and matures the productions of Nature, the ideas of the characters of gods and goddeſſes become more mild and benign. Men, placed in circumſtances ſo highly favourable to happineſs, feel gratitude to the Author or Authors of the numberleſs comforts they daily enjoy. Furniſhed with food in abundance, and having perpetually before their eyes the moſt delightful ſcenery, they poſſeſs an hilarity of ſpirit, which makes them ever gay and vivacious. Gloomy ideas, and dreadful apprehenſions of futurity, are baniſhed from their thoughts. Still, however, death,

the many phyſical evils of life, and fortuitous calamities produced by the elements, by earthquakes, and by occaſional inundations, alarm their minds, and excite the idea of *bad* as well as of *good* DEITIES. Theſe notions of *good* and of *bad* ſpirits, who ſuperintended all human affairs at certain periods of ſociety, were univerſal in all religions of the ancient ſtates of which we have any hiſtorical knowledge. Greece and Rome were formerly overwhelmed with deluges of gods and goddeſſes, both ſuperior and infernal. Hills, mountains, rivers, ſprings, the earth, the ſea, the ſun, moon, and conſtellations, were all held ſacred, or conſidered as ſo many ſeparate deities, to whom diſtinct offices were aſſigned, and particular rites and ſacrifices performed at their reſpective ſhrines. Though men, by moral doctrines far more ſublime, and more conſonant to reaſon, were long ago favoured with the genuine principles of Theiſm, or of the exiſtence of One great CREATOR and Governour of the univerſe; yet many of the ancient ſuperſtitions, abſurd notions and practices, ſtill ſubſiſt in ſeveral populous nations of Europe, Aſia, &c.

[redacted] a very early period of Chriſtianity, a Prieſthood, or eccleſiaſtical Hierarchy, was eſtabliſhed. The ſimplicity, the purity, and the univerſal benevolence of the Chriſtian ſyſtem, could not be ſuddenly embraced by men who had long been habituated to the pompous impreſſions and exhibitions of Paganiſm, which had been rivetted in their minds. The early teachers of Chriſtianity perceived this alarming obſtacle to the propagation of the Goſpel. To remove this obſtacle, however, and to accommodate matters, theſe teachers, with, it muſt be ſuppoſed, the moſt zealous and upright intentions, adopted a number of heathen ideas and practices, and incorporated them with the faith of what was emphatically denominated the *Catholic Church*. The leaders and

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paſtors of this Church perceived the advantages they might derive from this motely jumble of Chriſtianity and Paganiſm. Between theſe two inconſiſtent, and naturally oppoſite ſyſtems of religion, the minds of men were confounded and intimidated. The power of the POPE, who was regarded not only as the head of the church, but as the *Vicar* or *repreſentative* of CHRIST upon earth, ſoon increaſed to ſuch an enormous degree, that, not the people only, but every Monarch in Europe, trembled at his *anathemas*, and ventured not to take any important ſtep, even in political affairs, without the approbation of his *Holineſs!* But the ambition of the POPE, and of his numerous tribes and orders of rapacious Prieſts, had no bounds. Not Kings and Princes alone, but the pooreſt private families, were laid under monſtrous contributions, to pamper the *ſtomachs*, and miniſter to the *luſts* of theſe *holy locuſts*, the moſt deſtructive and inſatiable of all *vermin*. The arts employed to promote theſe *diabolical*, falſely called *religious* purpoſes, were various, and ſometimes ingenious. The raptures of *heaven*, and the torments of *hell*, were depicted in the higheſt colourings which imagination could invent, or terror ſuggeſt. To procure the one, and to avoid the other, *money*, *goods*, or *victuals*, were the neceſſary articles of exchange. Thoſe mental tyrants, to complete their ſyſtem of deluſion and of depredation, ſealed up every ſource of information from the people, but what they choſe to impart in artful and diſguiſed forms. Factitious miracles were preſented to the vulgar and believing eye. *Abſolutions* for actual *crimes*, and *diſpenſations* from ceremonies and rules of the church, were *ſold*. A *purgatory*, or ſtate of temporary puniſhments to *ſouls* that were either to be eternally *damned* or *ſaved*, according to the *ſums* paid for the prayers of mercenary, and generally ignorant and ſubaltern prieſts, was invented. In a word, a thouſand tricks and impoſitions were employed to augment the power and

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riches of the church. The *Pope* became the greateſt Emperor that ever reigned on earth; for his dominion was not only territorial but mental. This inhuman and fordid deſpotiſm continued for many centuries, and ſo clouded the minds of men with ignorance, ſuperſtition, and timidity, that their natural powers were totally blunted. This period of *Papal* ſovereignty was afterwards, with much propriety, denominated the *dark ages*; for, whenever a ſpark of genius burſt through the univerſal gloom, it was inſtantly extinguiſhed by the authority of the church.

The ſpirits of men may, for a time, be depreſſed and debaſed by religious and political bugbears; but, from the hiſtory of human ſociety, we learn, that this humiliating and lamentable condition of mankind cannot always ſubſiſt. Some bold and enlightened minds ſtart up, aſſume their native rights, and, by their inſtruction and example, gradually looſen the chains of bigotry and oppreſſion. This happy revolution took place, though later than might have been expected, in the weſtern and northern parts of Europe. Amidſt the threatenings of *bulls*, amidſt *proſcriptions*, *murders*, and *maſſacres*, daily inroads were made upon the rapacious deſpotiſm of the Pope and his abhorrent aſſiſtants. Men of knowledge, and of generous and ardent minds, aroſe. The art of *printing*, which enabled them to diffuſe light and learning, was invented. The people ſaw with aſtoniſhment the ignorance and thraldom under which they had been enſlaved. They ſpurned at ſpiritual tyranny, and with indignation threw off its yoke. A reformation in religious opinions and in church-government was eſtabliſhed upon more rational principles. Since that glorious period, which does honour to human nature, the influence of this prepoſterous and infernal ſpecies of religion has gradually

gradually declined, and, by ſome late events, is now nearly annihilated; and, it is to be hoped, that nothing ſimilar will ever again inſult and diſgrace the characters of rational beings.

WAR.

BESIDE Religion, human nature is ſtamped with another univerſal character. *Hoſtilities* were coeval with the exiſtence of man, and ſtill continue to deluge the earth with blood. Avarice, reſentment, ambition, competition of intereſts, real or imaginary, are enumerated among the cauſes of *war*. But what, in the name of wonder, can be the *final* cauſe of cruelty, ſlaughter, and devaſtation? War, it has been ſaid, gives riſe to fortitude, vigilance, and other active powers of the mind. But, are there not a thouſand motives capable of exciting and calling forth theſe powers, without being attended by ſuch horrible effects? As an apology, it has been alleged, that, were it not for the intervention of war, men would increaſe to ſuch a degree that the earth could not afford them ſuſtenance. This attempt toward a ſolution of the difficulty is founded on ignorance or inatttention. There is not a country in the habitable parts of the world which, with proper induſtry and culture, is not much more than ſufficient to maintain the animals to which it gives birth. This final cauſe of war muſt, therefore, be relinquiſhed till ſuch an event, which is impoſſible, takes place. Nature has provided many effectual checks to a ſuperabundant population. One half of the human race periſh before they arrive at their ſeventh year. Thoſe who ſurpaſs this period of exiſtence are hourly cut off by innumerable diſeaſes and accidents. Few, very few, reach what is called *old age*, or fourſcore years.

Where,

Where, then, is the neceſſity which forces men to *exterminate* one another from the face of the earth? The *paſſions* were beſtowed upon us for the *wiſeſt* purpoſes; but we too often give to theſe paſſions a direction contrary to the original intentions of Nature. But why ſhould we be both *willing* and *able* to *pervert* the benevolent purpoſes of Nature? I will proceed no farther. The ſubject, though curious, is inextricable: I ſhall therefore diſmiſs it, by lamenting that ſtate of human nature which, even in the preſent *luminous* condition of Europe, is ſtill producing the moſt horrible, the moſt ſhocking examples of *madneſs* and *cruelty!* *.

POSTSCRIPT.

* Conſider Europe at the moment I write—*Quem Deus vult perdere prius dementat.*

POSTSCRIPT.

COMMODORE BYRON, in his Voyage round the World *, mentions the following circumſtances concerning the Patagonians he ſaw while he was in the Straits of Magellan. When he came to an anchor in the Straits, he obſerved a number of horſemen riding backward and forward, and waving ſome white ſubſtance as an invitation to come on ſhore; upon which he ordered out a twelve-oared boat, and made toward the beach. When Captain BYRON and his attendants came within a ſmall diſtance from the ſhore, they ſaw about five hundred people, ſome on foot, but the greater part on horſeback. No weapons were perceived among them. Signs, however, were made, that they ſhould retire a little from the ſhore, and they immediately complied. He drew up his people, with proper officers at their head, upon the ſhore, and gave orders that none of them ſhould quit their ſtations till he ſhould call or beckon to them. He then approached alone toward the Indians; but, as they always retired, he made ſigns that one of them ſhould come near. One of their number accordingly came. 'He was,' ſays Mr BYRON, 'of 'a gigantic ſtature, and ſeemed to realize the tales of monſters in a 'human ſhape. He had the ſkin of ſome wild beaſt thrown over 'his ſhoulders, as a Scotch Highlander wears his plaid, and was 'painted ſo as to make the moſt hideous appearance I ever beheld. 'Round one eye was a large circle of white; a circle of black ſur-'rounded the other; and the reſt of his face was ſtreaked with paint 'of different colours. I did not meaſure him; but, if I may judge 'of his height by the proportion of his ſtature to my own, it could 'not be much leſs than ſeven feet. When this frightful Coloſſus

* Hawkeſworth's edit. vol. 1. p. 27. *et ſeqq.*

'came up, we muttered ſomewhat to each other as a ſalutation; 'and I then walked with him towards his companions, to whom, 'as I advanced, I made ſigns that they ſhould ſit down; and they 'all readily complied. There were among them many women, 'who ſeemed to be proportionally large; and few of the men were 'leſs than the chief who had come forward to meet me.—They 'were all painted and clothed nearly in the ſame manner.—Their 'teeth were as white as ivory.—Except the ſkins, which they wore 'with the hair inwards, moſt of them were naked, a few only hav-'ing upon their legs a kind of boot, with a ſhort pointed ſtick faſ-'tened to each heel, which ſerved as a ſpur. Having looked round 'upon theſe enormous goblins with no ſmall aſtoniſhment, and with 'ſome difficulty made thoſe that were ſtill galloping up ſit down 'with the reſt, I took out a quantity of yellow and white beads, 'which I diſtributed among them, and which they received with 'very ſtrong expreſſions of pleaſure.' Commodore BYRON diſtributed other trinkets among them, ſuch as ribbons, &c. 'Their 'peaceable and orderly behaviour on this occaſion,' our author remarks, 'certainly did them honour, eſpecially as my preſents did 'not extend to the whole company. Neither impatience to ſhare 'the new finery, nor curioſity to gain a nearer view of me and what 'I was doing, brought any one of them from the ſtation that I had 'allotted him.'

Captain WALLIS * informs us, that he meaſured ſome of the Patagonians who appeared to be the talleſt; that one of them was ſix feet ſeven inches high; that ſome of them were ſix feet ſix, and others ſix feet five inches; but that the ſtature of moſt of them was from five feet ten to ſix feet. Their complexion, like that of the North

* Wallis's Voyage round the World, in Hawkeſworth, vol. 1. p. 374.

North American Indians, is of a dark copper colour. Their hair is ſtraight, and nearly as hard as the briſtles of hogs. They are well made, robuſt, and ſtrong; but their hands and feet are remarkably ſmall. They are clothed with the ſkins of the guanico, an animal which, in ſize, figure, and colour, reſembles a deer, but there is a bunch on its back, and it has no horns. It was remarked, that ſome of the men had a red circle painted round the left eye, and that others had their arms and different parts of their faces painted. The eye-lids of all the young women were painted black. They talked much; but, when ſpoken to in Spaniſh, Portugueſe, and Dutch, they made no reply. Of their language we were equally ignorant. They had a ſingular kind of miſſile weapon. It was compoſed of two round ſtones, covered with leather, each about a pound weight, and were faſtened to each end of a ſtring about eight feet long. This weapon they uſe as a ſling, one of the ſtones being kept in the hand, and the other is whirled round the head, till it has acquired ſufficient velocity, and is then diſcharged at the object. So dexterous are they in the management of this double-headed ſhot, that, at the diſtance of fifteen yards, they can hit a mark not larger than a ſhilling. In hunting the guanico or the oſtrich, however, they diſcharge theſe weapons in ſuch a manner, that the cord entangles the legs of the animals, who then become an eaſy prey.

'After I had ſpent about four hours with theſe people, I made ſigns 'to them that I was going on board, and that I would take ſome of 'them with me, if they were deſirous to go. As ſoon as I had 'made myſelf underſtood, above an hundred eagerly offered to viſit 'the ſhip; but I did not chuſe to indulge more than eight of the 'number. They jumped into the boats with the joy and alacrity 'of children going to a fair, and, having no intention of miſchief

'againſt us, had not the leaſt ſuſpicion that we intended any miſchief 'againſt them. They ſung ſeveral of their country ſongs while 'they were in the boat; and, when they came on board, did not 'expreſs either the curioſity or wonder which the multiplicity of 'objects, to them equally ſtrange and ſtupendous, that at once pre-'ſented themſelves, might be ſuppoſed to excite. I took them 'down into the cabin, where they looked about them with an un-'accountable indifference, till one of them happened to caſt his eyes 'upon a looking-glaſs, which afforded them infinite diverſion. They 'advanced, retreated, and played a thouſand tricks before it, laugh-'ing violently, and talking with great emphaſis to each other.— 'They eat indiſcriminately whatever was offered to them; but they 'would drink nothing but water. From the cabin I carried them 'all over the ſhip; but they looked at nothing with much attention, 'except the animals which we had on board for live ſtock. They 'examined the hogs and ſheep with ſome curioſity, and were ex-'ceedingly delighted with the Guinea hens and turkeys. They did 'not ſeem to deſire any thing they ſaw, except our apparel; and 'one of them, an old man, aſked for that. We gratified him with 'a pair of ſhoes and buckles; and to each of the others I gave ſome 'trinkets.—I ſhowed them the great guns; but they did not appear 'to have any notion of their uſe. After I had carried them through 'the ſhip, I ordered the marines to be drawn up, and go through 'part of their exerciſe. When the firſt volley was fired, they were 'ſtruck with aſtoniſhment and terror. The old man, in particular, 'threw himſelf down upon the deck, pointed to the muſkets, and 'then, ſtriking his breaſt with his hand, lay ſome time motionleſs, 'with his eyes ſhut. By this we ſuppoſed he intended to ſhow us, 'that he was not unacquainted with fire-arms, and their fatal effect. 'The reſt, ſeeing our people merry, and finding themſelves unhurt,

ſoon

'ſoon reſumed their cheerfulneſs and good humour, and heard the 'ſecond and third volley fired without much emotion; but the old 'man continued proſtrate upon the deck for ſome time, and never 'recovered his ſpirits till the firing was over. When the boat put 'off with them, they all began to ſing, and continued their merri-'ment till they got on ſhore *.'

Nootka Bay—Prince William's Sound.

THE inhabitants are generally of a ſhort ſtature, and ſquare-made. The faces, both of men and women, are flat and round, with high cheek-bones, and flattiſh noſes. Their teeth are white; their eyes dark, and quick-ſighted. Their complexions are whiter than thoſe of the ſouthern Indians; and ſome of the women have roſy-coloured cheeks. Their hair is black, ſtraight, and long; and, on the death of a friend, as a mark of mourning, they cut it ſhort. The legs of the men are, in general, ill ſhaped, which Captain PORTLOCK attributes to their ſitting perpetually in the ſame poſition in their canoes. They are as fond of what they eſteem perſonal ornaments; for they paint their faces and hands, bore their ears and noſes, and ſlit their under-lips. In the holes made in their noſes, they hang ornaments of bone or of ivory, which are often two or three inches long. At the ears they generally wear beads, which hang down to the ſhoulders; and, in the ſlit in the lip, they place a bone or ivory inſtrument with holes in it, from which they ſuſpend beads that reach as low as the chin. Theſe holes in the lip diſfigure them greatly; for ſome of them are as large as their mouths. With all this fancied finery, however, in their perſons they are extremely filthy, and over-

run

* Captain Wallis's Voyage round the World, Hawkeſworth, vol. i. p. 375. &c

run with vermin. Their clothing conſiſts entirely of the ſkins of quadrupeds and of birds. In general, they are a friendly people, and remarkably affectionate to their wives and children. But your attention to their women muſt be carried no farther than giving them preſents; for nothing irritates them ſo much as taking improper liberties with their females. Like all other Indians, they have a ſtrong propenſity to ſtealing, not only from ſtrangers, but from one another. 'In the courſe of my trading with them,' ſays PORTLOCK, 'I have frequently ſeen them ſteal from one another; 'and, on being detected, they will give up the articles they have 'ſtolen with a laugh, and immediately appear as unconcerned as if 'nothing had happened amiſs. I am ſure, that with them thieving 'is rather thought a grace than a diſgrace; and the complete thief 'is a clever fellow, but the burgling pilferer is leſs admired.— 'During our intercourſe with them, they grew leſs addicted to 'thieving, in conſequence of my ſometimes appearing a little angry 'with them, and taking ſome pains to convince them of the impro-'priety of their behaviour. Upon the whole, they appear a good 'kind of people; and I am convinced, in a little time, provided a 'ſettlement of ſufficient ſtrength were eſtabliſhed, would be an in-'duſtrious ſet of people, in hunting and procuring the ſea-otter and 'other ſkins for ſale to the ſettlers [*].'

Both men and women eſteem long hair as an ornament. When a relation dies, they cut their hair pretty ſhort, a general mark of mourning among all theſe Indian tribes. Polygamy ſeems not to be practiſed here; 'as I never obſerved,' PORTLOCK remarks, 'any 'one of them to have more than one woman, whom he ſeemed to 'conſider as his wife, to whom they pay very ſtrict attention, and 'treat

* Portlock's Voyage round the World, from the year 1785 to 1788, p. 249. &c.

'treat with a great deal of tenderneſs. You cannot affront them 'more than by attempting to make advances to their wives. They 'are likewiſe very fond of, and remarkably affectionate to, their 'children. It is not the cuſtom with thoſe people, as with the 'South Sea Iſlanders, for the men and women to eat ſeparately; nor 'are the women confined to eat meats of a particular deſcription; 'but for men, women, and children, to ſit down indiſcriminately at 'their meals, which chiefly conſiſt of fiſh of different kinds.— 'Their perſons are, in general, much about the ſize of Europeans. 'The men have a very fierce and ſavage aſpect, which, with their 'dreſs, gives them much the appearance of warriors. Their wea- 'pons of war are daggers and long pointed ſpears. They are very 'eaſily irritated, and would make very little ſcruple to kill you 'when they think themſelves injured. More than once I had near- 'ly experienced that fate, from ſome trifling diſagreements in trade. 'But, being pretty well acquainted with their tempers, I guarded as 'much againſt them as poſſible; and, on all occaſions, took care to 'be well provided for them, in caſe of an attempt, by keeping my 'piſtols ready-charged before me *.'

Captain PORTLOCK likewiſe informs us, that their women, if kept clean, inſtead of being perpetually covered with filth and naſtineſs, would be very agreeable. In general, their features are pleaſant, and their behaviour modeſt.

'The ineſtimable value of the American furs,' Captain PORTLOCK remarks, 'will ever make it a deſirable trade, and, whenever 'it is eſtabliſhed upon a proper foundation, and a ſettlement made, 'will become a very valuable and lucrative branch of commerce.

* Portlock's Voyage, p. 290. &c.

'It would be an eaſy matter for either Government or our Eaſt 'India Company to make a ſettlement of this kind; and the thin- 'neſs of the inhabitants will make it a matter of eaſy practicability; 'and, as the Company are under the neceſſity of paying the Chineſe 'in caſh for their teas, I look upon it a ſettlement on this coaſt 'might be effected at a very inconſiderable expence, which would 'more than pay them for every article that is brought from China.'

CHAP.

CHAPTER V.

Of Sleep and Dreaming.

SECT. I.

Of the Nature and efficient Cauſes of Sleep and Dreaming—Dreams characteriſtic of the Dreamer—Inſtead of a Diary, a Nocturnal would more effectually unfold the real Diſpoſitions of Men—Specimen of a Nocturnal—Utility of Dreaming—Dreams not peculiar to Man.

AMONGST the various powers and operations of the human mind, none make a more capital figure than that of the *imagination*. To this faculty we are principally indebted for that great variety of pleaſure and amuſement which make life agreeable, and reconcile us to the many pains and difficulties incident to our ſpecies. By imagination, as far as relates to the preſent ſubject, is meant, that operation of the mind which recals paſt ideas, or ſeparates and combines ideas in a manner ſo lively, that the objects they repreſent ſeem to have a real exiſtence, and affect us accordingly.

This definition of imagination, though by no means complete, is ſufficient for my preſent purpoſe. Every man *dreams* more or leſs. As far as I can learn, this ſubject has never been treated of in a rational or philoſophical manner *.

Sleep is the principal, though not the only ſource of dreams. I ſhall, therefore, make a few obſervations on that ſtate of our exiſtence which is ſo fertile in producing the phenomenon under conſideration.

Man, while awake, is a very paſſive animal. Independently of his own inclination, his eyes and ears are conſtantly receiving impreſſions from a multiplicity of external objects. He is likewiſe ſtimulated by his other ſenſes and bodily powers. His ſtomach muſt be alternately filled and emptied. The ſpring of his nerves and muſcles neceſſarily impels him to motion. The pain of inactivity itſelf is ſufficient to ſpur him on to action. But, no organ of the body, no faculty of the mind, can admit of long-continued action, without laſſitude or a diſpoſition to reſt.

During ſleep, our organs are no longer ſubject to receive impreſſions paſſively from external objects; the elaſticity of the nerves and muſcles is greatly relaxed; but the imagination, inſtead of being blunted, is whetted, and rendered more active. To give free ſcope to the imagination, it ſeems neceſſary that all communication with external objects ſhould be entirely cut off. Having curſorily mentioned the principal circumſtances and ſituations favourable to ſleep and dreaming, we ſhall next inquire whether any analogous circumſtances

* The ſubſtance of this chapter was read before the *Newtonian Society* of Edinburgh in the year 1764.

ſtances and ſituations exiſt when our ſenſes and other powers are awake.

The great variety of characters, tempers, and peculiar biaſſes exhibited in human nature, renders it difficult to ſelect any general turn of mind as a proper example for illuſtrating this ſubject. Theſe differences, however, are not confined to men when awake. Dreams, on the contrary, are as characteriſtic of the genius or diſpoſitions of any individual as his waking thoughts. A man whoſe ordinary train of thinking is quick and lively, will never find the quickneſs or vivacity of his perceptions retarded or blunted by ſleep. For elucidating this point, I ſhall make choice of a perſon who is naturally inclined to indulge reveries. Let us ſee how a perſon of this deſcription is affected by the common occurrences of life. We ſhall firſt ſuppoſe him walking along the ſtreets of a populous city. Numbers of objects preſent themſelves on every hand, and ſolicit his attention. Among others, the rapid motion and noiſe of a coach oblige him to fly ſuddenly to a ſide, in order to eſcape from danger. His fortunate eſcape at firſt gives him pleaſure. But, upon reflection, he cannot refrain from repreſenting to himſelf, by means of the imagination, how miſerably he ſhould have been bruiſed, had he been leſs ſwift in his movements. This thought continues to torment him, till it is baniſhed by ſome other idea which claims a ſuperior attention. Let us next view him in a ſolitary walk. Here, if his mind be perfectly calm, he indulges his fancy with ſome fictitious ſcene, in which, by a natural propenſity, himſelf is always the hero. Whether this ſcene be of a gay or diſtreſsful kind; whether the ſituation of his imaginary affairs demands courage, compaſſion, generoſity, or gratitude, he not only feels the ſentiments which theſe virtues inſpire, but his actions uniformly correſpond with his ſenti-

ments. Viſionary ſcenes of this kind are not always of a tranſitory nature. When the ſituation of the place, and the preſent diſpoſition of the mind, are favourable, a perſon often indulges that diſpoſition till he performs a complete drama.

We ſhall now ſuppoſe our man of ſenſibility to be placed on the top of a precipice, or on the brink of a deep pit. In theſe ſituations, his mind is ſwifter than his eyes; for he is generally down himſelf before he gets a ſight of the bottom. Some people are ſo much under the influence of imagination, that they have been obſerved to approach the mouth of a pit with cautious ſteps, and, as ſoon as they have looked down a few yards, fly back with horror, till they get far beyond the poſſibility of danger. Nay, ſo powerful is the imagination, and ſo prone to verify its ideas, that, were it counterbalanced by no other principle, a man would throw himſelf headlong from a precipice, merely to gratify his preſent feelings. Farther, when a perſon ſhuts his eyes, or rather when he is in an apartment without light; if, at the ſame time, he be alone, and his mind not ruffled or occupied by any painful ideas, then Fancy lays faſt hold of him, and turns his attention to ſuch objects as ſhe pleaſes to repreſent.

