

In almost every country of the globe individuals are impelled, by considerations of private interest, to habits which tend to repress the natural increase of population; but Tibet is perhaps the only country where these habits are universally encouraged by the government, and where to repress, rather than to encourage population, seems to be a public object.

In the first career of life the Bootea is recommended to distinction by a continuance in a state of celibacy, as, on the contrary, any matrimonial contract proves almost a certain hindrance to his rise in rank, or his advancement to offices of political importance. Population is thus opposed by the two powerful bars of ambition and religion; and the higher orders of men, entirely engrossed by political or ecclesiastical duties, leave to the husbandman and labourer, to those who till the fields and live by their industry, the exclusive charge of propagating the species^a.

Hence religious retirement is frequent^b, and the number of monasteries and nunneries is considerable. The strictest laws exist to prevent a woman from accidentally passing a night within the limits of the one, or a man within those of the other; and a regulation is framed, completely to obviate abuse, and establish respect towards the sacred orders of both