Not to multiply particular ſituations which are favourable to the operations of imagination, I ſhall only add another inſtance on account of its ſingularity.

Fevers, and ſeveral other diſtempers, by ſome unaccountable influence of the body upon the mind, almoſt totally deprive us of our reaſoning powers, and pervert our ſenſes to ſuch a degree, that we either miſtake common objects, or they make little or no impreſſion upon us. But, though theſe diſtempers deprive us of judicious reflection,

flection, and of regular impreſſions from the ſenſes; yet the train of our perceptions, which is the food of the imagination, inſtead of being interrupted, proceeds with the greater rapidity. I ſhall not attempt to aſſign reaſons why particular affections of the body impair or deſtroy the act of reaſoning or reflecting: I ſhall only remark, that the ordinary train of our perceptions is, in ſome meaſure, a mere involuntary progreſſion of ideas. But reaſoning is a very complex operation, and cannot be performed without the united efforts of almoſt the whole powers of the mind. Conſidering, then, the intimate connection between our mental and corporeal faculties, is it not extremely natural, that indiſpoſitions or derangements of the body ſhould more readily deprive us of a power whoſe operations are complex and difficult, than of that faculty the exertions of which are not only involuntary, but often act in direct oppoſition both to reaſon and inclination.

From the above analyſis, the following remarks are naturally ſuggeſted: *1ſt*, That the imagination, when not reſtrained by judgment, or checked by impreſſions from external objects, uniformly endeavours to complete any ſcene or ſet of ideas which happens to ariſe either from the ordinary train of perceptions, or from any ſtriking impreſſion received by the ſenſes; and, *2d*, That circumſtances or ſituations which tend to weaken our reaſoning or reflective powers, or to prevent the impreſſions of external objects, give additional force and activity to the imagination.

Theſe obſervations ſhall now be applied to *dreaming*. When a perſon is juſt about to fall aſleep, he feels a ſtruggle between reaſon and imagination. The former grows gradually weaker and weaker, while the vigour and activity of the latter continually increaſe till it completely

completely gains the aſcendant. Every man muſt have repeatedly felt this ſtruggle: But we are particularly conſcious of it when reaſon gets the better of imagination. All the time when a perſon is *between* ſleeping and waking, as it is termed, he is generally in eager purſuit after ſome airy phantom; but, if reaſon chances to prevail, he makes a ſudden ſtart, reſumes the power over his half dormant faculties, and wonders at his credulity in believing the actual exiſtence of ſuch fleeting fancies. Sleep, however, at laſt gains a complete victory; or, in other words, our reaſoning powers yield entirely to thoſe of the imagination. It was hinted above, that certain circumſtances are peculiarly ſuited to the exerciſe of the imagination; ſuch as, alarming or dangerous ſituations, ſolitude, tranquillity of mind, quieſcence of judgment, emancipation from the impreſſions of external objects, darkneſs, &c. Now, is it poſſible to conceive a more complete coincidence of all theſe circumſtances than takes place during ſleep? Shut up from every external impreſſion, involved in the blackeſt darkneſs, in a word, the imagination, freed from every check, roams at large, and triumphs without controul. Every idea that occurs, makes ſuch a lively impreſſion, that it produces a thorough conviction of the exiſtence and actual preſence of the object. This belief in the real exiſtence of imaginary objects conſtitutes the ſole difference between the ideas of imagination when aſleep, and the ſame ſpecies of ideas which occaſionally ſolicit attention in our waking hours. It only, of courſe, remains to inquire into the cauſes which produce this conviction or belief. We have already taken notice of ſome affections of the body which, in a great meaſure, have the power of realizing our imaginary ideas. Fevers, madneſs, and ſome other diſtempers, uniformly ſuſpend the power of reaſoning, which, as daily experience too frequently ſhows, makes the unhappy perſon loſe the faculty of diſtinguiſhing between the ideas of imagination

gination and the impreſſions received from real objects. Without going deeper, therefore, it is perhaps ſufficient to ſay, that ſleep is one of thoſe particular diſpoſitions of body which invariably produces this ſtrange effect.

The theory of *dreaming* is now, I imagine, pretty obvious. The following obſervations, however, will render it ſtill more intelligible. In the ſeveral ſituations in which I have ſuppoſed our man of ſenſibility to be placed, and, in general, whenever the imagination fixes upon any particular ſcene or event, were it not for the intervention of reflection, or the impreſſions of external objects, we ſhould uniformly purſue theſe ideas through all their relations as well when we are awake as when aſleep: Nay more; we ſhould be as thoroughly convinced of the real exiſtence of the objects, and as ſenſibly affected with the various incidents, as if we were in the moſt profound ſleep. For example: A man looks down with horror from the top of a high tower. Even the idea of abſolute ſafety is not ſufficient to make him eaſy: But, in order to obtain relief, he finds himſelf impelled to deſcend as quickly as poſſible. Now, in ſuch circumſtances, we are indebted to reaſon for the idea of ſecurity; and the loco-motive faculty enables us to deſcend. But, when the ſame or ſimilar ſituations occur to the imagination during ſleep, the acuteneſs of a perſon's feelings is greatly augmented. This increaſe of feeling, however, is not the only difference. The abſence or imbecillity of his reaſon excludes the idea of ſecurity; and the preſent inactive condition of his body creates a dreadful conſciouſneſs of utter inability to move in any other direction than that of tumbling headlong down.

SECT.

SECT. II.

Of the final Cauſes of Dreaming.

THAT muſic, ſprightly converſation, and, in general, every exerciſe that falls under the denomination of *amuſement*, recreates the mind more effectually than mere inactivity, is a fact which admits of no controverſy. Sleep, in one ſenſe, is nothing more than a total ſuſpenſion from action. But this inactivity is not, of itſelf, ſufficient for repairing that laſſitude of organs and waſte of ſpirits, which are the never failing offspring of vigilance and exerciſe. The all-wiſe Author of our exiſtence foreſaw this defect, and hath accordingly provided the proper remedy. When aſleep, the body, it is true, is inactive; but the imagination is vigorous: And, I may, from experience, venture to affirm, that the imagination uniformly conducts us to ſcenes that are of a gay, ſerene, and amuſing nature, unleſs the mind is ſoured by cauſes which excite diſagreeable ideas, unleſs the body is ſtruggling with diſeaſe or the ſeeds of diſeaſe, unleſs our characters and diſpoſitions are tinctured with malice, or haunted with remorſe. The gay and entertaining ſcenes preſented by the imagination during ſleep are much better adapted for recreating and invigorating our faculties than mere inſenſibility.

But this final cauſe of dreaming, however obvious, may appear liable to an objection. If this reaſoning be juſt, how does it happen, it may be ſaid, that diſagreeable dreams are ſo frequent? This objection, however, inſtead of injuring the former, ſuggeſts another excellent final cauſe.

So delicate is the conſtitution of man, that, beſide the many dangerous diſtempers to which he is conſtantly expoſed, there is a great variety of little uneaſineſſes, which, though not ſo alarming as to call forth the ſympathy of friends, are nevertheleſs capable of impairing the happineſs, and fretting the lives of individuals. There are ſome diſorders which almoſt elude our feelings, but, if not timely remedied, would probably cut off our exiſtence in a few moments. It is during ſleep that we are moſt liable to theſe ſecret diſorders. But, as ſhall immediately be ſhown, the effects theſe diſorders might produce are amply provided againſt by Nature. The chief cauſes of diſagreeable dreams may be reduced to two: 1. When a perſon is actually labouring under a diſtemper, or happens to lie in a poſture which diſturbs ſome of the animal functions. 2. When any painful idea occurs in the ordinary train of perceptions. The firſt cauſe ariſes from morbid derangements in the corporeal organs, which, by a benevolent and ſalutary inſtitution of Nature, communicate painful and horrid ideas to the mind. The only difference between theſe alarming ideas, and thoſe which we feel in ſimilar circumſtances while awake, is this: In the former, although our ideas excite the ſame ſpecies of feelings; yet theſe feelings are generally referred to ſome wrong cauſe. This common miſapprehenſion of the particular part really effected is, however, productive of no bad conſequences: A furious engagement with the devil, an interview with the ghoſt of a departed friend; or, in general, ſome horrible ſcene generally comes

to our aid, and gives ſuch a briſk ſhock to the conſtitution as ſeldom fails, in caſes, at leaſt, where a longer continuance in ſleep would be hurtful, to rouſe us into reaſon and ſafety. Being thus ſuddenly awaked, the cauſe of our diſagreeable dream, whether it derives its origin from a hurtful poſition of the body, or any irregularity in the motions of the fluids, is now not only clearly perceived, but inſtantaneouſly removed. Perſons, therefore, who are ſo unfortunate as frequently to ſtand in need of diſagreeable dreams, inſtead of complaining of the pain and horror they occaſion, ought to regard them as kindly meſſengers ſent to relieve them from a diſeaſe, of which they would be totally ignorant, but which, without their friendly interpoſition, would probably have put a final period to his exiſtence.

The ſecond cauſe of diſagreeable dreams is derived from the particular temper or diſpoſition of the dreamer's mind previous to ſleep, or to painful ideas accidentally occurring in the ordinary train of perceptions. Here it is worthy of remark, that, during ſleep, our ideas of pleaſure and pain are greatly augmented. Pain, in particular, commonly riſes to ſuch an excruciating degree, that it rouſes us from ſleep entirely. Every man, at ſome time or other, has had an imaginary fall from a great height. But I doubt much if any perſon ever arrived at the bottom. He feels himſelf moving in the air; he even reflects on the terrible effects which muſt reſult from this fall. But, before that horrid cataſtrophe happens, he never fails to awake. It is impoſſible to determine what the conſequences would be, were the imagination allowed to complete ideas of this deſtructive nature. The effects they produce, even without being completed, are very violent. Alarmed with terror, the motions of the fluids are increaſed to a hurtful degree; cold ſweats are produced; the ears tingle; and great confuſion is perceived in the brain. Now, if the

imagination were allowed to complete ſuch ideas, theſe noxious effects would at leaſt be greatly augmented; their number too would be increaſed; and it is difficult to determine, whether a perſon who falls from a precipice in imagination would not undergo the ſame fate as he who does ſo in reality. Men who have the misfortune to be ſubject to diſagreeable dreams, learn by experience to know that they are *dreaming*. When terrified with impending danger, and even death, I have often ſaid to myſelf, 'Don't be ſo much alarmed: You have been in the ſame or in ſimilar ſituations, which 'were uniformly diſcovered to be *dreams*.' This ſpecies of dormitory reaſoning greatly alleviates the pain, and not unfrequently gives an oppoſite direction to the imagination.

Another final cauſe muſt not be omitted. It would be improper, however, to confine this cauſe ſolely to ſuch dreams as are occaſioned by ſleep; becauſe it is fully as conſpicuous, and perhaps more uſeful, in thoſe exertions of imagination, which are incidentally indulged when our ſenſes are in a ſtate of vigilance and activity. It has been remarked above, that the imagination, in ſituations favourable to its operations, uniformly leads us into ſcenes of action which give riſe to the exerciſe of the reſpectable and benevolent virtues. We have all, at one time or another, ſuppoſed ourſelves poſſeſſed of a great fortune. When indulging this ſpeculation, we never fail to imagine, that we would behave with the utmoſt condeſcenſion to our inferiors; that we would cheriſh and reward the virtuous, patroniſe the learned, ſupport the indigent; and, in a word, that we would exerciſe the moſt unbounded generoſity and beneficence. Upon a curſory view of this ſubject, ſome people are apt to think, that a propenſity to indulge reveries of this nature has its foundation in vanity, and are inclined, from that conſideration, to curb and reſtrain it as vain and preſumptuous,

preſumptuous, or, at beſt, as a frivolous mode of employing our thoughts. It merits attention, however, that nature never gives an original propenſity to the mind, but with a view to produce ſome beneficial purpoſe. But it will appear, from the following conſiderations, that the propenſity to indulge fancied ſituations, and the particular conduct prompted by theſe ſituations, is wiſely calculated to ſtrengthen and promote the virtue of individuals.

Although we ſhould never actually be poſſeſſed of the ſuppoſed great fortune; although theſe imaginary ſcenes ſhould never happen; yet, ſo various are the incidents and ſituations which may fall out in the courſe of any man's life, that ſituations and incidents, if not preciſely the ſame with thoſe he may have figured in his imagination, at leaſt reſembling them in their principal circumſtances, will undoubtedly occur. Now, when any circumſtances in life demands the exertions of benevolence, compaſſion, courage, fortitude, or reſignation, will not we be better prepared to act with dignity and propriety, than if theſe circumſtances had occurred before we had any previous intimation from our feelings how our conduct ought to be directed on ſuch intereſting occaſions? Hence the indulgence of aereal, though poſſible ſcenes of action, has an evident tendency to ſtrengthen our virtue, to enlarge our experience, to improve the vivacity of our pleaſurable feelings. Of courſe, inſtead of checking, it is our duty to encourage the reveries of fancy, provided her calls are not ſo frequent as to interrupt purſuits of a more important nature.

SECT.

SECT. III.

Every Perſon may derive Advantage from Dreams.

TO know one's ſelf is the moſt important of all knowledge, and, at the ſame time, the moſt difficult to attain. Mankind are ſo artful in diſguiſing the real motives of their actions, ſo ingenious in deceiving themſelves, ſo averſe to the diſcovery of vice or imperfection in their ſentiments or behaviour, ſo keenly engaged in the occupations of life, and ſo prone to contraſt themſelves with the moſt profligate of the ſpecies, that they generally reſt ſatisfied with their condition, and ſeldom inquire with any degree of impartiality into the real character or temperature of their minds. A more ſimple method of acquiring a knowledge of ourſelves muſt be acceptable to every perſon who thinks himſelf intereſted in the inquiry. This end, I preſume, may be accompliſhed by a moderate attention to our dreams. *Dreaming* muſt here be underſtood in the moſt common acceptation of the word; for an inquiry into the natural tendency of imagination while awake, would engage us in a ſtruggle with all the obſtructions to ſelf-knowledge formerly ſuggeſted. Let us, then, attend to thoſe particular vices which we are moſt inclined to indulge in ſleep. That vice which is moſt frequently and moſt luxuriouſly indulged in our dreams, may ſafely be eſteemed our predominant paſſion. Though

motives

motives of intereſt, decency, and the opinions of our friends, may have reſtrained us from actual gratification, and created a deluſive belief that we are no longer ſubject to its ſollicitations; yet, if the imaginary gratification conſtitutes an agreeable dream; if it is then indulged without check or remorſe, we may freely conclude, that we ſtill remain its humble votaries, and that thoſe motives which deter from actual indulgence are not the genuine motives which virtue inſpires.

This method of diſcovering our real characters, it may be ſaid, is more uncertain, and attended with greater difficulty than deliberate ſelf-examination. But, we ſhould reflect, that, during ſleep, the mind is more ingenuous, leſs inclined to palliate its real motives, leſs influenced by public opinion, and, in general, more open and candid, than when the ſenſes are awake. It is true, that, by the return of external objects, buſineſs, and intercourſe with the world, dreams are apt to eſcape from the memory, and that this circumſtance, in ſome meaſure, deprives us of the advantages which might otherwiſe reſult from them. This is, indeed, the only difficulty we have to encounter; but it is not unſurmountable. It may be removed by a few minutes labour every morning. Let any perſon who wiſhes to know his real character, as ſoon as he gets up, revolve, as accurately as he can, thoſe thoughts which made the deepeſt impreſſion upon him while he was aſleep, what ſcenes gave him pleaſure or pain, what actions he approved or diſapproved, and let him inſtantly write them in a book kept for the purpoſe. In oppoſition to a *Diary*, this book may be entitled *A Nocturnal*. The nocturnaliſt, however, muſt be careful to give a candid account of his ſleeping tranſactions, marking with accuracy the various feelings which the particular incidents excited. At firſt, perhaps, his buſineſs will be ſoon c[illegible]d. But the

the mere habit of writing, ſo ductile is the human mind, will ſoon make him both more attentive to his dreams, and increaſe his faculty of remembering them.

For the ſake of illuſtration, and to ſhow that this ſcheme is not impracticable, I ſhall ſubjoin, as a ſpecimen, the capital ſcenes of a few nights dreams which I recorded thirty years ago.

Specimen of a NOCTURNAL.

THE firſt night I found myſelf in a moſt tremendous ſituation. Alarmed by a ſudden ſhock attended with a hollow ſubterraneous noiſe, I ran out to the ſtreets of this populous city, in order to diſcover the cauſe. A dreadful proſpect preſented itſelf to view. The ground began to undulate like the waves of the ſea; ſheets of fire dazzled the eye; pales of thunder ſtunned the ears; the buildings ſplit in a thouſand directions; and, had not the native horrors of the ſcene ſoon reſtored me to reaſon, I ſhould infallibly have been cruſhed to atoms.

The ſecond night's entertainment, though not ſo alarming, was much more extravagant and ludicrous. I was for ſome time diverted with a furious diſpute between Dr MONRO and Dr WHYTT concerning the uſes of the *Deltoid Muſcle!* The combatants at length became ſo hot, that they were juſt proceeding to give the diſpute an effectual termination by the intervention of the cudgel, when I awoke; and behold it was a dream!

The third night, I found myſelf in the midſt of a brilliant company

of ladies and gentlemen. Chearfulneſs and innocence ſeemed to beam from every countenance. I was treated with the utmoſt affability and complaiſance. My heart began to exult with the moſt pleaſant emotions. The muſic ſtruck up; each took his fair partner by the hand, and a ſprightly dance immediately commenced. My ſpirits were much more elevated than I ever had experienced on any former occaſion. I moved through the various evolutions of the dance with as much eaſe and alacrity as if my body had been a mere vehicle of air. But, in the midſt of this enchanting ſcene, while ſetting to a young lady, my *breeches* fell plump to my heels! I quickly attempted to lay hold of them; but in vain. The very power of reaching forth my hand was abſtracted from me. I remained fixed as a ſtatue, and the dance was interrupted. The bluſhes of the company diſcovered how ſenſibly they felt my misfortune; but none had the courage to aſſiſt me. In ſhort, the feelings peculiar to ſuch a whimſical ſituation became at laſt ſo exquiſitely painful, that I ſhould infallibly have fainted away, had not ſleep inſtantly departed, and reſtored me to reaſon and joy.

The fourth night's employment was ſtill more ſerious and awful. I ſaw a groupe of winged angels deſcending from the ſky. One of them, who ſeemed to lead and command the reſt, had a large golden trumpet in his hand. When near the ſurface of the earth, he ſounded the inſtrument, the noiſe of which made all Nature ſhrink. He announced the arrival of the laſt day, that day when the quick and the dead are to be judged, and receive everlaſting rewards or torments, according to the merit or demerit of the deeds done by individual mortals. Aſtoniſhment and anxiety arreſted all the living. They ſtood motionleſs, and looked aghaſt. A new ſcene inſtantly appeared. I ſaw the dead riſing in myriads all around me. I particularly

cularly remarked, that, in the *Grey-friars* church-yard, *hundreds* of both ſexes puſhed one another out of the *ſame graves!* The day was ſo cold and froſty, that the terrified expectants of doom were all ſhivering. Another phaenomenon ſolicited my attention. I ſaw immenſe numbers of *leaden pipes* filled with *cold water.* Another trumpet was ſounded, and the angel proclaimed, that, inſtead of being roaſted in the *flames* of hell, the *damned* were to have their *limbs* eternally immerſed in theſe *water pipes.* Terrified, and half-petrified with this frigifying idea, I got the ſtart, and awoke. Upon examination, I found, that, by ſome accident, my limbs had been uncovered, and were exceſſively cold. This ſimple incident produced the whole ſcenery I have repreſented.

But here I muſt ſtop, leſt I ſhould diſcover more of my own character than would be conſiſtent with prudence.

SECT. IV.

Of Ominous Dreams.

THE frequent accounts of ominous dreams we meet with in hiſtory, joined to the many ſtories which are daily related, ſufficiently juſtify a few remarks upon the queſtion, Whether ſupernatural ſuggeſtions are to be expected in dreams?

To deny the poſſibility of ſupernatural ſuggeſtions either when aſleep or awake, would be both preſumptuous and abſurd. On the contrary, I can conceive a ſuperior being ſo thoroughly acquainted with the human frame, ſo perfectly ſkilled in the connection and mutual dependence which ſubſiſt between our intellect and our ſenſitive organs, as to be able, by titillating, in various modes and directions, particular combinations of nerves, or particular branches of any ſingle nerve, to excite in the mind what ideas he may think proper. I can likewiſe conceive the poſſibility of ſuggeſting any particular idea or ſpecies of ideas, by affecting the nerves in the ſame manner as theſe ideas affect them when excited by any other cauſe.

The notion of dreams, however, being frequently ſuggeſted by ſuperior beings, is founded partly in ignorance, and partly on a fond regard

regard which men are apt to indulge for every thing that relates to themſelves. If it accidentally occurs to a man's mind, which is by no means an uncommon caſe, that a friend is ſick, dead, or in circumſtances of great diſtreſs; to ſatisfy himſelf, he inquires into the ſituation of this perſon. Inſtead of finding him in the miſerable circumſtances he had fancied, he perhaps ſees him not only in health, but making merry with his companions. This deluſive and accidental impreſſion is diſcovered to be falſe in every circumſtance; and, of courſe, it is for ever concealed. But, ſuppoſing his friend to have actually been in the ſituation which he had imagined; then the caſe is entirely reverſed. He is no longer aſhamed of his fond conception. On the contrary, he doubts not that it proceeded from a ſupernatural cauſe; and hence, to gratify his vanity, he tells it on all occaſions, in order to inſinuate his uncommon connection with heavenly powers.

Allowing that events and ſituations which mankind repreſent to themſelves, by means of the imagination, do ſometimes actually happen; yet this circumſtance is not wonderful. Conſidering the activity and wanderings of the imagination, it is ſurpriſing that ſo few examples of this kind occur. We never hear of the numberleſs inſtances where there is no coincidence between the events and the previous imagination. But, whenever they chance, even in ſlight relations, to coincide, which is extremely ſeldom, they are noiſed abroad with eager induſtry.

Theſe obſervations apply to dreaming with accumulated force. In ſleep, the imagination is much more active, and the time ſpent in fanciful repreſentations is vaſtly greater than when we are awake. A greater variety of incidents, of courſe, occur in dreaming. Is it not, then,

then, extremely ſtrange, conſidering the natural diſpoſition of the mind to gueſs at future events, that a man ſhould continue to dream, both day and night, for fifty or ſixty years together, without, perhaps, being able to recollect a ſingle inſtance of his foreſeeing any particular event?

Upon the whole, were the examples of ominous dreams more frequent, and better authenticated than they generally are, they might with great propriety be aſcribed to cauſes merely fortuitous, and totally independent of any ſupernatural impulſe or ſuggeſtion.

SECT.

SECT. V.

Of the Second Sight, or a Prophetic Power.

THE obſervations made in the two foregoing ſections may, with much propriety, be applied to what is called the *Second Sight*. The perſons ſaid to be poſſeſſed of this faculty of ſeeing actual repreſentations, or pictures of future events, are, in Scotland, chiefly confined to the Highlands and weſtern iſlands. Like many other prophets, both ancient and modern, our profeſſors of *Second Sight* are illiterate, vulgar, and viſionary beings. Their pretenſions, however, are not mercenary. They neither aſk nor receive money for their ſuppoſed predictions. In this, as well as in all other countries, while the people remain in a ſtate little removed from abſolute barbariſm, ſuperſtition ſpontaneouſly ariſes from a thouſand cauſes; poverty, idleneſs, high and rugged mountains, bleak heaths, a ſterile ſoil, naturally excite gloomy and frightful ideas in uninformed minds. Our Highland *ſeers* are exactly in this melancholy ſituation. Their predictions, or rather reveries, accordingly, are all expreſſive of deaths, and other human calamities.

About thirty years ago, a moſt abſurd publication appeared at Edinburgh under the title of *A Treatiſe on Second Sight*, in which more

than a hundred inſtances are related, almoſt the whole of them portending diſaſtrous events. Were it not with a view to baniſh, as far as I can, a notion ſo diſgraceful to our country, and ſo humiliating to human nature, I ſhould not have deigned to ſully my book with the following ſpecimen: 'DONALD MACKINNON, an honeſt tenant in *Haliſtra* in *Waterniſh*, relates, that, in harveſt 1760, in 'the duſk of the evening, as he was binding and putting together 'corn, on a ſudden he ſaw a neighbour of his foremoſt, and followed by a pretty throng gathering of people, carrying a corpſe 'directly through a ſtanding corn-field of his own, which he was 'not well-pleaſed at; however, through *fear* that it might be a *viſion*, 'he did not chuſe to challenge his neighbour. He told what he had 'ſeen to his wife and family when he came home, ſaying, If it was 'a *viſion*, it would undoubtedly be verified ere long; and, to ſatisfy 'his mind concerning what he had ſeen, went early next morning 'to view the ſtanding corn, to ſee if any of it was trode down, but 'not one ſtalk. About the ſame time next year, he ſaw his neighbour, the company and corpſe, in reality, coming through the ſame 'field from *Griſhinniſh*, to bury it at the church-yard of *Trumpan* *.'

This ſimple example comprehends the ſpirit and tendency of the whole book; for every ſtory it contains is equally ridiculous.

But here we muſt pauſe: The learned and ingenious Dr SAMUEL JOHNSON, who, ſome years ago, honoured Scotland, and even its Hebrides, with a viſit, from ſimilar ſtories, was credulous enough to believe in the *ſecond ſight*. The Doctor's definition of this ideal faculty is curious. 'The *ſecond ſight*,' ſays he, 'is an impreſſion made either by the *mind* upon the *eye*, or by the *eye* upon the *mind*, by

* Treatiſe on Second Sight, p. 159

'by which things *diſtant* or *future* are perceived, and *ſeen* as if they 'were *preſent* *.' To comprehend this definition would require a man to be poſſeſſed of both the *firſt* and *ſecond ſights!*

To do juſtice to the Doctor, however, though he execrates, with a ſuperſtitious meanneſs, that form of church-government called *Preſbyterianiſm*, and prefers to it even *Papal deſpotiſm*; yet, upon this ſubject, he involuntarily and awkwardly makes a very great and a very juſt encomium on the good ſenſe and general character of our Highland clergymen. 'The iſlanders,' he remarks, 'of all degrees, 'whether of *rank* or *underſtanding*, admit of it (*i. e.* the ſecond 'ſight) except the *miniſters*, who univerſally deny it, and are ſuſ-'pected to deny it, in conſequence of a *ſyſtem*, againſt *conviction*. 'One of them honeſtly told me, that he came to Sky with a *reſo-'lution* not to believe it †.'

It is not incurious to remark, that men, even poſſeſſed of diſtinguiſhed parts, when urging any favourite topic, frequently contradict themſelves, and, from abſolute nonſenſe, inadvertently recur to ſenſe. Of this, the following lines of Dr JOHNSON afford a ſtriking example: 'Strong reaſons,' ſays the Doctor, 'for incredulity will 'readily occur. This faculty of *ſeeing* things out of *ſight* is local, 'and commonly *uſeleſs*. It is a breach of the common order of 'things, without any *viſible* reaſon or *perceptible* benefit. It is 'aſcribed only to a people very little enlightened; and among them, 'for the moſt part, to the *mean* and the *ignorant* ‡.' The celebrated author of theſe juſt obſervations was a firm believer in the exiſtence of *ſecond ſight!* 'The *foreſight* of the *ſeers*,' ſays Dr JOHNSON,

* Johnſon's Journey to the Weſtern Iſlands of Scotland, p. 152. Edin. edit. 1792.

† Ibid. p. 154. ‡ Id. ibid.

is not always *preſcience*: They are impreſſed with images, of which the event only ſhews the meaning

Dr JOHNSON admits what is well known to all our Highlanders, that the perſons ſaid to poſſeſs this faculty are, in general, ignorant, dozing, indolent creatures, who never work, ſpeak ſeldom, and ſpend whole days gaping and gazing ſtraight forward, without altering their poſition, or taking the ſmalleſt notice of what paſſes around them. The whole employment of their minds, it ſhould appear, is occupied with viſionary phantoms: It is not ſurpriſing, therefore, that they ſhould, at one time or other, ſtumble upon ſcenes or events, to which ſomething ſimilar afterward happens.

In the year 1779, the Reverend Mr DONALD M'NICOL publiſhed *Remarks* on Dr JOHNSON's Journey to the Hebrides, a book written with much ſpirit, good ſenſe, and acuteneſs of reaſoning. Being born and bred in the Highlands, Mr M'NICOL muſt be allowed to have had better opportunities of knowing the diſpoſitions, manners, and faith of his own countrymen, than a prejudiced Engliſhman, who was ſo *ſhort-ſighted*, that he could not *ſee* a *tree* in Scotland, though he paſſed many extenſive woods and groves, both natural and planted. To ſhow the light in which Mr M'NICOL viewed the narrative of the Doctor's Journey, I ſhall tranſcribe a few lines on the ſubject of *ſecond ſight*.

'In page 248. our traveller,' Mr M'NICOL remarks, 'comes to 'examine the queſtion of the *ſecond ſight*; and it is truly ſurpriſing 'to ſee with what a *credulous weakneſs* he endeavours to defend ſo '*viſionary* an opinion. Other things, which are believed by every man

* Johnſon's Journey, &c. p. 156.

'man in the country, which are probable in themſelves, and are 'ſupported by all the evidence that a reaſonable man could expect, 'the Doctor often *rejects*; but *this* point, *abſurd* in itſelf, uncoun-'tenanced by any *decent* authority, and to which only a few of the '*moſt ignorant vulgar* give the *leaſt faith*, he maintains with a '*zeal* which ſhews him to be *aſhamed* of nothing but *thinking* like '*other* men *.'

Even on the ſuppoſition that ſuch a faculty as *ſecond ſight* exiſted, the queſtion may be aſked, *Cui bono?* For what end ſhould men be endowed with a power, which can only ſerve to torment them with unneceſſary alarms? Though we were enabled to ſee impending calamities, but deprived, as we are, of the capacity of preventing them, inſtead of a happy attainment, it would render us perpetually miſerable. The evils of human life are already ſufficiently numerous; and Nature, for wiſe purpoſes, has hid futurity from our eyes.

Like many other ſuperſtitions, that of *ſecond ſight* muſt vaniſh in proportion as knowledge and civilization advance; and it is a pleaſure to learn, that it is now nearly extinguiſhed even in the Weſtern Iſlands of Scotland.

SECT.

* M'Nicol's Remarks on Dr Samuel Johnſon's Journey to the Hebrides, p. 191.

SECT. VI.

Of Somnambuliſts—Hiſtory of Two who fell under the Author's Obſervation.

ANOTHER remarkable phenomenon, which is ſometimes exhibited in ſleep, merits attention.—Some people, during ſleep, retain the faculties of ſeeing, hearing, ſpeaking, walking, laughing, crying, and, in general, doing almoſt every thing they are accuſtomed to perform when they are awake. Near thirty years ago, I had an opportunity of examining a ſtriking example of *ſomnambuliſm.* Within a mile of Edinburgh, I happened to reſide ſome time in a farmer's houſe. Mr BAIRD, my landlord, had a ſervant maid, whoſe name was *SARAH.* I was not long there, when I learned from the family, that SARAH, particularly after receiving an affront, or being angered, was accuſtomed to riſe in her ſleep, to go out, and to walk about the fields. My curioſity was excited; and I begged to be informed the firſt time that SARAH ſhould riſe in her ſleep. A few nights afterward, one of Mr BAIRD's ſons awaked me, and told me that SARAH had got out of bed. I immediately haſtened to the apartment where ſhe ſlept. When I arrived, Mr and Mrs BAIRD, one of their ſons, and a ſervant maid, SARAH's companion, were preſent. SARAH was in the midſt of them. She was ſlightly and carelelsly clothed. Her neighbour ſervant perſuaded her

her to ſit down. I took my ſeat by her. We began immediately to converſe. She anſwered any queſtions that were put to her pretty diſtinctly; but ſhe always miſtook the perſon who ſpoke for ſome other, which gave us an opportunity of aſſuming any character within the circle of her acquaintance. I knew that one of the farmer's ſervants, whoſe name was JOHN PORTEOUS, was a lover of her's; and, therefore, I addreſſed her in the ſtyle which I ſuppoſed JOHN might ſometimes have done. From that moment ſhe began to ſcold me, upbraided me with ſeveral breaches of promiſe to marry her, and deſired me, in the moſt peremptory manner, never again to ſpeak to her on that topic. The converſation was accordingly changed. I talked of her miſtreſs, who was in the room, becauſe I knew that they had occaſional quarrels. Till now, I ſuſpected that the whole was a trick, but for what purpoſe I could not diſcover. SARAH, however, abuſed Mrs BAIRD in the harſheſt terms. She ſaid, but the other day, ſhe had been accuſed of ſtealing and drinking ſome bottles of ale; that her miſtreſs was ſuſpicious, cruel, and narrow-minded. As the miſtreſs of the houſe was preſent, when theſe and other opprobrious terms were uſed, I began to doubt my preconceived notion of impoſture; and, therefore, changed the object of my experiments and inquiries. I examined her countenance, and found, that her eyes, though open, wild, and ſtaring, were not abſolutely fixed. I took a pin and repeatedly pricked her arm; but not a muſcle moved, not a ſymptom of pain was diſcoverable. At laſt, ſhe became impatient to get out, and made ſeveral attempts to eſcape by the door; But that was prevented by the domeſtics. Perceiving her inability to force the door, ſhe made a ſudden ſpring at the window, and endeavoured to throw herſelf over, which would have been fatal to her. To remove every ſuſpicion of impoſture, I deſired the people, with proper precautions to prevent harm, to try if ſhe would really precipitate

pitate herſelf from the window. A ſeemingly free acceſs was left for her eſcape, which ſhe perceived, and inſtantly darted with ſuch force and agility, that more than one half of her body was projected before her friends were aware. They, however, laid hold of her, and prevented the dreadful cataſtrophe. She was again prevailed upon, though with much reluctance, to ſit down. She ſoon reſumed her former calmneſs, and freely anſwered ſuch queſtions as were put to her. This ſcene continued for more than an hour. I was perfectly convinced, notwithſtanding my original ſuſpicions, that the woman was actuated by ſtrong and natural impulſes, and not by any deſign to deceive. I aſked if any of the attendants knew how to awaken her. A female ſervant replied, that ſhe did. She immediately, to my aſtoniſhment, laid hold of SARAH's wreſt, forcibly ſqueezed and rubbed the projecting bones, calling out, at the ſame time, SARAH, SARAH! By this operation SARAH awoke. She ſtared with amazement, looked around, and aſked, how ſo many people came to be in her apartment at ſo unſeaſonable an hour? After ſhe was completely awake, I aſked her, what was the cauſe of her reſtleſs and violent agitation? She replied, that ſhe had been dreaming that ſhe was purſued by a furious *bull*, who was every moment on the point of goring her.

A pretty ſimilar example afterwards occurred. Mr THOMAS PARKINSON, then a ſtudent of medicine in the univerſity of Edinburgh, was accuſtomed to talk and to anſwer queſtions in his ſleep. This fact was known to his companions. To amuſe ourſelves, two of us went gently into his chamber while he was aſleep. We knew that he was in love with a young lady in Yorkſhire, the place of his nativity. We whiſpered her name repeatedly in his ear. He ſoon began to toſs about his hands, and to ſpeak incoherently. He gra-

dually became more calm and recollected. His imagination took the direction we intended. He thought he was ſtationed under the lady's window, and repeatedly upbraided her for not appearing and ſpeaking to him as ſhe had ſo often done on former occaſions. At laſt, he became impatient, ſtarted up, laid hold of books, ſhoes, and every thing he could eaſily graſp. Thinking his miſtreſs was aſleep, he threw theſe articles againſt the oppoſite wall of his chamber. By what he ſaid, we learnt, that his imaginary ſcene lay in a ſtreet, and that he was darting the books and ſhoes at the lady's window, in order to awake her. She, however, did not appear; and, after tiring himſelf with frequent exertions, he went quietly into bed without wakening. His eyes were nearly ſhut; and, although he freely converſed with us, did not ſeem to perceive that any perſon was preſent with him. Next day, we told him what had happened; but he ſaid, that he had only a faint recollection of dreaming about his miſtreſs.

In the French Encyclopedie, under the word *Noctambule*, we have an account of a ſtudent of divinity in the univerſity of Bourdeaux, who was accuſtomed to riſe in his ſleep, and to read and write without the uſe of his eyes. The fact is atteſted by the Archbiſhop of BOURDEAUX, who thought it a phaenomenon worthy of his attention. Leſt he ſhould have been deceived by the young man, he interpoſed an obſtacle between his eyes and the paper on which he was writing, or reading. But he read and wrote in the ſame manner, and with equal accuracy, as if no ſuch obſtacle had exiſted *.

A recent and authentic account of a ſleep-walker has been publiſhed

* This fact is likewiſe related by the learned and ingenious Lord MONBODDO, in his *Antient Metaphyſics*, vol. 1. p. 159.

ed on the continent, and now tranſlated into Engliſh under the title of *A true and ſurpriſing Account of a Natural Sleep-Walker, read before the Philoſophical Society of Lauſanne in Switzerland, on the 6th of February* 1788. This ſleep-walker's name is DEVAUD. At the time the following experiments and obſervations were made upon him under the direction of the ſociety, he was between thirteen and fourteen years of age. His conſtitution was weakly, and his nerves extremely irritable. The ſociety appointed three of its members, Dr LEVADE and Meſſrs REYNIER and VAN BERCHEM, to make and report their obſervations on the ſleeping exertions and behaviour of this young man. Theſe gentlemen faithfully executed the injunctions they had received, and reported the reſults of the experiments they had made, and whatever authentic relations they procured from others.

His ordinary ſleep, which is ſeldom tranquil, when about to be ſeized with a fit of Somnambuliſm, is uncommonly diſturbed. While in this ſtate, he is affected with involuntary motions; his heart palpitates; his tongue faulters; and he alternately riſes up and lies down. On one of theſe occaſions, the gentlemen remarked, that he ſoon articulated more diſtinctly, roſe ſuddenly, and acted agreeably to the motives of the dream which then occupied his imagination. When too quickly roufed by a violent noiſe, or other cauſes, he is ſometimes ſeized with convulſions. After a paroxyſm, he complains of being fatigued, and, on ſome occaſions, is affected with ſickneſs and vomiting. At firſt, when he awoke, and found himſelf dreſſed, and in the midſt of ſeveral perſons, his ſurpriſe was great. But, after the habit of ſomnambuliſm had continued for ſome time, recollection of ſimilar events, as formerly remarked with regard to diſagreeable dreams, gradually diminiſhed his ſurpriſe. The ideas of a boy at

ſchool muſt neceſſarily be few and ſimple ; and, of courſe, his dreams can admit of little variation. His daily verſions, cyphering, the church ſpires, and bells, but chiefly tales of ghoſts and hobgobblins, were the principal objects of his nightly viſions. When his mind was impreſſed with particular ideas before going to ſleep, which is nothing uncommon, theſe ideas frequently conſtituted or gave a direction to his dreams.

The gentlemen examinators mention ſome effects of electricity and magnetiſm upon our ſomnambuliſt. But, in the tranſlation, (for I have not ſeen the original), the facts are obſcure, unintereſting, and ſometimes even contradictory ; and, therefore, ſhall be paſſed over in ſilence.

With regard to the young man's *ſenſes*, we are told, that iron, braſs, and ſilver, applied to his noſtrils, made no impreſſion ; but that a bit of cedar, as well as the fingers of another perſon, gave him ſome uneaſineſs. In one of his paroxyſms, they preſented to him a piece of bread, and ſome wormwood wine. The latter he immediately diſtinguiſhed by the ſmell, and ſaid, *This is not our table wine.* He was afterwards furniſhed with a little common wine, which he inſtantly drank. As he was walking along, wrapt up in ſome dream, two of the gentlemen put themſelves in the way he was directing his courſe ; but he paſſed between them, without being offended, or ſeeming to be conſcious of the preſence of any obſtacle. He dreſſed himſelf with great propriety in a room which was perfectly dark : He ſelected his own clothes from a number of others which had been purpoſely jumbled together, and complained that ſome of his companions had made ſport of him. When his eyes were perfectly ſhut, he touched, in preſence of the gentlemen, ſeveral objects, and readily diſtinguiſhed

diſtinguiſhed thoſe which he had ſeen before from thoſe he had not. A book that did not belong to him was put into a drawer where he kept his papers: When he felt the book, he expreſſed great anxiety leſt he ſhould be ſuſpected of theft.

His ſenſe of *hearing* while aſleep was very accurate. In one of his reveries, he fancied that he was ringing the bell of St Martin's church, and performed all the neceſſary motions. After this operation was finiſhed, he was aſked how long he had rung? he anſwered, *four minutes*. He took a candle with a deſign to light it: But one of the company, not perceiving that he held it in his hand, remarked in a low voice, that *he had forgot his candle*. *Of what uſe are your eyes*, ſaid DEVAUD, *if you don't ſee it?*

When our ſleep-walker wiſhes to *ſee* any object, he makes an effort to open his eye-lids, which he does very imperfectly, and with much difficulty. The ball of the eye, on theſe occaſions, appears to be fixed and languid. On this ſubject Mr N. —— makes the following remarks: 'When I accompanied the ſleep-walker, I remained 'always behind him, or by his ſide; and very often without touch-'ing him. I put my face under his, to obſerve if his eyes were 'really ſhut; and I found them always cloſed. However, after 'walking ſome ſteps in this poſture, he uſually diſcovered me by the 'noiſe of my feet, and went a little aſide. When I ſtill followed 'him, he raiſed his head, drew up his eye-brows with difficulty, and 'made an effort to open his eyes. This he could do only by halves, 'yet ſo as to perceive me: *Don't ſtand in my way*, he ſaid, and held 'on at the ſame pace. As the moon ſhone, I had an opportunity of 'examining his eyes very narrowly, and was convinced, that the dif-'ficulty he experienced in opening them proceeded from the inaction

'of the upper eye-lid, which he could not move without firſt raiſing 'the eye-brows *.'

The gentlemen examinators made many other experiments upon this ſleep-walker. But as, in general, they are of a ſimilar nature with thoſe already related, it is unneceſſary to give more examples.

Upon this curious ſubject, I muſt mention a ſingular converſation which happened in my houſe many years ago. The company conſiſted of the learned and ingenious Dr REID, at preſent Profeſſor of Morals in the Univerſity of Glaſgow, and the no leſs learned and ingenious Dr BLACKLOCK, both well known in the literary world. Dr REID, among many other queſtions, aſked Dr BLACKLOCK, if he had any idea of light? Dr BLACKLOCK replied, that he had not, being deprived of ſight ſo early as the ſecond year of his exiſtence. Dr REID then aſked him, if there was any difference between his ideas of perſons and objects when he *dreamed*, and thoſe which were excited while awake? Dr BLACKLOCK replied, that the difference was great; that he doubted whether he could communicate this difference in ſuch a manner as to be underſtood; but that he would make the attempt. His anxiety to pleaſe and inform made his explanation at firſt ſo obſcure and perplexed, that it could not be underſtood. This perplexity he perceived; retracted what he had ſaid as unintelligible; and, with ſome degree of exultation, exclaimed, 'Now I have it.' He then told us, that, when awake, he could diſtinguiſh perſons three ways: The moſt perfect of which was that of hearing them ſpeak; but he could alſo recogniſe an acquaintance by feeling his head and ſhoulders. The third mode of diſtinction was by attending, without the aid of ſpeech, to the ſound and manner of breathing.

* See the above mentioned Pamphlet, p. 25.

breathing. He then proceeded, and told us, that, in ſleep, the objects which preſented themſelves to his imagination were more vivid, and that without the intervention of any of the three modes mentioned above, he had diſtinct perceptions of *diſtant objects* both animated and inanimated. Being aſked by what means he thought theſe impreſſions were conveyed to him, he replied, that he imagined his body was united to theirs by a kind of *diſtant contact*, which was effected by the inſtrumentality of *threads* or *ſtrings* which proceeded from their bodies to his own; and that mutual ideas were conveyed by *vibrations* of theſe *ſtrings*. The Doctor could not come nearer to the point; for, though what he ſaid did not amount to ideas excited by actual *viſion*, yet the approach was aſtoniſhingly near.

SECT

SECT. VII.

Some unconnected Facts concerning Sleep and Dreaming.

MAN is not the only animal that dreams. From many facts, and a very extenſive analogy, it is almoſt certain, that every animal dreams more or leſs. Dogs bark in their ſleep. This barking is indeed feeble; but the ſounds peculiar to the chace, to anger, to deſire, to complaint, &c. are eaſily diſtinguiſhable. I have often regretted, that ingenious men, when ſupporting favourite theories, ſhould ſo frequently relate the groſſeſt abſurdities. The celebrated M. DE BUFFON, *in his Diſſertation on the Nature of Animals*, gravely tells us, 'that *idiots*, whoſe *minds* are totally *inactive*, *dream* 'like other men: *Dreams*, therefore, are produced independent of '*mind*. Brute animals, though they have *no mind*, not only *dream*, 'but I am tempted to think, that all *dreams* are independent of '*mind**.' A moſt brilliant ſentiment, and moſt *logically* expreſſed! Dreaming, thinking, or even feeling, without the intervention of *mind*, involve ideas beyond the limits of human underſtanding.

When about to ſleep, moſt animals chuſe a particular poſition of body. The camel places his head between his fore feet; the monkey,

* Buffon, vol. 3. p. 256. Tranſlat.

like man, lies on his ſide; moſt birds ſleep with their head under one wing. The pſittacus galgulus, a ſpecies of parrot, hangs by one foot on the branch of a tree; and ſome ſpiders, and other inſects, ſuſpend themſelves by their fore legs.

A horſe, when in good health, lies not above two or three hours at a time, and ſeldom ſleeps more than three or four hours in the twenty-four. Some horſes never lie down, but ſleep ſtanding; and even thoſe which are accuſtomed to lie down, ſometimes ſleep on their feet. The aſs ſleeps ſtill leſs than the horſe; and, for that purpoſe, never lies down, except after great fatigue *. The heavieſt and moſt ſluggiſh animals do not ſleep the longeſt or the moſt profoundly. The ſlumbers of the ox are light and ſhort. He is roufed by the ſlighteſt noiſe: He generally lies on the left ſide; and the left kidney is always larger and fatter than the right †. The ſleep of cats, is, in general, light; but ſometimes they have been ſeen ſleeping with much more profoundneſs than moſt other animals ‡. The ſow-kind ſleep longer than moſt quadrupeds.

Man, perhaps, ſleeps longer than any of the larger animals. Beſide the natural waſte occaſioned by exerciſe and labour, the perpetual activity of his mind fatigues the body, and renders a greater quantity of ſleep neceſſary.

Badgers ſleep the whole night and three-fourths of the day; yet, like the marmottes or dormice, they are ſubject to a lethargic or benumbed ſtate during winter. This great quantity of ſleep, though they eat little, makes them very fat; for this reaſon, they are enabled to

* Buffon, ibid. p. 416.

† Ibid. p. 442.

‡ Ibid. vol. 4. p. 55.

to endure hunger a long time, and often remain in their holes three or four days together, without receiving the ſmalleſt nouriſhment.

Another affection, peculiar to the ſtate of ſleep, is the *incubus*, or *night-mare*. This affection, in general, is produced by indigeſtion, and by eating too much, and particularly of fleſh-meat, at ſupper. It is likewiſe ſometimes occaſioned by lying, while aſleep, on the back, and the bed-clothes, of courſe, preſſing on the breaſt. From whatever cauſe the *night-mare* proceeds, it is uniformly accompanied with great terror, and a ſenſe of ſuffocation; for by the preſſure of wind, or ſome other cauſe, upon the lungs, reſpiration is either prevented, or very much impeded. The ſenſations excited by this cauſe are always of the moſt excruciating nature. The imagination preſents the ideas of ſome ſpectre or demon lying on the breaſt, or of ſituations which neceſſarily infer ſuffocation and death. When the ſufferer attempts to throw off the load, or to eſcape from the impending danger, he diſcovers a total inability to move any of his members. This circumſtance augments his terror and his pain, and, at laſt, baniſhes ſleep. When he awakes, the *imaginary weight, or cauſe of terror*, is removed, and the power of motion is reſtored. But the palpitations of the heart, and the confuſion of the brain, remain for ſome time, till the paroxyſm is completely finiſhed; and then the whole is recogniſed to have been only an imaginary deluſion *

* *If the reader is deſirous of ſeeing a more full diſcuſſion of this ſubject, he may conſult* Dr Willis, *De Anima Brutorum*, a learned and ingenious work, publiſhed in the year 1672.

CHAPTER VI.

Of thoſe Animals who ſleep, or continue in a torpid ſtate, during Winter.

THAT ſtate of animal exiſtence denominated *ſleep*, may be conſidered as an univerſal affection. Almoſt every animated being is ſubject to its dominion. As formerly remarked, ſome animals require more and others leſs ſleep, according to their conſtitutions and other circumſtances. But there are many animals who continue to ſleep during the whole months of winter. While in this condition, they neither move nor take food; and yet they revive on the approach of ſummer. Of theſe a few examples ſhall be laid before the reader.

It is well known, that many quadrupeds and inſects remain in a torpid ſtate during winter; but it is a remarkable fact, that not a ſingle ſpecies of birds, except the ſwallow and cuckoo, have ever been ſuppoſed to ſleep during the winter months. With regard to the ſwallow-tribe, I muſt refer the reader to my firſt volume, where this ſubject is amply diſcuſſed *.

The

* Philoſ. of Nat. Hiſt. vol. 1. p. 473.

The land-tortoiſe is a very long-lived animal. Mr WHITE * gives an account of one that lived more than forty years in a little walled court. During that period, it regularly retired under ground about the middle of November, and came forth again about the middle of April. On its firſt appearance in the ſpring, it diſcovered very little inclination for food; but, in the height of ſummer, it was very voracious. As the ſummer declined, its appetite grew leſs; and, during autumn, it hardly ate any thing. In the month of April 1780, Mr WHITE informs us, 'a moiſt and warm afternoon, with 'the thermometer at 50, brought forth troops of *ſhell-ſnails*; and, 'at the ſame juncture, the *tortoiſe* heaved up the mould and put out 'its head; and the next morning came forth, as it were raiſed from 'the dead, and walked about till four in the afternoon †.'

The *Alpine marmots*, on the approach of winter, retire to their ſubterranean abodes, the entrances to which they ſhut up with earth or clay. In this ſituation they continue to be plump for three months; but afterwards they gradually decay, and are extremely emaciated at the end of winter. When diſcovered in their retreats, they are found to be rolled up in the form of a ball, covered with hay; and they are carried off by the hunters in a ſtate ſo torpid, that they may be killed without ſhowing the ſmalleſt ſymptom of pain. They may be revived by a gradual and gentle heat; and thoſe which are tamed and fed in houſes never become torpid, but are as lively and active in the winter as in the ſummer. Their holes are deep, and they live together in numbers. The fatteſt are ſelected for eating, and the young ones are preſerved for taming ‡.

The

* White's Nat. Hiſt. of Selborne, p. 135, &c.

† Ibid. p. 262.

‡ Buffon, vol. 4. p. 344. Tranſlat.

The different ſpecies of *bats* ſleep during the winter months. The final cauſe of their torpidity is obvious. In that ſeaſon, there are no moths, or other flying inſects, the chief food of bats. Hence, if Nature did not confer this faculty, or rather inactivity, upon them, a ſingle winter would annihilate the ſpecies. 'The prevailing no-'tion,' ſays the Honourable DAINES BARRINGTON, 'that they 'hang always in cluſters touching each other, is not true, as this 'depends entirely upon their having a proper opportunity of adher-'ing to the place from which they are ſuſpended; they ſometimes, 'therefore, are in contact, and often at conſiderable diſtances, but 'always fix themſelves by both their feet *.' It is a well known fact, that bats, whilſt in a torpid ſtate, evacuate their dung, and, of courſe, both the circulation of the blood, and a certain degree of muſcular action, continue to be exerted. Mr CORNISH applied a thermometer to the body of a bat when perfectly torpid; the liquor ſtood at 36, and the heart beat 60 times in a minute. When awakened ſo much that the ſame animal could fly a little, the thermometer was again applied, the liquor roſe to 38, and the heart beat 100 times in a minute.

Some animals who ſleep during winter, may be kept awake by ſupplying them with warmth and proper food. Of this kind are the bear, the viper, and the common houſe-fly, which, under theſe circumſtances, continue alert and cheerful through the whole year.

The *fat ſquirrel*, a quadruped about ſix inches in length, the *ſciurus glis* of LINNÆUS, remains in a torpid ſtate during winter. Its internal heat exceeds not that of the air. When the heat of the air is ten degrees above the freezing point, the temperature of the *fat ſquirrel*,

* Daines Barrington's Miſcellanies, p. 166.

ſquirrel, the *dormouſe*, and the *garden ſquirrel*, is preciſely the ſame, as M. de BUFFON diſcovered by plunging the ball of a thermometer into their bodies. We cannot, therefore, be ſurpriſed that theſe animals, whoſe natural heat is ſo inconſiderable, ſhould fall into a benumbed ſtate, whenever their internal heat is not augmented by that of the external air, which uniformly happens when the liquor in the thermometer does not riſe ten or eleven degrees above the freezing point. Cold is the true cauſe of the torpid ſtate of what are called the *ſleeping* animals. This torpid ſtate continues as long as the cauſe by which it is produced, and ceaſes with the cold. A few degrees above ten or eleven is ſufficient to revive them; and, if kept in a warm place during winter, they are never benumbed, but go about, and eat and ſleep like other animals. When they feel uncommonly chilled, in order to expoſe leſs ſurface to the air, and to preſerve their natural warmth, they roll themſelves up in the form of a ball. It is in this form that they are found, during winter, in hollow trees, and in holes of walls expoſed to the ſouth. In theſe holes they lie upon collections of moſs and leaves, without the ſmalleſt motion; and, though toſſed about, they neither extend themſelves, nor diſcover the leaſt ſymptom of life. From this dormant condition nothing can rouſe them but the application of a gentle and gradual heat; for, when ſuddenly placed near a fire, they uniformly die. Though, in this ſtate, they are totally deprived of motion, though their eyes are ſhut, and the animals ſeem to have loſt every ſpecies of ſenſation; yet they feel any acute pain. When burned or wounded, they contract their bodies, and utter low and repeated cries. Their ſenſibility, therefore, and the action of the heart and lungs, ſtill ſubſiſt. It is obvious, however, that theſe vital motions are but feeble. The circulation of the blood, it is probable, proceeds in the large veſſels only; for the reſpiration is ſlow and feeble, the

ſecretions

ſecretions are inconſiderable, and no excrements are voided. In long and rigorous winters, they ſometimes die in their holes. They periſh not, it ſhould appear, by the loſs of ſubſtance from perſpiration; for in autumn they are exceedingly fat; and equally ſo when they revive in the ſpring. As cold is the chief, if not the only cauſe of their torpor, and as they do not fall into this ſtate till the temperature of the air is below ten or eleven degrees, they frequently revive during the winter; for, in that ſeaſon, many days often occur when the liquor in the thermometer riſes to twelve, thirteen, fourteen, and even higher degrees above the freezing point. In weather of this kind, the dormice either come out of their abodes in queſt of food, or eat part of what they had amaſſed in autumn.

The *Hamſters*, or German marmots, on the approach of winter, retire into their ſubterraneous abodes, where they remain in perfect tranquillity, and feed on their proviſions till the froſt becomes ſevere, when they ſink into a torpid ſtate. During this period of their exiſtence, if the holes be opened, the hamſter is found lying on a bed of ſtraw. His head is bended under his belly between the two forelegs, and thoſe behind reſt upon his muzzle. The eyes are ſhut; and, when the eye-lids are forced open, they inſtantly cloſe again. His members are ſtiff, like thoſe of a dead animal, and the whole body feels as cold as ice. Neither reſpiration, nor any other ſign of life, can be perceived. When diſſected in this ſituation, the heart alternately contracts and dilates. Theſe movements, however, are ſo ſlow, that the pulſations do not exceed fifteen in a minute; though, when the animal is awake, the heart, in the ſame time, beats an hundred and fifty ſtrokes. The fat ſeems to be coagulated. The inteſtines are equally cold with the external parts of the body, and, upon the application of ſpirit of wine, or oil of vitriol, diſcover not the

ſmalleſt degree of irritability. During this operation, the animal ſeems to have very little feeling. As if he wanted to reſpire, he ſometimes opens his mouth. But his torpor is too powerful to admit of his awaking entirely.

This lethargy of the hamſter has been aſcribed ſolely to the effects of a certain degree of cold, which may be true with regard to the bats and dormice; but, in order to render the hamſter torpid, beſide cold, he muſt likewiſe be excluded from all communication with the external air: For, when ſhut up in a cage, filled with earth and ſtraw, and expoſed to a degree of cold ſufficient to freeze water, the hamſter never becomes torpid. When the cage, however, is ſunk four or five feet under ground, and ſecured againſt the acceſs of air, in a few days, he is equally torpid as if he had been in his own burrow. If the cage is brought up to the ſurface, the hamſter, in two or three hours, awakes, and reſumes his torpid ſtate when again put under the earth. When paſſing from a torpid to an active ſtate, the hamſter firſt loſes the rigidity of his members, and then makes profound reſpirations, but at long intervals. His legs begin to move, he opens his mouth, and utters rattling and diſagreeable ſounds. After continuing theſe operations for ſome time, he opens his eyes, and endeavours to raiſe himſelf on his legs. All theſe movements, however, are ſtill unſteady and reeling, like that of a man intoxicated with liquor. But he reiterates his efforts, till he acquires the faculty of ſtanding on his legs. He remains, for ſome time, fixed in that attitude, as if he meant to reconnoitre, and to repoſe himſelf after his fatigue. He now gradually begins to walk, to eat, and to act in his uſual manner. According to the temperature of the air, this paſſage, from a torpid to an active ſtate, requires more or leſs time. In a cold air, he is generally more than two hours before he completely awakes;

awakes; but, in a more temperate air, he accompliſhes this purpoſe in leſs than one hour. It is probable that this change is produced imperceptibly when the animal remains undiſturbed in his hole, and that he feels none of the inconveniencies which ariſe from a forced and ſudden reviviſcence

The *Hedgehog* is one of thoſe quadrupeds which lie in a dormant ſtate during the winter months. Some years ago, that ingenious, learned, and dexterous anatomiſt, Dr ALEXANDER MONRO, made ſome experiments upon the hedgehog, as well as upon frogs, though he informs me †, that he did not proſecute theſe experiments with all the accuracy and attention which the curioſity of the ſubject merits. During a ſevere winter, he kept a hedgehog in a room, where there was no fire from the month of November till March. He placed near the animal boiled beef, bread, cheeſe, potatoes, water, and ſtraw. About the beginning of December 1764, the hedgehog was affected with an unuſual degree of drowſineſs. He, however, continued to eat, though more ſparingly, till the 25th of that month. From that time till the 8th day of March following, he continued in a profound ſleep, except when artificially rouſed. After being thus rouſed, he ſoon walked back to his place of retreat, and reſumed his dormant ſtate. On the 25th of December, he weighed thirteen ounces and three drachms; on the 6th of February eleven ounces and ſeven drachms; and, on the 8th of March, eleven ounces and three drachms. The Doctor obſerved a ſmall quantity of feculent matter and urine among the hay. At the time of his actual reviviſcence, no perſon was preſent; and, of courſe, the circumſtances attending it are unknown. In the courſe of three months, he did not perceive

* For theſe and ſimilar facts, ſee Buffon and many other natural hiſtorians.

† In a letter, dated March 1794.

that the hedgehog had either ate or drank; but it remained conſtantly in a profound ſleep among the ſtraw. Its limbs, however, were never rigid; but it loſt two ounces of its weight. *Frogs*, which the Doctor kept during the winter in a veſſel with water, ſeemed to be in a ſimilar ſtate with that of the hedgehog.

From every example we have enumerated, it appears, that extreme cold, and an excluſion from a free acceſs to the operation of the external air, are the principal cauſes which produce the torpidity of certain brute animals. We ſhall now make a remark upon what happens to the human ſpecies when expoſed to great cold, eſpecially if accompanied with bodily fatigue. Men in this ſituation, of which fatal inſtances too often occur, feel an almoſt irreſiſtible inclination to lie down to reſt. When they yield to this propenſity, being benumbed with cold, they ſoon fall aſleep; and this ſleep infallibly terminates in death. Thoſe animals, however, who ſleep during the winter, uniformly not only retire below ground, or into ſome other receſs, but cover themſelves with ſubſtances which reſiſt ſuch deleterious effects of cold as would deſtroy their exiſtence. If man and the larger animals, when benumbed and actually aſleep from the operation of cold, were placed in ſimilar circumſtances, it is probable they might be induced to ſleep a very great length of time, and again awake without ſuffering much injury.

CHAP.

CHAPTER VII.

Of the Language of Beaſts.

UNDER the term *beaſts*, in the courſe of this chapter, I comprehend all thoſe animals, of every claſs, who are inferior in mental powers to the human ſpecies. We can only perceive the language of beaſts by attending to the particular cries they make, and to the influence which theſe cries have upon the feelings and actions of their aſſociates. This ſubject is very copious. But I muſt limit myſelf to a few facts, accompanied with ſuch remarks as they may occaſionally ſuggeſt.

I ſhall begin with the claſs of quadrupeds. But it is neceſſary to inform my readers, that by the *language of beaſts*, I mean not what is called *articulate* or *artificial* language, but ſuch vocal *ſounds* as are expreſſive of different feelings, wants, and deſires, by which animals are enabled to communicate particular ſentiments to each other.

In oppoſition to *artificial* language, the nature of which depends upon convention or agreement, and ſometimes upon mere accident, there is a *natural* language which is common to man and to moſt of the

the inferior animals. Men poſſeſs both theſe ſpecies of language; but the brute animals are limited ſolely to natural language. Brutes, by uttering certain ſounds, are enabled to communicate their feelings, whether external or internal, to every individual of the ſame ſpecies. Theſe aſſemblages of inarticulate ſounds are uniformly the ſame, and, contrary to what takes place in the artificial language of man, ſuffer no variation from climate or inſtitution, but are equally intelligible in every diviſion of the globe.

The *elephant* loves the ſociety of his equals, and can make himſelf to be underſtood by them. Elephants are often obſerved to aſſemble in troops, to act in concert, and again to diſperſe. Theſe movements are not accidental, but produced by certain ſounds and geſtures; and, though they carry on no common operation, this circumſtance may, perhaps, be aſcribed to the want of room and of tranquillity; for, in all countries inhabited by the elephant, men have been very antiently multiplied; he is, therefore, perpetually diſturbed, and no where poſſeſſes peaceably ſufficient ſpace to eſtabliſh ſecure and permanent abodes. Elephants, in a wild ſtate, are neither ſanguinary nor ferocious. Their natural diſpoſitions are gentle, and they never make an improper uſe of their arms or their ſtrength; for they exert their offenſive talents only in defending themſelves, or in protecting their companions. Their manners are ſocial. They commonly march in numerous troops; the eldeſt precede; the young and the feeble are placed in the middle; and thoſe of middle age and full of vigour bring up the rear. The mothers carry their young firmly embraced in their trunks. This order, however, they obſerve in perilous marches only, as when they intend to paſture on cultivated fields. In the deſerts and foreſts, they travel with leſs precaution, but never ſeparate ſo far as to exceed the poſſibility of receiving aſſiſtance from each other.

other. When alarmed with any dangerous attack, they utter *cries* expreſſive of their ſituation and want of aſſiſtance. The meaning of theſe cries is perfectly underſtood by all the elephants within the reach of hearing; and they immediately run with eagerneſs to the relief of their diſtreſſed or apprehenſive companions. When an elephant diſcovers a plentiful paſture, he *calls* to the others, and invites them to partake of his good fortune. From the great ſagacity with which Nature has endowed him, he ſoon becomes acquainted with the language, geſtures, and deſires of men. He is, of courſe, eaſily tamed, inſtructed, and rendered ſubmiſſive and obedient. As he is ſtronger as well as more intelligent than any other animal, his ſervices are more ready, more extenſive, and more uſeful. When the hunters go in queſt of a wild elephant, they carry along with them into the foreſt a tamed female in ſeaſon; and, when they imagine themſelves to be near enough to be heard, her governour makes her utter the *cry* of love. The wild male inſtantly *replies*, and haſtens to join her. She is then made to march towards an incloſure, pitfal, or other ſnare, repeating, from time to time, the ſame alluring cry, till he is completely deceived and caught. In a domeſtic ſtate, the elephant ſoon learns to underſtand ſigns, and even the meaning of words, ſounds, and geſtures. He diſtinguiſhes the tones of command, of anger, and of approbation, and regulates his actions accordingly. He never miſtakes the voice of his maſter; but receives his orders with attention, executes them with prudence and alacrity, but without any degree of precipitation; for his movements are always meaſured, and his character ſeems to partake of the gravity of his maſs. After this animal has had time to learn the *language* of his conductor, *words* alone are ſufficient to make him perform whatever is required of him. The eyes of the elephant, in proportion to the magnitude of his body, are very ſmall, but lively, brilliant, and highly

highly expreſſive of ſentiment. He turns them ſlowly and with mildneſs towards his maſter. When he ſpeaks, the animal regards him with an eye of friendſhip and attention; and his penetrating aſpect is conſpicuous when he wants to anticipate the inclinations of his governour. He reflects, deliberates, thinks, and never determines till he has ſeveral times examined, without paſſion or precipitation, the ſigns or commands which he ought to obey. As the elephant is naturally grave and moderate, we eaſily read in his eyes, whoſe movements are ſlow, the order and ſucceſſion of his internal affections. The *cry* of the elephant, whether excited by love or other ſenſations, is heard and underſtood at the diſtance of more than a league; but it does not, like the roaring of the lion or tyger, create terror. When the *cornack*, or conductor of the elephant, wiſhes to have ſome laborious office performed, he explains the nature of the operation, and mentions the reaſons which ſhould induce him to obey. If the elephant ſeems reluctant, his conductor promiſes to give him arrack, or ſome other thing of which he is fond. But it is extremely dangerous to break any of theſe promiſes. Many cornacks have fallen victims to indiſcretions of this kind. A well authenticated fact, on this ſubject, happened at Dekan. An elephant, from ſome motive of revenge, killed his cornack. The man's wife, who beheld the dreadful ſcene, took her two children and threw them at the feet of the enraged animal, ſaying, 'Since you have ſlain my huſband, take 'my life alſo, as well as that of my children.' The elephant inſtantly ſtopped, relented, and, as if ſtung with remorſe, took up the eldeſt boy with its trunk, placed him on its neck, adopted him for its cornack, and would never afterwards allow any other perſon to mount it.

Among

Among the larger ſpecies of animals, the *camel*, the *dromedary*, the *horſe*, &c. not only expreſs, by particular ſounds, their own wants, or deſires, their pleaſures and pains, but, when in a domeſtic ſtate, learn the meaning of *words*, and know diſtinctly how to obey the commands of their maſters. A troop of camels, when travelling in the ſandy deſerts of Africa, after a repoſe, the moment they are *deſired*, bend their knees, and lie down to be again loaded. Theſe gentle and inoffenſive creatures muſt ſuffer much; for, eſpecially when over-loaded, or when too long in want of water, they expreſs their uneaſineſs by uttering the moſt lamentable cries. In marching through the deſert, the camels require neither whip nor ſpur; but, when they begin to be tired, their courage is ſupported, and their fatigue is ſoftened, by *ſongs*, or by the ſound of ſome muſical inſtrument. Their conductors relieve each other in ſinging. When time is likely to be too much prolonged, the animals are occaſionally allowed to reſt only about an hour; after which, the ſongs are renewed till they arrive at another reſting place, when they again lie down. In this manner, and by theſe means, the camels, with heavy loads, perform journies almoſt incredible.

The language of the *horſe* is not extenſive. Mares and geldings neigh leſs frequently than perfect horſes. Their voices alſo are neither ſo deep nor ſo full. In horſes of every kind, whether entire or mutilated, five ſpecies of neighing, expreſſive of different paſſions, are diſtinguiſhable. In the neigh of *joy*, the voice is long protracted, and begins and terminates with ſharp ſounds: The horſe, at the ſame time, flings, but without any inclination to ſtrike. In the neigh of *deſire*, whether proceeding from love or friendſhip, the horſe does not fling, the voice is long continued, and finiſhes with graver tones. The neigh of *anger*, during which he flings

and ſtrikes with fury, is very ſharp and ſhort. Neither is the neigh of *fear*, during which he likewiſe flings, longer than that of anger; the voice is grave and hoarſe, and ſeems as if it proceeded entirely from the noſtrils. This neigh has ſome reſemblance to the roaring of a lion. The noiſe expreſſive of *pain* is not properly a neigh, but a kind of groan or ſnorting uttered with a grave tone, and following the alternate motions of reſpiration. It has been remarked, that horſes which neigh moſt frequently, from motives of joy or deſire, are the moſt generous and healthy. The voice of unmutilated horſes is ſtronger than that of geldings or of mares. The female voice, even from the moment of birth, is weaker than that of the male. At two, or two and a half years, which is their age of puberty, the voices of both males and females, as in man and moſt animals, become ſtronger and more grave. In that large and thinly peopled country, comprehended between the rivers Don and Nieper, in the Ukraine, and among the Coſſacks, the wild horſes aſſociate in troops of three, four, or five hundred. The conduct and behaviour of theſe troops ſeem to indicate, that men are not the only animals who live in ſociety and obey, by compact, the commands of one of their own number. Each of theſe troops have a chief to whom they give implicit obedience. By geſtures, movements, and *voice*, he directs their courſe, and makes them proceed or ſtop at his pleaſure. When the troop is attacked by robbers, or by wolves, this chief likewiſe gives *orders* for the neceſſary arrangements and actions. He is extremely vigilant and alert, runs frequently round the troop, and, when he finds any horſes out of their rank, or lagging behind, he commands and obliges them to take their proper ſtations. Theſe animals, without being mounted or conducted by men, march in nearly as good order as our trained cavalry. Though at perfect liberty, they paſture in files and brigades,

gades, and form different companies, without ever mixing or ſeparating. The chief occupies this important and laborious office four or five years. When he becomes weaker, and, of courſe, leſs active, another horſe, ambitious of command, and who is conſcious of his own ſtrength, ſprings out from the troop, attacks the old chief, who, if not vanquiſhed, keeps his command; but, if beat, he enters, with evident marks of ſhame and regret, into the common herd. The conqueror inſtantly takes the lead, is recogniſed as ſovereign, and obeyed by the whole troop*.

With regard to the *ox-kind*, their language is very limited. The bull ſeldom bellows but when he feels the ardours of love, and the female perfectly underſtands the meaning of what he *utters*. When ſtrangers appear in his paſture grounds, he eyes them with ſuſpicion, utters deep-toned murmurs, aſſumes a threatening aſpect, and ſometimes runs furiouſly at the intruders. Theſe menacing tones and geſtures are not, as generally imagined, indications of a natural ferocity of diſpoſition. On the contrary, they are the expreſſions of heroiſm and of gallantry. By the ſounds he utters, the females are alarmed and put upon their guard. They approach near him, and regard him as their protector and champion. The lowings of the cow proceed oftener from terror or timidity than from any other cauſe; and pain, hunger, or the abſence of the mother, produce the complaints of the calf.

Sheep have been repreſented by the COUNT DE BUFFON and by many other natural hiſtorians, as the moſt ſtupid of all quadrupeds.

* See deſcrip. de l'Ukraine par Beauplan, and a Memoir communicated to the Count de Buffon by M. Sanchez, formerly phyſician to the Ruſſian army.

This charge, however, ſeems not to be altogether juſt. In a ſtate of ſubjection, individuals ſeldom reſiſt the attacks of an enemy. But they ſoon learn that their protection lies in the ſhepherd and his dog; for, when it is neceſſary to watch the flock, in order to prevent the aſſaults of wolves, foxes, or dogs, upon the firſt alarm, the whole run with violence to the place where the watchmen are ſtationed. On other occaſions they never chooſe to make a very near approach either to men or dogs; but the ſenſe of immediate danger removes their uſual timidity, and their ſagacity teaches them where to ſeek protection. Theſe aſſociated movements are effected both by imitation and by peculiar *cries*, or bleatings, expreſſive of alarm and of danger; for, though a very few individuals only perceive the common enemy, yet, by motion and language, the intimidating ſentiment is in a moment communicated to the whole. When the female loſes or is robbed of her lamb, ſhe *cries* in a manner ſtrongly expreſſive of the anguiſh ſhe feels. In the eagerneſs of her ſearch, the loudneſs of her complaints, and her deſultory movements, her eye-balls ſeem to ſtart from their ſockets; and her irregular and diſtracted motions and diſtortions, joined to the violence and conſtancy of her bleatings, are evident indications of the moſt pungent grief. A young lamb, when it wanders from its mother, in the midſt of the moſt numerous flocks, runs precipitantly about, and *cries* in pitiable tones. Theſe *cries* the mother recogniſes, diſtinguiſhes them to be thoſe of her own offspring, and inſtantly joins the lamb; their congreſs is attended with mutual expreſſions of the greateſt joy.

With regard to mental and corporeal powers, the *goat* is much ſuperior to the ſheep. He approaches man ſpontaneouſly, and is eaſily rendered familiar. He is fond of careſſes both by the hand and

and by *words*, and is capable of a conſiderable degree of attachment to thoſe with whom he is familiar. When kept, like dogs or cats, in a domeſtic ſtate, the whole powers of the goat are called forth. He utters *ſounds* expreſſive of all his deſires, and underſtands, in a limited degree, what is *ſaid* to him by any of the family, as well as by all thoſe who live in the neighbourhood. When he has remained ſome time in this ſtate, his natural talents are unfolded and improved in a high degree. He knows perſonally every man, woman, child, and dog, within his uſual range. His natural genius, which is bold and adventurous, when improved by domeſtication, renders him often frolicſome and even petulant. But, except to ſtrangers, he is ſeldom ſeriouſly miſchievous.

The natural ſagacity and talents of the *dog* are well known and juſtly celebrated. But, when theſe are improved by aſſociating with man, and by education, he becomes, in ſome meaſure, a rational being. The ſenſes of the dog, particularly that of ſcenting diſtant objects, give him a ſuperiority over every other quadruped. He reigns at the head of a flock, and his *language*, whether expreſſive of blandiſhment or of command, is better heard and better underſtood than the *voice* of his maſter. Safety, order, and diſcipline are the effects of his vigilance and activity. Sheep and cattle are his ſubjects. Theſe he conducts and protects with prudence and bravery, and never employs force againſt them, except for the preſervation of peace and good order. But, when in purſuit of his prey, he makes a complete diſplay of his courage and intelligence. In this ſituation, both his natural and acquired talents are exerted. As ſoon as the *horn* or the *voice* of the hunter is heard, the dog demonſtrates his joy by the moſt expreſſive emotions and *accents*. By his movements and *cries*, he announces his impatience for combat,

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and his paſſion for victory. Sometimes he moves ſilently along, reconnoitres the ground, and endeavours to diſcover and ſurpriſe the enemy. At other times, he traces the animals ſteps, and, by different modulations of *voice*, and by the movements, particularly of his tail, indicates the *diſtance*, the *ſpecies*, and even the *age* of the fugitive deer. All theſe movements and modifications of *voice* are perfectly underſtood by experienced hunters. When he wiſhes to get into an apartment, he comes to the door; but if that is ſhut, he ſcratches with his feet, makes a bewailing *noiſe*, and, if his petition is not ſoon anſwered, he barks with a peculiar and humble *tone*. The ſhepherd's dog not only underſtands the *language* of his maſter, but, when too diſtant to be *heard*, he knows how to act by ſignals made with the hand.

The ſenſes of the *fox* are equally good as thoſe of the *wolf*; but his ſentiments are more delicate, and the organs of his voice more pliant, which enable him to uſe a more extenſive *language*. The wolf utters only frightful howlings; but the fox barks in different tones, yelps, and raiſes a mournful cry ſomething reſembling that of the peacock. He varies his tones according to the different ſentiments with which he happens to be effected. He employs an *accent* peculiar to the chace, to the tone of deſire, of complaint, and of ſorrow. He has another *cry*, expreſſive of acute pain, which he utters only when he is ſhot, or has ſome of his limbs broken. His yelping is a ſpecies of barking, and conſiſts of a quick ſucceſſion of tones; at the termination of which he generally raiſes his voice ſimilar to the cry of the peacock.

The language of the *cat* is more limited than that of the dog. Still, however, it is highly expreſſive of her feelings and deſires. When

When ſhe wants to flatter, or to ſollicit favour, ſhe makes a *purring* noiſe, accompanied with blandiſhing movements, and often rubs her ſides upon the ſhins or garments of the perſon from whom ſhe expects gratification. In the ſeaſon of love, the female not only goes in queſt of the male, but announces, by loud *cries* and diſguſting motions, the preſſure of her neceſſities. Theſe *cries* never fail to excite the ſentiments and procure the attention and aſſiſtance of the male. When a cat happens to be barred out, her *mew* of anxiety, or her petition to get admittance, is perfectly different from moſt of her other cries, but ſeems to be the ſame with that which ſhe utters when deſirous of food.

The *roe-buck* bellows not ſo frequently, nor with ſo loud or ſo ſtrong a voice, as the ſtag. The young ones utter a ſhort and plaintive cry, *mi...mi*, by which they indicate their want of food. This ſound is eaſily imitated; and the mother, deceived by the well-known *call*, often comes up to the very muzzle of the hunter's gun, and falls a victim to her maternal affection.

With regard to the *orang-outang*, the various ſpecies of *apes* and *monkeys*, their conformation gives many of them a near reſemblance in external figure to that of man. From this circumſtance, they are enabled to imitate almoſt every human action. LINNÆUS, and ſome other authors, have even gone the length of affirming, that the orang-outang *ſpeaks* with a kind of hiſſing voice. But we have no proper evidence of this ſuppoſed fact. On the contrary, the COUNT DE BUFFON, who often examined the ſmaller ſpecies of orang-outang, denies that this animal ever uttered any ſounds which had the moſt diſtant reſemblance to articulate language. By the mode of chattering and other ſounds, however, any perſon may ſoon learn

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their particular intentions and emotions. BATTEL, who deſcribes the largeſt ſpecies of orang-outangs, tells us, that 'they cannot *ſpeak*, and have no underſtanding more than a beaſt *.' By *ſpeech*, in this paſſage, BATTEL evidently means *articulate* language; and this very circumſtance is, perhaps, more than figure and manners, the ſtrongeſt characteriſtic which diſtinguiſhes mankind from the brute creation. The COUNT DE BUFFON has collected, from the moſt authentic travellers, a great number of facts concerning the general manners and ſagacity of the two ſpecies of orang-outangs; but, it ſhould appear, he has not been able to obtain much information as to their language, or modes of expreſſing their paſſions and ſentiments. Notwithſtanding the great ſimilarity between the form and organization, both external and internal, of the orang-outang, and the general ſtructure of man, yet he cannot lay claim to humanity. Though he has the ſame organs of *ſpeech*, he never attempts to *articulate*. The figure and proportions of his brain are likewiſe the ſame; but he diſcovers no extent of thought. There cannot, M. DE BUFFON properly remarks, be a more evident proof than is exhibited in the orang-outang, that matter alone, though perfectly organized, can produce neither language nor extenſive thinking, unleſs it be animated by minds ſuperior to thoſe of brutes.

The *pigmies* are very numerous in the mountains of Mauritania, Conſtantia, and Bugia. We are informed by MARMOL, that they live upon herbs, corn, and fruits; that, in their depredatory expeditions, they go in troops to rob the gardens or fields; but, before leaving the woods or thickets, one of them aſcends a high tree, or ſome eminence, from which he takes a ſurvey of the country, and, when he obſerves no perſon in the way, he gives the ſignal, by a *cry*, which

* Purchas's Pilgrims, part 2. p. 982.

which is perfectly underſtood, that the troop may proceed with ſafety, and leaves not his ſtation as long as his companions are foraging abroad. But, whenever he perceives any perſon approaching, he *ſcreams*, with a loud and intelligible *voice*, warning the robbers of their danger, when the whole, by leaping from tree to tree, fly off, and make their eſcape to the mountains.

In Senegal, many other ſpecies of apes, baboons, and monkeys, when robbing orchards or corn-fields, obſerve a ſimilar conduct with that of the pigmies. One of them, on theſe occaſions, ſtands ſentinel on a tree, liſtening and looking about on all ſides, while the others are buſy in collecting the booty. When the ſentinel deſcries any perſon, he inſtantly, by loud and ſignificant *ſhrieks*, alarms the foraging troop, who obey the ſignal, and fly off with their prey *.

The *ouarines*, a large ſpecies of American monkeys, are diſtinguiſhed by the appellation of *preachers*. MARCGRAVE, in his Hiſtory of Braſil, relates the following facts concerning theſe preacher-monkeys, which, he aſſures us, he himſelf often witneſſed. The facts are, That, every morning and evening, the ouarines aſſemble in the woods; that one of them aſſumes a more elevated ſtation, and makes a ſignal with his hand for the others to ſit around and liſten to him; that, when they are all ſeated, he begins a *diſcourſe* ſo loud and rapid as to be heard at a great diſtance; that all the reſt keep the moſt profound ſilence; that, when he ſtops, he gives a ſignal with his hand for the others to reply; that, in an inſtant, the whole *cry* together, till he commands ſilence by another ſignal, which they, in a moment, obey; that the firſt reſumes his *harangue*; and that, after hearing him attentively for a conſiderable time, the aſſembly

* Voyage de le Maire, p. 103.

breaks up *. It were to be wiſhed that MARCGRAVE had endeavoured to diſcover the intention of theſe *field-preachings*; for, if the circumſtances he relates be true, and I know no objection to his veracity, it is evident that the animals muſt be actuated by ſome peculiar motives. Theſe *harangues*, perhaps, may, like our houſes of Parliament, have ſome common intereſt for their object, and contain directions for the moſt prudent modes of accompliſhing their purpoſes.

We ſhall now leave the language of *quadrupeds*, and proceed to mention a few particulars concerning that of *birds*. Brevity here is the more neceſſary, becauſe in many places of my former volume, though treating of very different ſubjects, inſtances of the language of brute animals not unfrequently occur. Here I ſhall not confine myſelf to any ſyſtematic arrangement, but content myſelf with rambling, without any limited order, through the eloquence of the feathered tribes.

In general, it may be remarked, that every ſpecies of birds have peculiar modulations of voice expreſſive of love, of pain, of anxiety, of anger, of complacency, and of good or bad fortune. Theſe expreſſions, however, ſeem to be confined and intelligible to the individuals only of the ſame ſpecies. But there are certain ſounds, particularly thoſe of danger and of terror, which are perfectly underſtood, not only by the ſame ſpecies, but even by different genera and orders of birds. When the fox wiſhes to ſurpriſe birds in the neighbourhood of hedges, bruſh-wood, or trees, he lies down on his belly, and extends his hind-legs as if he were dead. In this ſituation, however, he is perfectly vigilant, and cunningly obſerves the motions

* Marcgrav. Hiſt. Braſ. p. 226

motions of the birds along the hedges and trees. If any of them happen to ſpy him, they immediately ſend forth ſoft, mournful, but ſhrill *cries*, to alarm their neighbours, and to advertiſe them of the enemy's approach. Blackbirds and jays have been frequently obſerved to follow the fox, flying from tree to tree, and often repeating the ſame *cries* of alarm and of danger. Theſe *cries*, by whatever birds they are uttered, are underſtood by every ſpecies within reach of hearing, who inſtantly uſe all their arts of defence againſt the common enemy. Birds are well acquainted with their natural enemies, and this knowledge ſeems to be purely inſtinctive, and not derived from experience or obſervation. When they obſerve the *pine-weaſel*, though for the firſt time, they utter the ſame mournful *cry* to announce his approach, as when they ſee a fox. It is likewiſe worthy of remark, that birds utter this peculiar *cry* upon the appearance of all carnivorous animals, as the wolf, the fox, the pine-weaſel, the cat, &c.; but never againſt the ſtag, the roe, the hare, nor, I believe, even man, who, of all animals, is the greateſt deſtroyer of the inferior tribes.

The language of moſt birds is a muſical language, and reducible by a pitch-pipe to a muſical key. All ſpecies are not equally eloquent. The language of ſome ſpecies is copious and fluent, but that of others is confined to a few important ſounds, which are neceſſary to expreſs barely their feelings and their wants. But no bird, like the finny tribes, is perfectly mute. The language of birds, Mr WHITE of Selbourne remarks, is very antient, and, like other antient languages, very elliptical. They ſay little, but much is meant and underſtood *. *Owls* have a very expreſſive language.

* See Nat. Hiſt. of Selbourne, by the ingenious and Rev. Mr WHITE, p. 240. of whoſe obſervations I have made frequent uſe.

They *hoot* in a fine vocal ſound, which has a conſiderable reſemblance to the human voice. This note ſeems to expreſs complacency, and ſometimes rivalſhip among the males. They likewiſe uſe a quick call, and an horrible ſcream; and they *ſnore* and *hiſs* when they mean to threaten and intimidate. The notes of the *eagle-kind* are ſhrill and piercing; and, in the ſeaſon of love, very much diverſified. *Ravens*, beſide their loud croaks, ſometimes exert a deep and ſolemn note, which makes the woods reſound. The amorous ſound of a *crow* is ſtrange, and even ſomewhat ridiculous. In the breading ſeaſon, *rooks* make clumſy attempts towards ſinging. The *parrot-kind*, as remarked in Vol. I. poſſeſs a great range of modulation in their voice, as appears by the facility with which they learn to pronounce words, and even ſhort ſentences. The *coo* of the pigeon is amorous and mournful. When the male makes love, or is jealous of rivals, he erects his body, raiſes the feathers of his neck and head, and employs many ſtrutting and lively geſticulations. To theſe movements he adds a *guttural*, but not unpleaſant kind of *ſpeech*, which is ſoft and alluring when he means to ſolicit the female. When jealous of a rival, he utters the ſame notes, but gives them a more ſharp, and even a menacing *tone*. The *woodpecker*, when pleaſed, ſets up a loud and hearty ſpecies of *laugh*. The *goat-ſucker*, or *fern-owl*, from the duſk till day-break, ſerenades his mate with *ſounds* ſimilar to the clattering of caſtanets. Moſt of the ſmall birds, or *paſſeres*, expreſs their complacency by ſweet modulations, and a variety of melodious *ſounds*. The *ſwallow*, by a *ſhrill alarm*, rouſes the attention of his ſpecies, and tells them that the hawk approaches. Gregarious and aquatic birds, eſpecially thoſe of the nocturnal kind, who ſhift their abodes in the dark, are extremely noiſy and *loquacious*; as cranes, wild-geeſe, wild-ducks, &c.

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Their perpetual clamour prevents them from diſperſing and loſing their companions.

We ſhall now make a few obſervations on domeſtic fowls, whoſe *language* is beſt known, and, of courſe, beſt underſtood. The *voice* of the peacock, like thoſe of many birds of the fineſt plumage, is harſh and grating. The braying of aſſes, or the yelling of cats, are not more diſagreeable. The voice of the *gooſe* clanks and ſounds ſomewhat like a trumpet; but, the *gander*, eſpecially when he apprehends danger to the young brood, joined to his threatening aſpect, and the movements of his neck, *hiſſes* in a manner ſo formidable as deters the too near approach of children and of ſmall dogs. In the *duck-kind*, the *voices* of the female and male are remarkably different. The *quack* of the female is loud and ſonorous; but the voice of the *drake* is harſh, inward, and feeble. The cock *turkey*, when proud, or when addreſſing his miſtreſs, blows up his wattles, erects his feathers, makes a humming noiſe by vibrating his wings, and utters a gobbling kind of *ſound*, which, though we cannot deſcribe, is perfectly underſtood by his own ſpecies. When attacked by a boy, or any other adverſary, he aſſumes a pert and petulant *tone*; and ſuch is the obſtinate courage he diſplays, that he will rather die than give up the conteſt. A hen *turkey*, when ſhe leads forth her young brood, watches them with the utmoſt anxiety. If a hawk, or any bird of prey, appear, though very high in the air, the careful and affectionate mother announces the enemy with a low inward kind of *moan*. If he makes a nearer approach, her *voice* becomes earneſt and alarming, and her *outcries* are redoubled both in loudneſs and frequency. The effects of this intereſting *eloquence* upon the young are aſtoniſhing. They underſtand the intimidating *language* of the mother, though they know not the immediate cauſe of the

the danger; but, by the intuitive knowledge of the meaning of what ſhe *ſays* to them, they inſtantly employ every artifice to conceal and protect themſelves from the impending danger. To accompliſh this purpoſe, they run under hedges, bruſh-wood, and even the leaves of cabbages, and of ſuch other plants as happen to be near them.

None of our domeſtic birds ſeem to poſſeſs ſuch a variety of *expreſſion*, and ſo copious a *language* as common poultry. A chicken of four or five days old, when held up to a window frequented by flies, immediately ſeizes its prey, and utters little *twitterings* of complacency; but, if a bee or a waſp is preſented to it, its *notes* inſtantly become *harſh*, and expreſſive of diſapprobation, and of a ſenſe of danger. When a hen is about to lay an egg, ſhe intimates her feelings by a joyous and ſoft *note*: But ſhe has no ſooner diſburdened herſelf, than ſhe ruſhes forth with a *clamorous* kind of joy, which the cock and the reſt of his miſtreſſes immediately adopt. This tumultous noiſe is not confined to the family, or rather ſeraglio, but is tranſmitted from yard to yard, and ſpreads to every homeſtead within hearing, till at laſt the whole village is in an uproar. When a hen has hatched a brood, a new and intereſting ſcene is exhibited. Her relation as a mother requires a new ſpecies of *language*. She then runs *clucking* and *ſcreaming* about, and ſeems to be agitated with the greateſt anxiety. When men or dogs ſuddenly approach her feeble brood, her courage and maternal care are aſtoniſhing. With loud *cries*, and rapid motions, ſhe aſſails the enemy; neither a man, nor a lion, in theſe circumſtances, are ſufficient to repreſs the courage of this unarmed bird. I have ſeen a hen, when attending her young, boldly attack, intimidate, and beat of a maſtiff. The *vocabulary* of the cock is likewiſe pretty extenſive; and his generoſity

ſity and gallantry are remarkable: When he diſcovers a quantity of food, inſtead of devouring it himſelf, he inſtantly *calls* to his concubines to partake of the repaſt; and, if he diſcerns a bird of prey, or any other alarming danger, with a warning *voice*, he deſires his family to be on their guard againſt the common enemy. The cock has alſo at command his *love ſpeeches*, and his *terms* of defiance. But his moſt peculiar *ſound* is his *crowing*, by which, in all ages, he has diſtinguiſhed himſelf as the countryman's clock, as the watchman who proclaims the diviſions of the night.

On the ſubject of our common poultry, I muſt not omit a curious fact recorded by that intelligent naturaliſt the Rev. Mr WHITE of Selbourne. A neighbouring gentleman had, one ſummer, loſt moſt of his chickens by the depredations of a ſparrow-hawk, that was in the practice of gliding down between a pile of faggots and the end of his houſe to the place where the hen-coops ſtood. The owner, exaſperated to ſee his flock daily diminiſhing, hung a ſetting-net between the houſe and the pile, into which the unwary robber daſhed, and was entangled. Reſentment ſuggeſted retaliation; he, therefore, clipped the wings of the hawk, cut off his talons, and, after fixing a cork on his bill, threw him down among the brood-hens. Imagination, Mr WHITE remarks, cannot paint the ſcene that enſued. The *expreſſions* excited by fear, anger, and reſentment, were ſtrange and intereſting. The enraged matrons upbraided, execrated, inſulted, and, at laſt, triumphed over the helpleſs victim; they never deſiſted from buffetting their adverſary till they had torn him in pieces *.

With regard to *fishes*, they have been always conſidered as perfectly

* WHITE's Nat. Hiſt. of Selbourne, p. 243.

fectly devoid of *language*. But, on this ſubject, it muſt be remarked, that the element in which they live, their natural timidity, the ſwiftneſs of their movements, and a thouſand other circumſtances, remove them from the accurate inſpection and inquiries of men. That they have the organs neceſſary for hearing, the juſtly celebrated DR MONRO, in his diſſertation on fiſhes, has demonſtrated in the moſt ſatisfactory manner. It is likewiſe well known, that water, which always contains a certain portion of air, is an excellent vehicle of *ſound*. It is, therefore, from theſe two facts, highly preſumable, that fiſhes have ſome mode of communicating their ſenſations and deſires to one another. To what purpoſe ſhould Nature have beſtowed upon ſuch a numerous claſs of animals, as that of fiſhes, organs exquiſitely adapted for hearing, unleſs to endow them with that faculty? And, if fiſhes hear, it may fairly be concluded, that they occaſionally utter *ſounds* which are intelligible to their companions. The ſtrong analogy derived from all terreſtrial animals is another argument in ſupport of this rational conjecture.

We ſhall now make a few obſervations concerning the *language* of *inſects*, particularly thoſe of the winged tribes. The *amours* of dragon-flies, of ſpiders, and of butterflies, furniſh many appearances which permit us not to doubt, that the males and females have a very *expreſſive* mode of conveying their ſentiments to each other. Their varied movements, their little alluring arts, are indications of that *language* which all ſentient beings poſſeſs in ſome degree, and the *ſigns* of which are ſeldom equivocal. We ſee the male ſoliciting, by his gambols, his careſſes, and his perſeverance, favours which the female affects, at firſt, to refuſe, with no other apparent intention than to excite and inflame the paſſion of the male.

The

The *grafshopper* furniſhes us with a remarkable inſtance of the *language* of inſects. The graſshopper is a ſpecies of *ventriloquiſt*. The organs of his voice, which are both curious and complicated, inſtead of his head, are placed in his *belly*. By this inſtrument, in the ſeaſon of love, he *chants*, or *chirps*, to the female, who ſeems to be pleaſed with his addreſſes, and, when diſpoſed, ſhe approaches him, being led, not by the eye, but by his *voice*. From a very general analogy, we are warranted to ſuppoſe that organs of *voice* imply the relative organs of *hearing*. Hence we may conclude, that the female graſshopper both hears and underſtands the *love-ſpeeches* of the male.

Thoſe inſects which are brought forth, and live in ſociety, who mutually aſſiſt each other in conſtructing works for the common good and accommodation, ſeem to have the greateſt need of an extenſive *language*. Being deſtined to form one large family, to give mutual aid and ſupport to each other in all their common wants and operations, a ſpecies of *language*, and that not very limited, ſeems to be abſolutely neceſſary to enable them to underſtand and to execute the different labours allotted to them with that regularity and harmony, which is ſo remarkable in the magnificent ſtructures erected by bees, waſps, and many other gregarious inſects. Bees, as well as flies of every kind, make a humming *noiſe* by the vibrations of their wings. But the noiſe of the bee, when flying home with its load, is very different, even to our comparatively blunt ears, from that which it utters after arriving at the hive, where it makes a peculiar *noiſe*, which is perfectly underſtood by the working bees, who inſtantly come and carry off this freſh ſupply of materials.

Common flies, and particularly the large fleſh-flies, make a ſoft

ſinging kind of noiſe when flying about in tranquillity. But, when alarmed, or when entangled in the web of a ſpider, the *noiſe* of their wings intimates diſtreſs and terror. Inſtead of being ſoft and agreeable, it is then loud, quick, harſh, and interrupted, preciſely analogous to the language and cries of men and of the larger animals when placed in ſimilar circumſtances. In my former volume, when treating of *hearing*, I have rendered it more than probable, that the common houſe-fly is endowed with the faculty of hearing. Whenever we perceive, that effects and movements are uniformly produced by certain ſounds, it may be concluded, that the animal is furniſhed with organs of hearing, though, from their minuteneſs, we are unable to diſcover where they are ſituated. In the winged tribes of inſects, it is probable that the organs of hearing are placed near the inſertion of the wings, or, at leaſt, that nerves or veſſels proceed from the wings to the more immediate organs of hearing, which may be incloſed under that elaſtic cruſtaceous ſubſtance with which the head is covered. This idea will be rendered ſtill more probable by attending to the various modulations of *ſounds* produced by the vibrations of the wings, and by comparing theſe with the preſent ſituation and employment of the inſect. When a common fly is irritated or terrified, the *noiſe* made by the vibrations of its wings is very different from that produced when the animal is flying about undiſturbed. When a houſe or a fleſh-fly is tormented by thoughtleſs children, who, for amuſement, often inſert pretty large pins into the bodies of theſe inſects, which the animals, with much pain, are obliged to trail after them, the *noiſe* of their wings is then highly expreſſive of impatience and of torture. But, when they meet with food agreeable to their taſte, the *noiſe* of their wings is ſoft, gentle, and even melodious. When the ſeaſon of their amours arrives, a new and intereſting ſcene, both with regard to movements and

language,

language, is exhibited. At that important period of their exiſtence, they aſſemble in groups, which are more or leſs numerous, according to circumſtances. Theſe groups fly about, making a thouſand circumgyrations, but always keep pretty cloſe to each other. In theſe *love-dances*, as I call them, the males and females often meet, and lay hold of each other in the air; but the congreſs is only momentary. The *noiſe* of their wings, however, on this critical occaſion, is briſk, ſharp, and ſeemingly expreſſive of *joy*: This *noiſe* is eaſily diſtinguiſhable from that excited by terror or by any embarraſſing or painful ſituation. But theſe groups of lovers not unfrequently deſcend from the higher parts of a chamber, and alight upon tables or chairs. Here their *language* and motions become ſtill more intelligible. The males run about with ardour in queſt of the females, and perch with alacrity and a pleaſant murmuring ſpecies of *noiſe* upon the backs of the females, where, if their ſtay is ſhort, it is amply repaid by the frequency of reiteration. I have often been amuſed with their miſtakes. Though the eyes of flies conſiſt of numerous lenſes, ſo ſituated that they can ſee objects all around them; yet theſe lenſes are ſo minute and ſo convex, that they can perceive objects at ſmall diſtances only. When the males are roaming about in queſt of females, it not unfrequently happens, in the keenneſs of reſearch, that two males rencounter: As ſoon as the mutual miſtake is perceived, each makes a ſudden *ſnapping* kind of *noiſe*, as if they were ſpitting in one another's faces, and then run off in purſuit of more ſuitable mates.

Some ſpiders, when they wiſh to have ſenſual intercourſe, have a ſingular method of communicating their deſires. A ſpider, who wants a mate, has a mode of *ſtriking* againſt the wall or wood where ſhe has ſettled. She firſt gives nine or ten gentle blows, re-

ſembling, but ſomewhat quicker and louder, the vibrations of a watch; after which, ſhe remains ſome time ſilent, as if waiting for a reſponſe; if ſhe receives none, ſhe repeats the ſame *ticking noiſe*, by what means it is not perfectly known, at intervals of about an hour or two, reſuming this exerciſe and reſting alternately both during the day and the night. After theſe amorous *ſollicitations* have been continued two or three days, if no lover makes his addreſſes, probably becauſe none are within the reach of hearing, ſhe changes her ſituation, till ſhe receives an anſwer from a neighbouring mate, who makes preciſely the ſame kind of *noiſe*. If they are mutually pleaſed with each other, the *converſation* becomes briſker, and the beatings more frequent, till, at laſt, the approach is ſo near, that the two *ſounds* are confounded. In a very ſhort time, a deep ſilence takes place, when it is reaſonably ſuppoſed that the intentions of Nature are accompliſhing *.

This chapter ſhall be concluded with a few general remarks. With regard to the *language* of beaſts, a few examples have been ſelected from

* Amuſement philoſophique ſur le language des Beſtes, par G. H. Boujeant, p. 118. Father Boujeant, as appears from his writings, was a man of conſiderable learning and ingenuity. He was alſo an acute obſerver of the operations and oeconomy of Nature. He ſupported his ideas, concerning the relative *underſtanding* and *language* of *beaſts*, with great ſpirit and ability. But fanatical, or, which is the ſame thing, ignorant individuals, and, at laſt, the *Romiſh church*, were alarmed. Boujeant was himſelf a Jeſuit; and, when called to account for his doctrine, like a gentleman of the profeſſion, in a ſecond edition, he not only *recanted* ſolemnly all his opinions on the ſubject, but acknowledged them to have been *deluſions of the Devil!* To augment this literary, or rather *religious* farce, the very ſame opinions and reaſonings are repeated in the ſubſequent edition, accompanied with the ſigned *recantation* of the author! The diffuſion of ſcience, ſo often attempted to be ſuffocated by *prieſts*, though, to the diſgrace of human nature, both an antient and a modern practice, exhibits a dreadful picture of what are called *the Lords of the Creation!*

from the four great claſſes of Quadrupeds, Birds, Fiſhes, and Inſects. To have enumerated more, would not only have tired the reader, but led me far beyond my intended limits. From the few ſpecimens I have given, it is apparent, that Nature, in this, as well as in every other of her operations, ſupports and conducts her ſyſtem of animation by univerſal and intelligent laws. On man ſhe has beſtowed three ſpecies of language, namely, *natural* language, the language of *geſture*, and, what is ſtill ſuperior, the faculty of inventing and employing *artificial* language. But the moſt diſtinguiſhed of the brute animals are limited ſolely to the two former modes of communicating to each other their various feelings and deſires. The *language* of the inſect tribes ſeems to be ſtill more limited. Their *converſation* is chiefly carried on by various vibrations of their wings, and by ſimilar inſtruments; but ſtill theſe ſimple modes of expreſſion, by whatever motives they are produced, are perfectly underſtood, which is the ſole end and intention of all *language*.

One very ſingular obſervation remains to be made. Contrary to what almoſt univerſally takes place in the human ſpecies, the *females* of the inferior animals are not ſo *loquacious* as the *males*. This remarkable difference, if we ſcrutinize impartially the intentions of Nature, will be found, like all her other intentions, to be productive of the wiſeſt and moſt beneficent purpoſes. Among thoſe brute animals who *pair* or *marry* by mutual ſelection, and particularly almoſt the whole of the feathered tribes, when not corrupted by domeſtication, the *language* of the *males* is more extenſive and more frequently repeated, than that of the *females*. It is for this reaſon, that, in purchaſing ſinging birds, great attention is paid to thoſe characters which diſtinguiſh the *males* from the *females*, the latter being conſidered as comparatively *mute* and uſeleſs. When the female thruſh,

or

or blackbird, is brooding over her eggs, the male ſits upon a neighbouring tree; and, when no danger appears, he tells her, in melodious and encouraging ſtrains, not to be afraid, becauſe he is keeping the ſtricteſt watch. But when he perceives the too near approach of man, of birds of prey, or of any other rapacious animals, he inſtantly changes his addreſſes to her. Inſtead of his former ſoothing notes, he flies from branch to branch, or from tree to tree, uttering diſmal, alarming, and harſh *cries*. In this manner he tells her to beware of the enemy. When the danger is greatly increaſed, by a ſtill nearer approach, the male again changes his *language*: He then, by quick and precipitate *ſounds*, commands her to *fly*, and to ſave herſelf even in preference to her eggs or her defenceleſs brood.

Here the intentions of Nature as well as the neceſſity of a varied though limited *language*, are evident both to our ears and eyes; for, on ſuch occaſions, the *ſounds* are uniformly accompanied with the moſt expreſſive *geſtures*. When boys are about to carry off a neſt of young birds, both parents, notwithſtanding their natural dread of man, which is too often augmented by cruelty, make a much nearer approach than at any other time. Their almoſt invincible attachment to their offspring ſeems, in a great meaſure, to deprive them of the principle of ſelf-preſervation. Their *cries* are low, mournful, and not unfrequently reſemble thoſe uttered by human beings when placed in ſimilar circumſtances. But, when deſpair removes all hope, another change of *language* is exhibited. Both parents then fly round the aſſailant, ſcreaming and uttering threatening cries; and ſometimes they even attempt to repel the ſpoiler.

When a boy, I carried off a neſt of young ſparrows about a mile from my place of reſidence. After the neſt was completely removed, and while

while I was marching home with them in triumph, I perceived, with ſome degree of aſtoniſhment, both parents following me, at ſome diſtance, and obſerving my motions in perfect ſilence. A thought then ſtruck me, that they might follow me home, and feed the young according to their uſual manner. When juſt entering the door, I held up the neſt, and made the young utter the *cry* which is expreſſive of the deſire of food. I immediately put the neſt and the young in the corner of a wire-cage, and placed it on the outſide of a window. I choſe a ſituation in the room where I could perceive all that ſhould happen, without myſelf being ſeen. The young animals ſoon *cried* for food. In a ſhort time, both parents, who underſtood the language as well as the peculiar *voices* of their mutual offſpring, having their bills filled with ſmall caterpillars, reſorted to the cage, and after *chatting* a little, as we would do with a friend through the lattice of a priſon, gave a ſmall worm to each individual. This parental intercourſe continued regularly for ſome time, till the young were completely fledged, and had acquired a conſiderable degree of ſtrength. I then took one of the ſtrongeſt of them, and placed him on the outſide of the cage, in order to obſerve the conduct of the parents after one of their offſpring was emancipated. In a few minutes, both parents arrived, loaded, as uſual, with food. They no ſooner perceived that one of their children had eſcaped from priſon, than they fluttered about and made a thouſand *noiſy* demonſtrations of *joy* both with their wings and their *voices*. Theſe tumultuous *expreſſions* of unexpected happineſs at laſt gave place to a more calm and ſoothing *converſation*. By their *voices* and their *movements*, it was evident that they earneſtly entreated him to follow them, and to fly from his preſent dangerous ſtate. He ſeemed to be impatient to obey their mandates; but, by his *geſtures* and the feeble *ſounds* he uttered, he plainly told them that

that he was afraid to try an exertion he had never before attempted. They, however, inceſſantly repeated their *ſollicitations*; by flying alternately from the cage to a neighbouring chimney top, they endeavoured to ſhow him how eaſy the journey was to be accompliſhed. He at laſt committed himſelf to the air, and landed in ſafety. Upon his arrival another ſcene of clamorous and active joy was exhibited. Next day, I repeated the ſame experiment by expoſing another of the young on the top of the cage. I obſerved the ſame conduct with regard to the remainder of the brood, which conſiſted of four. I need hardly add, that not one, either of the parents or children, ever afterwards reviſited the execrated cage.

We have already ſeen, and every body knows, that in general, the *males* of the inferior animals are more *loquacious* than the *females*. But, in the human ſpecies, it is likewiſe an unqueſtionable fact, that the *females* are much more talkative than the *males*. It is even remarkable, that *female* children, though of the ſame family, and receiving the ſame inſtructions and example, acquire the faculty of *ſpeaking* one year, and ſometimes two, ſooner than the *males*.

We ſhall now endeavour to inveſtigate the intentions of Nature in creating ſuch a marked diſtinction.

In all ages, and in all regions of the earth, the early education and management of children have neceſſarily devolved upon the mothers. For this important taſk, they are much better qualified, both in the ſtructure of their bodies, and in the diſpoſitions of their minds, than the males. The connection between the mother and child begins long before it becomes an object of attention to the father. By a thouſand circumſtances, which mothers only know, and

times

ſometimes attempt, though obſcurely, to deſcribe, they contract an affection for a ſtill inviſible being. After the child is uſhered into the world, the curioſity and the ſympathetic joy of the father, are excited. He, accordingly, exerts himſelf to render the condition both of the mother and child as happy as poſſible. To ſupport the child with a mild but nutritive food ſecreted from the blood and other juices of the mother, Nature has provided her with a wonderfully complicated ſyſtem of veſſels, or lacteal pipes, which all terminate in the nipples of her breaſts. To theſe nipples the infants inſtinctively apply their mouths, and, by ſuction, create a vacuum. The preſſure of the external air upon the breaſt, or collection of tubes filled with milk, forces them to diſcharge their contents into the mouth of the child, who continues to ſwallow it till its ſtomach is ſatisfied. During this tender and precarious ſtate of exiſtence, the anxious and perſevering attention of the mother, makes her chearfully endure many toils and hardſhips, under which ſhe would often ſink, were ſhe not, on ſuch occaſions, almoſt preternaturally ſupported by mere ſtrength of affection.

After the child has arrived at the age of two or three months, and, in ſtrong and healthy children, much earlier, or as ſoon as it is capable of giving a tranſient attention to particular objects, then the exertions of the mother are almoſt perpetual. Her ſole object is to pleaſe by little amuſements which ſhe endeavours to accommodate to the weak, but gradually augmenting capacity of the infant. The chief inſtruments which ſhe addreſſes are the *eyes* and *ears*. To the *eye* ſhe preſents ſhining or luminous objects with which children are very early delighted; and, at the ſame time, repeatedly mentions the *names* of the particular objects. Thus, by habit, the *natural volubility* of female tongues is greatly improved. I have

often been amazed at the dexterity and quickneſs of mothers and nurſes when endeavouring to pleaſe fretful children. They hurry the child from object to object, in order to diſcover if any of them arreſts its *eye*. If this attempt does not ſucceed, they have recourſe to other expedients. The *ears* of all infants are delighted with any loud *noiſe*. The mother, who wiſhes to appeaſe the fretfulneſs, or even to keep up the ſpirit and chearfulneſs of the child, toſſes it about in her arms, ſings, and talks alternately; and, on ſuch occaſions, it is aſtoniſhing to obſerve the quickneſs of her tranſitions from one ſpecies of incomprehenſible jargon to another. Still, however, ſhe goes on either *rattling* with her *tongue*, or making a *rattling noiſe* on tables, chairs, &c. A perſon who had never attended to theſe ſcenes, which are ſo often exhibited by a ſprightly mother and a ſprightly child, would be apt to conclude, that both were proper inmates for a bedlam. Theſe are well known to be univerſal facts; and we ſhall now endeavour to ſhow their utility.

It is a very antient adage, that Nature does nothing in vain. To women ſhe has given the talent of talking more frequently, as well as more fluently, than men: She has likewiſe endowed them with a greater quantity of animation, or what is commonly called *animal ſpirits*. Why, it may be aſked, has Nature, in this article, ſo eminently diſtinguiſhed women from men? For the beſt and wiſeſt of purpoſes. The principal deſtination of all women is to be mothers. Hence ſome qualities peculiar to ſuch a deſtination muſt neceſſarily have been beſtowed upon them. Theſe qualities are numerous: A ſuperiour degree of patience, of affection, of minute, but uſeful attentions, joined to a facility of almoſt inceſſant *ſpeaking*.

Here, however, I muſt confine my obſervations to the laſt conſpicuous

cuous and eminent accompliſhment. To be occupied with laborious offices, which demand either bodily or mental exertions, and not unfrequently both, is allotted to the men. Theſe cauſes, beſide their comparative natural taciturnity, totally incapacitates them for that loquacity which is requiſite for amuſing and teaching young children to *ſpeak*. But the employments of women are of a more domeſtic kind. Houſehold affairs, and particularly the nurſing and training of children, are fully ſufficient to engroſs their attention, and to call forth all their ingenuity and active powers. The *loquacity* of women is too often conſidered, by poets, hiſtorians, and by unthinking men, as a reproach upon the ſex. Men of this deſcription know not what they ſay. When they blame women for *ſpeaking much*, they blame Nature for one of her wiſeſt inſtitutions. Women *ſpeak much*. They ought to *ſpeak much*. Nature compels them to *ſpeak much*; and, when they do ſo, they are complying religiouſly with one of her moſt ſacred and uſeful laws. It may be ſaid, that *ſome men* talk as *much* as women. Granted. But beings of this kind, I deny to be *men*. Nature ſeems to have originally meant them to be *women*; but, by ſome croſs-accident, as happens in the production of *monſters*, the external *male form* has been ſuperinduced upon a *female ſtock*.

CHAPTER VIII.

Some Remarks on the Comparative Pleaſures and Suffferings of Animals.

THERE are two great ſources of animal pleaſure and pain. The one ariſes from *mental*, and the other from *corporeal* cauſes. In proportion to the extent of intellectual powers in animals, the variety and the intenſeneſs of their pleaſures muſt be augmented. I wiſh the reverſe were not equally true. Man, who ſtands at the head of all the animated beings of which we have any knowledge, derives the moſt extenſive, variegated, and delicate ſpecies of pleaſure from natural genius, eſpecially when improved and illuminated by ſcience, by literature, and by impartial, but acute obſervation. The means, however, of acquiring theſe accompliſhments, are often productive of the greateſt human *calamities*. They cannot be attained without much ſtudy and reading. But ſtudy and reading imply a ſedentary life; and a ſedentary life gives riſe to conſumptions, to the ſtone, to the gout, to want of appetite, and, of courſe, to every evil which hell can invent, or poor mortals ſuffer.

But

But let us take a view of the enjoyments procured by the acquiſition of knowledge, and by a proper culture of the mind. Every ſtep we advance, from the very commencement of our progreſs, affords pleaſures which are totally unknown, and even incomprehenſible to the ignorant and too commonly vicious part of mankind, which unfortunately includes much more than nine-tenths of the ſpecies.

When about five or ſix years of age, our ſole delight conſiſts of rambling about, flying from one external object to another with often an unmeaning rapidity, and without perceiving, that, by this reſtleſs activity, we are laying up ample ſtores for future reflection. Nature, in her operations, has ſeldom one intention only in view: While ſhe is thus early ſtimulating us to gratify curioſity, or, in other words, to enjoy pleaſures which are perpetually changing their forms and modes of impreſſion upon the ſoft and ductile mind, ſhe is, at the ſame time, extending and ſtrengthening the body by the movements which theſe exertions neceſſarily require. The pleaſures reſulting from the acquiſition of ideas by the inſpection and examination of new external objects, from the age mentioned above, proceed with amazing rapidity. But, after this period, in what are called *civilized*, or rather *artificial* ſocieties, the natural current of the mind is checked, and turned into very different channels. To read, to write, to acquire *dead* or *foreign languages*; and, if the deſtination be ſtill higher, geometry, and ſpeculative knowledge of every ſpecies, are made the principal objects of a young man's attention. This ſevere check is, in general, too early given. At the very time when young minds are eagerly inveſtigating even the *minutiæ* of Nature, as inſects, reptiles, and, when a little farther advanced, birds and quadrupeds of different

different ſpecies, they are prematurely hurried on, to the moſt abſurd and prepoſterous of all ſtudies, namely, that of *dead* and *foreign languages*, long before they underſtand, to any extent, their *native tongue*.

Some ſmall portions of the antient *hiſtorical* compoſitions may ſometimes be partially underſtood, and even reliſhed by ſchool-boys. But what are the ſentiments which ſtrike in the moſt forcible manner the unſuſpicious, and, as yet, uninformed minds. They are of the moſt diabolical kind. *Animoſity*, *battles*, *treachery*, *cruelty*, and *murders!* The ſucceſsful perpetrators of theſe horrid crimes are celebrated, both by their own *hiſtorians*, and by unthinking *pedagogues*, under the grand appellation of HEROES! What was the renowned *Alexander?* A *great Hero?* And what is a *great Hero?* An unrelenting *butcher* of his own *ſpecies!* Such was ALEXANDER, ſuch was CÆSAR, and ſuch were all *the ſimilar vagabonds*, *thieves*, and *murderers* of antiquity. Theſe men, however, are exhibited by our *teachers*, as glorious examples of human *virtues!* What monſtrous *leſſons* to young and tender minds! But, if our *teachers* were wiſer than they generally are, the hiſtorical compoſitions of the antients would afford them the fineſt topics for inculcating every ſpecies of moral duty, and of moral feeling, upon the minds of youth. Patriotiſm, love of liberty, and bravery in the defence of the natural rights of man, when tempered with moderation and humanity, and, if properly explained, enforced, and illuſtrated by the numerous and ſplendid characters which antiquity occaſionally affords, would not only excite attention, but expand the mind, and give it virtuous impreſſions which no time could ever efface.

I mean not to depreciate *claſſical learning.* I only complain of a moſt abſurd and hurtful mode of education, which is, it may be ſaid, *univerſal* in Scotland. Not to mention the *maſters* of different mechanical employments, *JOURNEYMEN ſhoemakers, taylors, weavers, carpenters, bakers, maſons, bricklayers,* &c. uniformly ſend their children, when at the age of ſeven or nine, for the ſpace of four or five years to learn *Latin* at *grammar* ſchools! During this time, the poor boys are forced to attend the ſchool, and not unfrequently whipped into the repetition of ſome *Latin vocables*, which are never to be of any uſe to them during life. For, after performing this, to them, uſeleſs, painful, and dreary taſk, the thread is inſtantly cut, and they are hurried into apprenticeſhips, and, of courſe, into the buſineſs of life, without underſtanding either their *own*, or any other *language.* The progreſs of Nature may, it is true, be ſometimes checked, but never entirely ſtopped. During the hours of receſs from ſcholaſtic diſcipline, ſhe reſumes her empire, and by her irreſiſtible power, obliges the children to friſk and romp about, and to enjoy thoſe various and pure pleaſures which reſult from activity and amuſement. But, theſe enjoyments are no ſooner over, than the abhorred ideas of unnatural confinement, and of a conſtrained attention to *jargon*, which, to them, is completely unintelligible, inſtantly recur, and harraſs and terrify their imaginations.

I have hitherto limited my remarks to *languages* alone. But, with regard to ſentiment, the motely *chaos* becomes doubly *dark.* Of battering rams, ſpears, ſwords, ſhields, and other warlike inſtruments, ſome idea may be formed. But the political views of commanders, the various marches and counter marches of armies, of detached parties for the purpoſes of foraging, or of obſerving the motions and probable intentions of the enemy, and the means employed to ren-

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der theſe intentions abortive, muſt be perfectly incomprehenſible to ſchool-boys, who do not know one inch of the countries where ſuch operations are tranſacting. It will be ſaid, perhaps, that all theſe difficulties may be obviated by proper *maps* and deſcriptions. To young men farther advanced in years, and who are deſtined to ſome learned profeſſion, or to the education which every gentleman ought to receive, *maps* and deſcriptions are excellent ſources of information. But, to ſchool-boys, at the age I ſpeak of, *maps* and deſcriptions convey no ideas of the countries they are intended to repreſent. *Globes*, it may be thought, will remove all objections of this kind. *Globes*, however, only augment the obſcurities ariſing from *maps*, when attempted to be thus prematurely obtruded upon minds totally incapable of underſtanding the principles upon which either of them are conſtructed. The names of countries, of ſome rivers, and chief towns, like *Latin vocables*, may, by the mere exertions of memory, and of perſeverance, be mandated, and repeated, as the words and ſhort ſentences which *parrots* are taught to expreſs. But, by theſe exerciſes, no new ideas are acquired; nor are thoſe which may have formerly been in ſome meaſure acquired, either illuſtrated or expanded. The *fruitleſs* and *painful* labours, however, which ſuch prepoſterous conduct in managing the early education of youth produce, are immenſe, and truly ridiculous.

Theſe and ſimilar obſervations relate principally to *proſe* compoſitions. But, what are we to ſay of *poetry*, the language of which is highly *figurative*, and the *ſentiments* and alluſions are derived from every object of nature and of art, which can ſtrike the imagination of the poet? To read ſuch works of genius and of learning with any degree of intelligence, often baffles the experience, the induſtry, and the abilities of our moſt acute commentators. This remark is appli-

cable, in part, to every ſpecies of poetry, but acquires a redoubled force with regard to that ſpecies called *epic*. Beſide the various deſcriptions and alluſions derived from natural and artificial objects, what goes under the ſtrange appellation of *machinery*, is almoſt perpetually introduced. Not contented with *heroes* and brave *men*, in deſcribing battles and human exertions, *gods* or *devils* muſt interfere in every hoſtile conteſt. In the Heathen mythology, the number of gods and goddeſſes is as infinite as their attributes and deſtinations. Every nation, every town, every mountain, every river, and many principal families, and even individuals, were ſuppoſed to be the favourites of particular divinities, by whom they were ſuperintended, and protected, on all critical emergencies, from danger and death. When two heroes met and commenced a furious combat, if one of them was about to fall, to prevent the deadly blow, a *god* or *goddeſs* inſtantly ſtept forward to his aſſiſtance, and, by ſome ſilly or abſurd miracle, ſaved him from impending deſtruction! BUTLER, that prince of humour and of wit, ridicules, in the fineſt ſtrains, the *machinery* employed by ancient as well as modern poets. When two of his renowned heroes were about to engage, not with ſwords, but with fire-arms, in the moment of danger, he makes PALLAS interpoſe to ſave her favourite, in the following ludicrous manner:

> But PALLAS came in ſhape of *ruſt*,
> And 'twixt the ſpring and hammer thruſt
> Her *Gorgon* ſhield, which made the *cock*
> Stand *ſtiff*, as 'twere transformed to *ſtock*

The ſplendid and beautiful deſcriptions of many natural objects are not more intelligible to mere boys than the machinery of *gods*, of *goddeſſes*, of *angels*, or of *devils*. *Amaranthine* bowers, *myrtle* groves,

* Hudibras, canto 2 line 781.

groves, tombs covered with the diſmal *cypreſs*, crowns of *laurel*, the deadly *nightſhade*, the *cedar* of Lebanon, and a thouſand ſimilar names of objects, are equally unknown to the *maſter*, to the *ſchool-boy*, and often to the very *poets* who uſe them in their compoſitions. When the names and deſcriptions of plants happen to occur in the reading either of proſe or verſe, it would be no difficult taſk, particularly in the ſeminaries of Edinburgh, where we have one of the moſt extenſive and beſt repleniſhed *botanic* gardens in Britain, for *maſters* to procure *ſpecimens* of almoſt every vegetable that is mentioned by the hiſtorians and poets of antiquity. A ſingle inſpection of ſuch ſpecimens would elucidate many paſſages in claſſical authors more completely than all the definitions which human ingenuity can invent. Beſides, this mode of explaining particular parts of the Claſſics would have another happy effect. It would not only give immediate pleaſure to boys, but create a habit of attention to the productions of Nature with which we are perpetually ſurrounded, and perpetually overlook.

But, ſay our *pedagogues*, for an explanation of all ſuch generic or ſpecific *names*, conſult your *dictionary*. We ſhall do ſo; and take a few examples from that of *Ainſworth*. AMARANTHUS, *everlaſting, a flower which never fadeth!* CUPRESSUS, *a cypreſs-tree!* MYRTUS, *a myrtle-tree!* LAURUS, *the laurel or bay-tree!* CIRCÆA, *the herb called night-ſhade!* MORUS, *a mulberry-tree!* MERCURIALIS, *the herb called Mercury!* MESPILUS, *a medlar-tree!* MANDRAGORAS, *an herb called mandrake!* MENTHA, *the herb called mint!* AMYGDALA, *an almond-tree!* PLANTAGO, *plantain!* LEUCOGRAPHIS, *an herb good for thoſe who ſpit blood!* I will not diſturb my readers with more ſpecimens of ſimilar unmeaning *explanations*,

or rather no *explanation* at all; for they convey no ideas whatever. In almoſt every page of our common dictionaries, whether Latin, Engliſh, French, &c. examples of ſuch *jargon* are to be found. Our Lexicographers, however, not unfrequently deſcend ſtill lower, and, inſtead of abſurd definitions, or ſubſtituting Engliſh for Latin names, in which they are likewiſe *often* wrong, content themſelves with barely ſaying, the *name* of a *tree!* the *name* of a *plant!* the *name* of an *herb!* the *name* of a *precious ſtone!* the name of a *four-footed beaſt!* *&c.*

Are theſe the ſources from which *boys*, or even *men*, are to derive information concerning the productions of Nature? But, it is much to be lamented, that, in general, our *pedagogues* themſelves are unqualified to uſe the proper reſources, and, conſequently, muſt be equally ignorant as the pupils they are attempting to inſtruct. To boys the taſk of learning dead languages is ſufficiently hard and laborious. But, when ordered to read paſſages where natural objects of various kinds frequently occur, in the explication of which neither their *dictionaries* nor their *maſters* can afford the ſmalleſt aſſiſtance, the *drudgery* of groping in the *dark* becomes often ſo *painful*, that many boys leave the ſchool perfectly *diſguſted*, and drop for-ever ſuch unprofitable, and, to them, unintelligible ſtudies.

But, notwithſtanding theſe, in particular inſtances, perhaps unavoidable *difficulties*, when ſomewhat farther advanced in years, if young men, by perſevering induſtry, joined to a partial knowledge of ſome branches of ſcience, are once enabled to read and to reliſh the writings of ancient or of foreign authors, then the *pleaſures* reſulting from the peruſal of them more than counterbalance the *pains* ſuffered in the acquiſition of that ſpecies of knowledge. Some of the

the above remarks are equally applicable to the ſtudy of ſcience and of art. But, as the principles of the arts and ſciences are fixed, and ſeldom ſubject to cavil or miſrepreſentation, whenever theſe ſimple and natural principles are properly explained and underſtood, the *pleaſures* ariſing from their application are very great. As formerly remarked, premature *ſtudies* are uniformly *painful*; becauſe ſuch young minds are incapable of comprehending the principles, and far leſs the application of them to arts or ſcience. *Grammar*, the firſt ſcience obtruded upon, I may ſay, *infantine* intellects, is one of the moſt abſtract and intricate. To attain even a tolerable knowledge of grammar, whatever be the language, (for the general principles are, and muſt be the ſame,) preſuppoſes a conſiderable range of intuitive facts, as well as of acquired ideas.

When theſe difficulties, however, are once ſurmounted, and the mind is enabled to perceive the beauties and the utility of ſcience, its *happineſs*, which it hourly receives from a thouſand ſources, may be ſaid, as far as our preſent condition admits, to be complete. But a mind thus cultivated is by no means *ſatisfied*. Every new acquiſition, though attended with *pleaſure*, produces, at the ſame time, a number of *painful* ſenſations. In proportion as the mind is expanded by different kinds of ſcience, its deſire for farther and often impoſſible acquiſitions augments, and gives riſe to *painful* anxieties, which not unfrequently terminate in *dejection*, which is a ſpecies of *madneſs*.

We ſhall now trace the progreſs and feelings of a well informed mind, after it has engaged in the more ſerious and intereſting affairs of ſociety. Here a preliminary remark muſt be made. The more the mind has been ſtored with a variety of knowledge, the

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more *acute* are its *feelings*. It derives *pleaſure* from many ſources, of which the *vulgar* can have no idea. But, mark the reverſe. The cauſes of *pain* augment in more than a quadruple proportion. Of moſt of theſe the *vulgar* have not a conception; but they *torture* the feelings of what are called *refined minds*.

Buſineſs, of one kind or another, now becomes neceſſary; and an almoſt infinite ſeries of *pains* and of *pleaſures* are the unavoidable reſults. Mental or corporeal exertions, however laborious, we ſhall not conſider as abſolutely *painful*; for when theſe are paſt, and followed with ſucceſs, they are cauſes of the greateſt *pleaſures*. At this period of life, another ſource of *pleaſure*, as well as of *pain*, ariſes in an unexpected, and often involuntary manner. Both in the male and female ſex, peculiar and ſtrong attachments are formed. Marriage, in general, is the conſequence of ſuch attachments: But, with regard to the preſent ſubject, what are the common conſequences of marriage? *Children*, and a multitude of new *pleaſures* and *pains*. When in health, the *pleaſures* afforded by children are numerous and delightful; but, when *diſeaſe* comes, the account is more than balanced. A helpleſs infant tortured with *pain* is a moſt *excruciating* object. But, when a lovely child is, perhaps, ſuddenly torn from its mother's breaſt by *death*, the *painful* ſenſations excited by ſuch an event, *parents* alone can know. To proceed: When children have happily got over the common diſeaſes incident to that critical period of life, and have advanced to manhood, and engaged in different occupations, the *anxieties* of parents, inſtead of being *blunted*, become more *acute*. They then look forward, with redoubled *apprehenſion* and *affection*, to the probable ſucceſs or misfortunes of their offſpring. When ſucceſsful, the *pleaſure* is great. But when, from negligence and vice, or even from unforeſeen misfortune,

tune, a contrary event takes place, the *painful* feelings of parents are not to be deſcribed. Parents not unfrequently, from a natural, but ſuperabundant affection, riſk more than their fortune with a view to bring their children reſpectably forward in the world, and to render them happy. Such conduct is fooliſh; but the folly is amiable. A ſingle ſlip, however, in children too frequently produces the greateſt *miſery* to both them and their parents. In all ſuch caſes, contrary to the common adage, *evil comes out of good.*

We have hitherto given ſlight ſketches of the *pains* and *pleaſures* ariſing from highly *cultivated* minds; and ſhall now deſcend to what are called the *vulgar* and uninformed.

The *vulgar*, in all nations and conditions of ſociety, conſtitute the great body of the human race. Born and brought up by poor and ignorant parents, their children, of neceſſity, are excluded from every ſource of ſuperior knowledge. Theſe ſeemingly unfortunate circumſtances, it ſhould appear, would be productive of the greateſt *miſery*. But Nature, ever attentive to the general *happineſs* of her productions, has decreed that the *vulgar* ſhould, at leaſt, be as *happy* as the *learned*. They are excluded from many ſources of real *pleaſure* which the learned poſſeſs. But they know nothing of ſuch defects; and what they do not know cannot poſſibly give them *uneaſineſs*. They labour with chearfulneſs, and eat their food with an appetite which no riches can purchaſe. Every moderate animal *enjoyment* is within their reach; and their rank in ſociety precludes them from many *painful* circumſtances which opulence alone can procure. Their ſleep is ſound and refreſhing; and, as their food is generally light and eaſily digeſted, they are ſeldom troubled with thoſe *diſagreeable dreams* which *torment* the luxurious, whoſe ſto-

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machs are not only feeble, but often overloaded with *dainties*, and ſtill oftener with *intoxicating liquors*. The vulgar are not *harraſſed* with ambition, nor anxiouſly ſolicitous concerning *future* proſpects or *future* events. They *enjoy* the preſent moments as they fly, and *rely* upon the continuance of ſimilar ſources of happineſs.

In their domeſtic affairs, the *vulgar* are exempted from many *evils* which too frequently *perplex* the imagination, and *hurt* the feelings of thoſe who occupy the higher ſtations of life. Of the many *vexatious* circumſtances ariſing from the *negligence*, the *petulance*, the *thefts*, and the long train of *vices* daily committed by *ſervants*, the *vulgar* can never form an *idea*, and, of courſe, cannot *feel* the *uneaſineſſes* which they occaſion. The *vulgar* are likewiſe exempted from a thouſand *reſtraints* and ceremonious *etiquettes*, which cramp the *freedom*, occuply fruitleſsly the *attention*, and give riſe to numberleſs *anxieties* and *diſappointments* among what are called *people of faſhion*. The *pleaſures* of the *vulgar*, though comparatively few, are more genuine and unadulterated, becauſe they are leſs *artificial*, and, of courſe, unaccompanied with *emulation* or *jealouſy*, and ſeldom followed with *regret* or mental *reproach*. The *pleaſures* of the *great* are generally tumultuary, exhauſt the ſpirits, and produce *languor* and *compunction*, two painful feelings which mutually augment each other.

Upon the whole, to men of obſervation and reflection, it muſt be apparent, that the laborious *pleaſures* of the *vulgar* are ſuperior to the *luxurious*, and, I may ſay, *painful pleaſures* of the *learned* and *opulent*.

Proceeding on our plan, we ſhall next conſider the condition of what are called *brute animals* with regard to *pleaſure* and *pain*.

Brutes

Brutes are exempted from a thouſand ſources of *pain* which afflict even the *vulgar* of the human ſpecies. Brutes have not an idea of *futurity*; but they *enjoy* every moment of their exiſtence, which, though, in moſt of them, not ſo long protracted as that of man, is, in general, a continued ſeries of *pleaſures*. I ſpeak not of thoſe animals, or rather ſlaves, called *domeſtic*; for theſe, to the diſgrace of the human ſpecies, are too often overloaded, beat, ſtarved, and maltreated in a ſhocking manner; but I ſpeak of animals in that ſtate which the God of Nature formed them.

The abſence of *pain* is certainly a ſpecies of *pleaſure*. When nothing *hurts* either the *body* or the *mind*, *pleaſing* ſenſations muſt neceſſarily follow. The mere conſciouſneſs of exiſtence is *pleaſure*. If brute animals are excluded from the *pleaſures* of *imagination*, they are, at the ſame time, exempted from innumerable *tortures* to which it gives riſe. Many of them, wherever they ſtroll, find their natural food under their feet. Others, of a more rapacious kind, are obliged to hunt for their ſubſiſtence. Their food, of courſe, is more precarious. But Nature has endowed them with the faculty of ſuſtaining, with impunity, long abſtinence. She has likewiſe beſtowed upon them courage, artifice, patience, and alacrity both in attack and defence.

With regard to bodily *pain*, ariſing either from diſeaſe or external injury, the *brute* muſt ſuffer as much as the *man*. Brutes, however, though they *ſuffer* from theſe cauſes, are not *tormented*, like man, with the *terrors* of their conſequences. They have not a conception of *death*, far leſs of *future* exiſtence, and, what is infinitely worſe, of *eternal* and excruciating *torture*. But, to many of mankind, theſe are perpetual ſources of *miſery* and of *terror*.

Hitherto I have been talking of the comparative *pains* and *pleaſures* of the larger animals. I ſhall now hazard a few remarks with regard to the condition of the more minute tribes.

Inſects are animated beings as well as men and quadrupeds. But it is extremely difficult to form proper ideas of their pains or pleaſures. If we may judge, however, from the quickneſs and vivacity of all *winged* inſects, we ſhould reaſonably conclude that every inſtant of their exiſtence is attended with *pleaſure*. Their lives, eſpecially in their fly-ſtate, is ſhort; but, as a recompenſe, it is all *enjoyment*. They have their food, it is true, to ſearch for and procure; but, from the inſtruments which Nature has conferred upon them, they are enabled to extract nouriſhment from almoſt every vegetable and animal ſubſtance, and even from the earth and waters. In queſt of food, or of their proper mates, they are perpetually *active*; and *activity* itſelf is one of the principal ſources of *animal happineſs*. When *man*, whatever be the cauſe, loſes the ſprings of *activity*, from that moment he is *miſerable*. It is not unnatural, therefore, to conclude, that, whenever we ſee *activity* in the inferior animals, *happineſs* muſt be the conſequence.

The motions of thoſe *inſects* which are not furniſhed with wings are comparatively ſlow and languid; but we are not, from this circumſtance, warranted to infer that they are more *unhappy* than the winged tribes. Motion, whether quick or ſlow, requires *exertion*, and that exertion is not only *pleaſant*, but productive of vigour and of health. Still, however, when we conſult our own feelings, we are neceſſarily led to think, that the moſt *active* animals are the moſt *happy*. In the human ſpecies, an *active* mind *enjoys* life more completely than the *indolent* and *ſluggiſh*. *Sloth*, or the abſence of *activity*, is

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real *pain*. But ſlow motion, in ſome of the inſect tribes, does not imply *inactivity*; becauſe, from their frame, that ſlowneſs of movement requires, perhaps, even greater *exertions* than the rapid motions of other ſpecies.

The ſluggiſh motion of earth-worms, and of ſnails, may, to us, ſeem to indicate great *labour*, and even *pain*. But, it ſhould be conſidered, that, if their movements are comparatively ſlow, their travels are proportionably ſhort; for their food is almoſt perpetually before them.

The great multiplicity of inſects, both in ſpecies and individuals, is often attended with no ſmall injury to man as well as to many other animals. As a counterpoiſe, however, their enemies are innumerable. Myriads of birds, &c. daily devour ten thouſand times the number of *inſects*, both of the winged and reptile kinds. A bird, in an inſtant of time, ſwallows a fly; and, in the ſame inſtant, its life is extinguiſhed, without feeling, perhaps, a ſingle *pang*.

This ſubject ſhall be diſmiſſed with a few remarks. From the facts and obſervations related above, it ſeems to be apparent, that Nature, through the whole of her *animated* productions, has diſtributed her *pleaſures* and her *pains* in an equitable manner. If man and the larger animals are occaſionally ſubjected to a greater number of diſeaſes than the ſmaller tribes, their lives are, in general, protracted to a much longer ſpace; and, of courſe, the *quantity* of their *enjoyment* is increaſed. Some ſpecies of birds, as eagles, parrots, &c. beſide the *pleaſures* ariſing from their natural *activity*, are very long-lived. Moſt of the ſmall birds, though they live not ſo long, are ſtill more *active*; and, of conſequence, their *happineſs* is proportionably augmented. The

lives of moſt inſects are very ſhort; but their *active enjoyments*, during their exiſtence, are almoſt perpetual. Thus, animals of every denomination appear to have nearly an equal portion of *happineſs* and of *pain* beſtowed upon them by the beneficent inſtitutions of Nature. Even *pain* itſelf is no inconſiderable cauſe of *pleaſure*; for, when abated or entirely removed, the *pleaſures* ariſing from theſe fortunate circumſtances are immenſe.

CHAP.

CHAPTER IX.

Of Poiſonous Animals.

POISON, it ought to be remarked, is a relative term. Subſtances which are deleterious or hurtful to one ſpecies of animals, afford the moſt ſalutary food to others. The bite of the common viper is very poiſonous, and its effects are various to man, as well as to many other animals. But broth made of vipers is often preſcribed by phyſicians in caſes of conſumption and of general weakneſs. I ſuppoſe, however, that the heads, which are the chief, or rather the only receptacles of the poiſon, are cut off before the animals are boiled; for FONTANA, that juſtly celebrated Naturaliſt, who made more experiments upon the nature and effects of poiſons than any man either before or after his time, has ſhown, that the venomous liquid, even when taken into the ſtomach, and without the intervention of any wound, is extremely dangerous and hurtful. REDI, and ſome other authors, maintain a contrary opinion. But FONTANA, with much probability, attributes theſe innocuous effects to the ſmallneſs of the quantities thrown into the ſtomach at one time.

The venom of all vipers, of which there are many ſpecies, when introduced, by means of a bite, into the bodies of men and other animals,

animals, is extremely hurtful, and, if not timely prevented, is certainly mortal. The Abbé FONTANA, anxious to diſcover a remedy to remove, or rather prevent, the dreadful effects of this animal poiſon, tried, often at the hazard of his own life, ſeveral thouſand experiments on this ſubject. In the courſe of theſe, he found, that oils, and particularly that of turpentine, were the moſt effectual in preventing the too often fatal effects of poiſoned wounds occaſioned by the bite of vipers. The beſt method of applying this remedy, he tells us from his own experience, which was great, is to foment the part affected with oil of turpentine as hot as the patient can conveniently bear, and to continue this application a long time. He thinks it alſo of uſe to keep the part affected immerſed in water, either pure or impregnated, with ſome of the neutral ſalts, or with quicklime. Theſe applications leſſen the pain and inflammation. He likewiſe found that vomits had ſome effect in preventing the danger, but cutting out the wounded part, as ſoon as poſſible after the accident, was always the moſt effectual remedy, becauſe it prevented the poiſon from being abſorbed into the general circulation of the maſs of blood, which infallibly produces death. The ſame method of care is practiſed with equal ſucceſs upon ſheep, horſes, and black cattle, who are much more liable, when browſing on heaths, to be wounded by vipers than the human ſpecies.

Upon this ſubject, a curious and extraordinary fact muſt not be omitted. That inſignificant and inactive inſect called the *freſh water polypus*, of all poiſonous animals, ſeems to poſſeſs the moſt powerful and active venom. Small water-worms, which the polypus is only able to attack, are ſo tenacious of life, that they may be cut to pieces without their ſeeming to receive any material injury, or to ſuffer much pain from the inciſions. But the poiſon of the

polypus

polypus inſtantly extinguiſhes every principle of life and motion. What is ſingular, the mouth or lips of the polypus have no ſooner touched this worm than it expires. No wound, however, is to be perceived in the dead animal. By experiments made with the beſt microſcopes, it has been found, that the polypus is neither provided with teeth, nor any other inſtrument that could pierce the ſkin

The *ſpider*, which feeds upon flies, waſps, and ſimilar inſects, is furniſhed with a very ſharp hooked forceps, placed near the mouth. With this weapon he ſeizes and pierces the fleſh of ſuch inſects as entangle themſelves in his web; and, at the ſame inſtant, by means of a ſmall white proboſcis, he infuſes a poiſonous juice into the wound, which, in a moment, kills the animal. This poiſon muſt be very active and deleterious; for flies, and many other inſects, may be mutilated by depriving them of their legs, wings, and even cutting their bodies through the very middle of the abdomen, and, in that condition, will ſurvive ſeveral days, as I have frequently experienced. I never proſecuted the experiment ſo far as to know whether any of the lopped off parts would be reproduced.

The poiſonous weapons of the *ſcolapendra*, or *centipes*, are ſomewhat different from thoſe of the ſpider. Its bite is ſo painful, eſpecially in the Eaſt Indies, as we are informed by BONTIUS, that it makes the patient almoſt mad. When the claws of its forceps are examined by a microſcope, on the upper ſide of each of them, near the point, a ſmall aperture appears, through which the venom is conveyed into the wound. Of the Eaſt India centipes, LEEUWENHOEK † had one ſent to him alive; and he found, that, by preſſing

* Abbé Fontana on Poiſons, vol. 1. p. 106. Tranſ.

† Continuatio Arcan. Natur. epiſt. 124.

preſſing the claw, a ſmall drop of liquor iſſued out of this aperture.

Stinging animals, of which the *ſcorpion* is the chief, likewiſe inſtil a liquor into the wounds they make. The poiſon of ſcorpions is more or leſs virulent in proportion to the heat of the countries they inhabit. In ſome parts of Africa, its effects are ſo dreadful, and theſe horrible reptiles ſo numerous, that LEO tells us, the town of Peſcara is annually almoſt totally deſerted by the inhabitants in the ſummer months; becauſe inevitable death is the conſequence of the ſcorpion's ſting *. Signor REDI, when reſiding at Florence, had ſeveral African ſcorpions ſent him from Tunis. They arrived in the month of November; and he irritated them to ſting pigeons, pullets, &c. without diſcovering the ſmalleſt ſymptoms of uneaſineſs in theſe animals. But, what is ſingular, on the approach of ſpring, one of the ſcorpions, which had remained no leſs than eight months without food, and the wound of whoſe ſting was formerly attended with no bad effects, ſtung to death two pigeons ſucceſſively. A third and fourth, however, though wounded in the ſame manner, received no injury. But the ſame ſcorpion, after being allowed to reſt all night, killed another pigeon next morning. At the point of the ſting, REDI often obſerved a ſmall drop of white liquor, which entered the animal's body along with the ſting. This liquid venom, it ſhould appear, is not ſecreted from the blood and other juices of the animal, during the cold months of winter. The operation of cold is alſo greatly aſſiſted by abſtinence from food. Benumbed with cold, and half-ſtarved for want of food, how is it to be expected that the animal's fluids ſhould retain their former vigour and activity, far leſs that they ſhould be able to afford a liquor

* Leo Hiſtor. Afric. lib. vi

quor ſo highly exalted as to deprive other creatures of life? Like certain fluids of other animals, which are ſecreted in ſmall quantities only, the ſting of the ſcorpion, even in the hotteſt months of ſummer, after two or three attacks, is perfectly inoffenſive, till the expenditure of this deleterious liquor has again been replaced by the operation of food and of time.

In the hiſtory of the *ſcorpion*, a remarkable circumſtance muſt not be omitted. We are informed by gentlemen of veracity, who had lived ſeveral years in *Barbary*, that, when a ſcorpion is ſurrounded with a circle of burning coals or wood, and the animal begins to be pained with the heat, it runs about violently in queſt of ſome mode of eſcape; but, finding that impoſſible, it ſtrikes itſelf two or three times on the back parts with its ſting, by which wounds its life is immediately extinguiſhed. We are likewiſe told, that this is a common amuſement among the ſoldiers of Gibraltar, where theſe noxious animals abound. This ſelf-murder, produced by pain and deſpair, indicates two curious inſtincts; 1. That the ſcorpion is ſenſible of his dangerous ſituation; and, 2. That he knows the mode of getting quit of a painful and deſperate exiſtence. This fact likewiſe decides another controverſy, whether poiſonous animals of the ſame ſpecies can kill another by an infuſion of their venom. The ſame fact is exhibited by the viper. Dr HERMAN, when tranſporting three large vipers in one glaſs, two of them were killed during the voyage by fighting and biting each other with their poiſonous fangs; and the learned RHODIUS obſerved, at Padua, that two ſcorpions, which were put into the ſame glaſs, fought with their ſtings, and one of them firſt killed the other, and then devoured it.

The ſtructure of the ſtings of *bees*, *waſps*, *hornets*, &c. has been

accurately deſcribed by ſeveral authors, and particularly by HOOKE and REAUMUR. Even with the naked eye, a perſon may ſometimes perceive a bee diſcharge the venom from its ſting; which is rendered ſtill more perſpicuous by a common magnifying glaſs. As the ſtings of theſe, and many other ſmaller inſects, often produce inflammation and pain, theſe effects may be very ſoon prevented or removed by ſucking out the inſtilled poiſonous drop with the mouth; but, if this has been neglected, fomenting the part affected with warm oil and diſcutient ointments, as in the bite of the viper, ſeldom fails to be a complete cure.

We ſhall now make a few remarks upon the bite of that enormous ſpecies of ſpider denominated the *tarantula*. It is very frequent in, and infeſts that warm diſtrict of Italy called *Apulia*. BAGLIVI, a native of that country, and a well known and learned phyſician, publiſhed a long diſſertation on this ſubject *. After BAGLIVI, LUDOVICUS VALETTA, a Celeſtine monk of Apulia, favoured the world with a treatiſe concerning this dangerous ſpider †.

The *tarantula* is a ſpider of that ſpecies which has eight eyes and eight legs, four on each ſide, and three joints in every leg. From the mouth proceed two ſharp darts ſimilar to a hooked forceps, or the claws of a crab, by which the animal can eaſily pierce the ſkin; and, after the wound is inflicted, the tarantula, by means of a proboſcis ſituated between the claws of the forceps, inſtils a drop of a moſt active venom, which reſiſts the operation of the uſual *alexipharmic* medicines; for, notwithſtanding the repeated uſe of them, the patient is affected with a gradually increaſing melancholy, grows perfectly

* See Baglivi de Praxi Medica, et Diſſertationes, Romae, 1696.

† De Phalangio Apulo Opuſculum, Neapoli, 1706.

perfectly ſtupid and timorous, and, in a ſhort time, expires. By what accident or fortunate thought an almoſt certain cure for the bite of the tarantula was firſt diſcovered, it is of little moment to inquire. But it is an unqueſtionable fact, that *muſic* is the only effectual remedy. At the firſt ſound of a muſical inſtrument, if the tune happens to rouſe the attention and ſtrike the fancy of the patients, though lying motionleſs, as in a fit of apoplectic ſtupor, they gradually begin to move their hands and feet, and at laſt get up, and, for three or four hours, dance with wonderful vigour and agility, which occaſions profuſe ſweatings. They are then put to bed for a ſhort time, and afterwards renew their dancing with the ſame ſpirit and vehemence. Inſtead of being exhauſted by this violent exerciſe, the patients declare, and ſhow by their exertions, that, inſtead of fatiguing them, the more they dance they become the ſtronger and the more nimble. In this exerciſe, the perſons bit by the tarantula generally occupy twelve hours a day, and continue it for three or four days, when all ſymptoms of diſtreſs are completely removed. It is not every ſpecies of muſic which excites patients; for ſome are ſtruck with one kind, and ſome with another. One is rouſed with a flute, another with a timbrel; one with a harp, and another with the violin. The muſicians, accordingly, are obliged to make a variety of trials before they can accommodate their art to the minds of the ſufferers. But we are aſſured by REDI, MEAD, FONTANA, &c. that briſk and chearful tunes produce the moſt inſtantaneous and happy effects; but that ſlow and melancholy airs have not the ſmalleſt influence. Whilſt the *tarantali*, as they are called, or perſons who have been bit by the tarantula, are dancing to muſic, they ſeem to loſe all ſenſe of modeſty and decorum; they perform many ridiculous tricks, and talk in the moſt obſcene manner. Heat exalts, and, of courſe, augments the dangers ariſing

from every ſpecies of animal-poiſon. Apulia is the hotteſt diſtrict of Italy; and, accordingly, the bite of the tarantula there produces more violent effects than in any other part of that country. The inhabitants of Apulia, from the heat of the climate, conjoined, perhaps, with ſome other circumſtances, are generally meagre, paſſionate, witty, and, in an uncommon degree, ſubject to inflammatory diſeaſes, phrenſies, melancholy, and other ſpecies of madneſs. We are informed by Dr MEAD, who collected his facts from the moſt reſpectable authorities, that, in other countries, cauſes which produce only a ſlight melancholy, occaſion the moſt deplorable effects in Apulia. 'Women,' he remarks, 'in a *chloroſis*, ſuffer almoſt 'the ſame ſymptoms as perſons poiſoned by the tarantula do, and 'are cured the ſame way; and, in like manner, the venom of the 'ſcorpion does here, in effects and cure, agree very much with that 'of this ſpider *.'

From theſe, and many other inſtances of ſalutary effects of *muſic* in removing diſeaſes produced by animal-poiſons, it is amazing that this remedy is ſo ſeldom tried by our modern phyſicians. In many ſpecies of melancholy and madneſs, from whatever cauſes they originate, the effects of different kinds of muſic might at leaſt be tried. If a perſon labouring under a deep melancholy could be excited to dance with ſpirit, and even with ſome violence, profuſe ſweats would be induced, and, probably, as in caſes of mania occaſioned by the bites or ſtings of poiſonous animals, theſe ſweats would expel the noxious cauſe from the ſyſtem. Muſic might even be tried in the paroxyſms of madneſs. If it ſhould be found, which is by no means improbable, that muſic allays or cools the over-heated animal fluids, and, conſequently, the turbulence of the mind,

* Mead on Poiſons, p. 108

mind, this cure would be infinitely more humane than the *coercions* of *ſtrait waiſtcoats*, *ſtripes*, &c. which are, perhaps, too commonly preſcribed even by the beſt phyſicians.

Ideas of this kind ſhould not be deſpiſed. The antients, with great wiſdom and ingenuity, employed *muſic* as a cure, or, at leaſt, as an alleviating remedy in almoſt every kind of *madneſs*. We are informed by a Jewiſh hiſtorian *, that SAUL, then King of the Jews, was afflicted with an *evil ſpirit* ſent from the LORD; that is, the man was *mad*. What I think exceedingly curious, and ſhows the general opinion among thoſe people concerning the ſalutary effects of *muſic* in mental diſeaſes, is, that even the *ſervants* of SAUL, when he was frantic, recommended *tunes* on the *harp* as the moſt effectual cure. The paſſage is ſo remarkable, that I cannot refrain from tranſcribing it. 'And SAUL's ſervants ſaid unto him, Behold now 'an evil ſpirit from GOD troubleth thee: Let our lord now com-'mand thy ſervants, which are before thee, to ſeek out a man who 'is a *cunning player* on an *harp*: And it ſhall come to paſs, when 'the evil ſpirit from GOD is upon thee, that he ſhall play with his 'hand, and thou ſhalt be well. And SAUL anſwered one of his ſer-'vants, and ſaid, Behold, I have ſeen a ſon of JESSE the Bethlehem-'ite, that is *cunning* in *playing*.—Wherefore SAUL ſent meſſengers 'unto JESSE, and ſaid, Send me DAVID thy ſon, which is with the 'ſheep. And JESSE took an aſs laden with bread, and a bottle of 'wine, and a kid, and ſent them by DAVID his ſon unto SAUL. 'And DAVID came to SAUL, and ſtood before him; and he loved 'him greatly, and he became his armour-bearer. And SAUL ſent to 'JESSE, ſaying, Let DAVID, I pray thee, ſtand before me; for he 'hath found favour in my ſight. And it came to paſs, when the 'evil

* 1. Samuel, chap. 16.

'evil ſpirit from GOD was upon SAUL, that DAVID took an *harp*, and 'played with his hand: So SAUL was *refreſhed*, and was *well*, and 'the evil ſpirit departed from him *.' This is all well; but, from the following part of the hiſtory, we learn that DAVID was not only *cunning* in playing on the *harp*, but that he was equally *cunning* in *politics*; for, in a ſhort time afterwards, he *harped* poor SAUL both out of his *kingdom* and his *life*.

The old Greeks and Romans ſeem to have underſtood the effects of *muſic* in alleviating and even curing particular diſeaſes. We are told by GALEN, an antient, and, to this day, a moſt celebrated phyſician, 'that ÆSCULAPIUS uſed to recover thoſe, in whom violent 'motions of the mind had induced a hot temperament of body, by 'melody and ſongs †.' PINDAR, in one of his odes, takes notice of the ſame happy effects produced by *muſic*; and Dr MEAD very properly remarks, that, from theſe and ſimilar facts, not only the notion but the term of *charming (a carmine)* ſeems to have derived its origin ‡. THEOPHRASTUS, in his Treatiſe on *Enthuſiaſm*, informs us, that *iſchiadic* pains were cured by the *Phrygian* melody. This ſpecies of muſic was performed upon the pipe, and was the moſt vehement and exhilarating that was known among the antients; for it ſometimes excited the hearers to what had the appearance of maniacal and furious exertions of body ‖, which perfectly correſponds with the effects of *muſic* in expelling the venom of the *tarantula*. Beſide the effects of muſic upon the minds of perſons labouring under certain diſeaſes, ſome of the antient phyſicians carried this practice

* 1 Samuel, chap. 16. verſe 15. to the end.

† De Sanit. Tuenda, lib. 1. cap. 8.

‡ Mead on Poiſons, p. 123.

‖ Bartholin. de tibus veter. lib. 1. cap. 9.

tice farther, and placed the inſtrument upon the part affected. CAELIUS AURELIANUS denominates this application of muſic, *decantare loca dolentia*; and adds, that the pain is mitigated and often diſcuſſed by the tremblings and palpitations of the diſeaſed part *. AULUS GELLIUS mentions this ſame cure of *iſchiadic* complaints, and ſubjoins, from THEOPHRASTUS, 'that the muſic of a pipe, rightly 'managed, healed the bites of vipers †.'

APOLLONIUS tells us, that *muſic* cured diſtractions of mind, epilepſies, and many other diſtempers ‡. As to this fact, he is joined by DEMOCRITUS, who taught, that the *muſic* of *pipes* was the proper medicine for many diſeaſes ‖; which THALES of *Crete* confirmed by his practice. When ſent for by the LACEDEMONIANS to remove the peſtilence from them, he is ſaid to have done it by the operation of *muſic* §. All theſe inſtances ſhow, at leaſt, that *muſic* was very antiently employed as a remedy both in mental as well as corporeal diſeaſes. CAELIUS AURELIANUS aſcribes the invention of this cure to PYTHAGORAS, who ſettled and founded his ſect in that very part of Italy where the *tarantulae* are moſt frequent, which was then called *Graecia Magna*, and now *Calabria*.

With regard to the dreadful effects produced by the bite of a *mad dog*, we ſhall make only a few remarks. The terrible diſeaſe it occaſions is generally known by the appellation of *hydrophobia*, or *dread of water*. The wound from the bite of a mad dog, at firſt, differs not

* Morb. chronic. lib. 5. cap. 1

† Noct. Attic. lib. 4. cap. 13.

‡ Hiſtor. Mirab.l.

‖ Apud Aul. Gell. loc. citat

§ Plutarch. de Muſica.

not from that of any other animal, and heals as ſoon; for a conſiderable time often elapſes before any ſymptoms of madneſs appear. Inſtances are recorded where the diſeaſe was deferred till two, three, or ſix months after the wound was inflicted. I myſelf knew a caſe where the wound did not ſhow itſelf till full twelve months after the bite. This caſe was that of JAMES POLLOCK, a blackſmith and athletic perſon, in the ſuburbs of Edinburgh. As ſoon as ſymptoms of madneſs appeared, he was carried to the Royal Infirmary, where, in a few days, he died of an evident *hydrophobia*. GALEN tells us, that he ſaw a caſe of *hydrophobia* more than a year after the wound was received *. Dr MEAD, who had great practice as well as ſkill with regard to the effects of different poiſons, informs us, that he knew a caſe of this diſeaſe more than eleven months after the fatal accident. He adds, however, that the attack generally happens in thirty or forty days, and ſometimes, eſpecially in young people, in fifteen or ſixteen. The firſt approaches of this diſtemper are commonly diſcoverable by an acute pain in the part that had been wounded, which gradually extends to the adjacent parts, and is followed by a general laſſitude, and an uneaſineſs in the limbs. The patient then grows melancholy; his ſleep is diſturbed and unrefreſhing; he complains of faintneſs and of depreſſed ſpirits, and eſpecially of an oppreſſion at his breaſt; his pulſe intermits; his nerves and members tremble; he is affected with cold ſweats, a great ſickneſs, and loaths every ſpecies of food. Though he feels an inward heat and thirſt, and wiſhes to drink; yet he ſwallows meat, but particularly liquors, with the utmoſt difficulty. Theſe ſymptoms proceed increaſing in their violence; and, the next day, from the pain he feels in ſwallowing, he conceives ſuch an averſion to liquids, that the very ſight of them throws him into dreadful convulſions. This *hydrophobia* has always

* Comment. 2 in 1. Prorrhet. Hippocrat.

always been conſidered as an infallible ſymptom of a perſon's being affected by the poiſon proceeding from the bite of a mad dog; for it ſeldom, if ever, appears in any other diſeaſe.

At this period of the diſtemper, a fever uſually comes on, which is attended with a quick but low pulſe. The patient cannot command the ſmalleſt degree of ſleep; his voice turns hoarſe; a white froth collects in his mouth, which he ſpits out upon the people about him; univerſal convulſions ſucceed, but particularly in the throat, and in the *muſculi erectores penis*, which produce a continued *priapiſm*. During this diſmal ſcene, which is generally fatal in the courſe of two or three days, a *delirium* appears, ſometimes attended with the moſt dreadful paroxyſms of rage and fury, and frequent attempts of the patients to injure their moſt beloved friends and relations. But this diſeaſe, inſtead of *furor*, more commonly terminates in a deep *melancholy*. In this ſituation, the unhappy but humane patient, reſigns himſelf to the quick approaches of death, and deſires his attendants to beware leſt he ſhould hurt them, begs them not to trouble him any more, and, in a ſhort time, expires in convulſions.

This cruel and terrifying diſeaſe is taken notice of by many of the antients, ſuch as DIOSCORIDES, GALEN, AETIUS, ÆGINETA, &c. None of them, however, have deſcribed it ſo accurately, and with ſo much preciſion, as CAELIUS AURELIANUS *. From the writings of SORANUS, and other Greek phyſicians, he has collected the ſymptoms of this diſeaſe with great care and exactneſs. Among the moderns, the hiſtory of this malady is ably delivered to us by VANDER WIEL †, and the ingenious Dr LISTER ‡. There are ſome ſymp-

* De Morbis acutis, lib. 3.

† Obſervat. varior. cent. 1. obſ. 100.

‡ Exercit. Medicinal.

toms, though with occaſional variations, are common to all perſons infected with this deleterious poiſon. The ſlighteſt touch of any part of their bodies is painful. The ſmalleſt noiſe is offenſive to their ears; and the opening or ſhutting of a door terrifies them as much as if the houſe were falling upon them. Light is ſo hurtful to the eyes, that even the ſight of any white ſubſtance becomes intolerable. The internal parts are likewiſe ſo tender and eaſily affected, that they cannot bear their natural *ſtimuli*. The ordinary coolneſs of freſh air is diſagreeable to the lungs; and the paſſage of urine is accompanied with great pain. The aſpect of the ſufferers is either frightful with threatening ſymptoms of rage and fury, or dull, depreſſed, and attended with moanings and every indication of deſpair. When the patient is *maniacal*, the ſtrength of the muſcles is almoſt incredible. Dr MEAD mentions a caſe of a man who was tied down in bed with ſtrong cords; but ſuch was the convulſive force of his muſcles, that he broke the whole by one great exertion, and immediately died paralytic. But ſuch exertions of ſtrength are not peculiar to *canine* madneſs. In every ſpecies of *mania*, from whatever cauſe it originates, when an actual *furor* comes on, the exertions of muſcular force are prodigious. The cauſe of this increaſed force of muſcular action is obvious. In madneſs, the ſenſe of pain is either almoſt extinguiſhed, or, which amounts to the ſame thing, is not attended to by the patient. Whenever the ſenſe of pain is blunted or obliterated, nothing but actual tearing the tendons or muſcular fibres can put an end to their mechanical powers. Men, when not diſordered in mind, are obliged to deſiſt from overſtretching their muſcles by the pain it produces.

With regard to the *cure* of this horrible diſtemper, it accords not with my plan to be very particular. When evident ſymptoms of canine

nine madneſs once exhibit themſelves, the ſkill of the phyſician, as well as the virtues of medicines, are totally ineffectual. But, whenever a perſon is bit by a dog who is, perhaps, only ſuppoſed to be mad, medical practitioners, with great propriety, employ preventative remedies, the principal of which I ſhall juſt mention.

The wounded part is the firſt object of attention. The antient phyſicians *, who, in this article, are ſtill followed by the moderns †, adviſed, where the part would admit of it, that the wound ſhould be enlarged by inciſion; that a cupping-glaſs ſhould be applied; that the wound ſhould be ſeared with a hot iron; and that a diſcharge from the ulcer ſhould be artificially kept up for many days. Two or three preventative remedies are recommended upon ſeemingly rational grounds: The *cineres cancrorum fluviatilium*, or aſhes of the river craw-fiſh, have been often celebrated. Theſe were procured by burning the fiſh alive upon a plate of copper, with a fire made of the twigs of white briony. GALEN avers, that this remedy was never employed without ſucceſs. Before the days of GALEN, DIOSCORIDES tells us ‡, that this plant is a medicine, the efficacy of which may be relied upon. A ſpoonful or two of this calcined powder were given to the patient every day; and the ſame doſe was continued for forty days. It was uſed either alone, or mixed with a ſmall porportion of *gentian root* and *frankincenſe*.

The *Spongia, vel Cynorrhodi, Roſae ſylveſtris*, the ſponge of the dog-roſe, is another celebrated antidote againſt canine as well as other animal poiſons. P. BACCONE ‖, who wrote a treatiſe upon

* Galen. de Ther. ad Priſ. lib. 1. cap. 16. Aetius, lib. 6. cap. 14. Celſus, lib. 5. cap. 27. † Hildan. Obſ. cent. 1. obſ. 87. ‡ De Theriac. cap. 2.

‖ Muſco de plante rare, obſ. 2.

its virtues, informs us, that, in Sicily, it has received the denomination of *Sanatodos*, or *All-heal.* The plant *Alyſſum*, or *Madwort*, among the antients, had its name from its great efficacy in preventing *canine madneſs*. *Garlic*, *Agrimony*, and *Oxylapathum*, were likewiſe employed with advantage. Dr MEAD juſtly remarks, that all theſe remedies are powerful *diuretics.*

Moſt *inſects*, eſpecially when taken internally, create an unuſual diſcharge of *urine:* But thoſe flies, known by the name of *Cantharides*, have a more powerful effect in promoting this evacuation than any other ſpecies. The learned BACCIUS *, from the authority of RHAZES and JOANNES DAMASCENUS, preſcribes *Canthariides* to be given in ſubſtance for many days ſucceſſively. This *antidote*, as he calls it, is prepared by infuſing the flies in ſour butter-milk twenty-four hours, then drying them, and, with the flour of lentils and wine, making them up into troches of about a ſcruple in weight, one of which is to be taken every day. Even though the patient, he adds, by the uſe of this medicine, ſhould paſs urine mixed with blood, yet copious draughts of milk removes that ſymptom, and the *hydrophobia* is happily prevented. We are likewiſe informed by BACCONE, that the phyſicians in Upper Hungary preſcribe five *Cantharides* as a doſe to men, and a greater quantity to larger animals †.

ARETIUS ‡, who carefully collected all the medicines preſcribed by the antient phyſicians for preventing or curing *canine* madneſs, affirms, that he himſelf knew an old man who cured thoſe who had the misfortune to be bit with *common ſorrel* only. He waſhed the wound with a decoction of this plant, and laid it on the part as a cataplaſm, and likewiſe

* De Venen. p. 89.

† Muſeo di fiſica, obſ. 21.

‡ Lib. 6. cap. 24.

likewiſe gave it in drink, which made the patient diſcharge great quantities of turbid urine.

From all theſe and ſimilar accounts, it appears that the remedies againſt the effects of this poiſon have, in all ages, been ſtrong *diuretics*. By reflecting on this circumſtance, the celebrated Dr MEAD was led to recommend the following preſcription: 'Let the patient 'be blooded at the arm nine or ten ounces. Take of the herb cal- 'led, in Latin, *Lichen cinereus terreſtris*; in Engliſh, *Aſh-coloured* 'ground liver-wort, cleaned, dried, and powdered, half an ounce;— 'of black pepper powdered, two drachms: Mix them well together, 'and divide the powder into four doſes, one of which muſt be taken 'every morning, faſting for four mornings ſucceſſively, in half a pint 'of cow's milk warm. After theſe four doſes are taken, the patient 'muſt go into the cold bath, or a cold ſpring or river, every morn- 'ing faſting, for a month: He muſt be dipped all over, but ſtay in '(with his head above water) longer than half a minute, if the water 'be very cold. After this, he muſt go in three times a week for a 'fortnight longer *.'

This remedy was firſt publiſhed in the Philoſophical Tranſactions of London †, by Mr DAMPIER, in whoſe family it had been long, and, of courſe, infamouſly kept a ſecret. In the year 1721, however, Dr MEAD, like a gentleman and a man of humanity, procured it to be inſerted in the *Pharmacopeia Londinenſis*, under the name of *Pulvis antilyſſus*. This Lichen, like the other medicines formerly recommended, is a ſtrong diuretic. To this preſcription Dr MEAD added cold bathing, either in the ſea or river water, according to the ſituation

* Mead on Poiſons, p. 164.

† No. 237.

tion and circumſtances of the patient. The antients alſo had the idea of curing canine madneſs by cold bathing. But, inſtead of employing it as a preventative, they never uſed it till evident ſymptoms of *hydrophobia* appeared, when it was perfectly ineffectual. Beſides, their practice often amounted nearly to actual *drowning*, which, to be ſure, would remove every diſeaſe as well as the *hydrophobia*. CELSUS *, who was a bold as well as a ſkilful phyſician, preſcribes cold bathing as the only certain cure for this dreadful diſeaſe; and adviſes, that, if the patient cannot ſwim, he ſhould be allowed to remain ſome time under the water, that he may ſwallow part of the fluid; and, if he can ſwim, that he ſhould be kept under by force, in order to compel him to drink. Dr MEAD remarks, that this practice is juſt *drowning* and *recovering* by turns †. We are told by the famous VAN HELMONT ‡, that he ſaw an old man, who had been ſeized with the *hydrophobia*, cured by *ſubmerſion* in ſalt water; that this patient was firſt held under water about four minutes, then taken out, and again plunged twice, about a minute each time; that, when taken out, he was thought to be quite *dead*; but that, by warmth, and by being laid acroſs a barrel, he threw up the water he had been obliged to ſwallow, and recovered both his life and right ſenſes! The ſame author tells a ſtory of a cure of the common *mania* by *drowning* the patient in freſh water; from which he draws this *ſage* concluſion, that it makes no *difference* in the caſe whether the water be *ſalt* or *freſh!* Such medical practice may be reckoned *bold*, as it certainly is; for, to *drown* any perſon will moſt effectually remove all his *complaints!* It is aſtoniſhing that the learned Dr MEAD, within leſs than fifty years ago, ſhould have related ſeriouſly ſtories almoſt equally ridiculous in *ſubſtance*,

as

* Lib. 5. cap. 27.

† Mead on Poiſons, p. 172.

‡ Ortus Medicin. demens idea.

as they are abſurd in the *terms* he employs; but ſo it is* ! The Doctor, however, afterwards remarks, that, before the canine madneſs makes its appearance, ſimple *immerſion*, without *drowning*, often prevents this horrible diſeaſe †.

Two other preventative remedies have been, by ſome phyſicians, highly recommended. 1. What is called the *Ormſkirk medicine for the bite of a mad dog:* It is no part of my buſineſs to give ſpecific quantities, becauſe theſe may be either falſe or fanciful. I ſhall, however, relate the baſes of the two ſuppoſed remedies.

1. The *Ormſkirk* medicine conſiſts of chalk, alum, Armenian bole, the powder of the plant called *elacampen*, and the oil of aniſeſeeds.

2. The *tonquin* remedy, which is recommended as an antidote by Sir GEORGE COBB. It is compoſed of native and factitious cinnabar, compounded with muſk.

With regard to the *ſerpent* tribe, which is very numerous, ſome of them are armed with *fangs*, through which a mortal poiſon is conveyed into the bodies of ſuch animals as they happen to bite; but luckily the proportion of theſe noxious ſpecies, when compared to the whole, is very ſmall. The ſpecies of *ſerpents* deſcribed by LINNÆUS amount to 218, of which 32 only are poiſonous, and, of courſe, 186 are innocuous. Of *lizards*, 77 ſpecies are enumerated, not one of which contains or emits a particle of venom. The *toad* is a verrucous animal, has a lurid appearance; his movements are

* Mead on Poiſons, p. 173.

† Ibid. p. 177.

are sluggish and disgusting; and, when irritated, he emits, from every pore of his body, a frothy substance like saliva. The forbidding aspect of the toad has created him numberless enemies, as well as a very bad, though very unjust, character. Wherever he appears, he is persecuted, maltreated, and murdered, by children, and even by adults, on the supposition, that, because he is an ugly animal, he must therefore be venomous; but, notwithstanding his unseemly appearance, he is inoffensive, and perfectly destitute of poison. The same remark applies both to our water and land *lizards*, of which we have very few species that are natives of Britain. Still, however, though their aspect is by no means so disgusting as that of the toad, a ridiculous opinion is generally entertained that they are venomous, and they, accordingly, suffer the same persecution as that innocent animal.

Of venomous animals, I have looked, but looked in vain, for a final cause. What could be the intention of creating *reptiles*, both abhorrent to the sight, and, by their bites or stings, fatal to men and other animals, I cannot even form a conjecture. Their poison, it has been said, is given to them as a personal protection. That I deny; for, even of the *serpent* tribes, though the form of their bodies, and their mode of life be nearly the same, not one in ten of them are provided with this supposed defence. A man, when walking, either for health or amusement, on a grassy turf, accidentally tramples upon a viper; the abominable reptile bites him, instils a poison into the wound, and, if proper remedies are not timely applied, a cruel and inevitable death is the consequence. He will be more than an intelligent man who can demonstrate a *final*, or, which is the same thing, a *good* cause, for such a *consequence*. Serpents have, in all ages and countries, had the reputation of extraordinary

sagacity,

ſagacity, or rather *cunning*, for what reaſon I could never diſcover. Their aſpect, their movements, the idea of their venom, in a word, their whole frame, excite horror. When theſe circumſtances are taken into conſideration, what, in the name of wonder, ſhould have induced MOSES to repreſent this *vile*, this *abhorrent* animal, as a proper object of *temptation* to what, we muſt ſuppoſe, to have been the fineſt woman that ever exiſted? Yet *ſuch things are!*

Concluſion of the PHILOSOPHY OF *NATURAL* HISTORY.

I HAVE now finiſhed my original plan; with what ſucceſs I know not. I ſhall only ſay, what every intelligent reader will eaſily perceive, that my labours have been great. Before I began the work, had I known the numerous authors which it was neceſſary to peruſe and conſult, I ſhould probably have ſhrunk back, and given up the attempt as impracticable, eſpecially for a man ſo early engaged in the buſineſs of life, and the cares reſulting from a family of no leſs than *thirteen* children, *nine* of whom are ſtill in life.

In the firſt and ſecond volumes, I have endeavoured to unfold the general as well as diſtinctive properties of the vegetable and animal kingdoms. Occaſionally, I have done more. I have ſometimes given pretty full characters both of the figure, diſpoſitions, and manners of animals. In theſe deſcriptive diſcurſions, MAN has not been neglected. Being the principal animal in this planet, he, of courſe, deſerved particular attention, and it has not been

with-held. The varieties of the human ſpecies, in every region of the globe, have been collected and deſcribed from the moſt authentic reſources both antient and modern. Even in the moſt uncultivated, and, to us, deplorable ſituation of the human race, evident traces of goodneſs, of genius, and of heroiſm, are to be found. Theſe amiable qualities, it muſt be confeſſed, are too often ſullied by cruelty, irraſcible paſſions, and every ſpecies of vice. But theſe qualities are univerſal, in whatever ſituation men, whether in a civilized or barbarous ſtate, are placed. The ſtrangeſt and moſt unaccountable part of the hiſtory of mankind is that of their *eating* one another; and yet, from the numerous evidences I have produced, it is impoſſible not to give credit to the ſhocking fact. The reality of *human ſacrifices* is equally certain as the exiſtence of *cannibals*. The diverſity of diſpoſitions, the verſatility of genius, the great differences of taſte and of purſuits, are ſtrong characters of *Man*, and diſtinguiſh him eminently from all the other inhabitants of this earth.

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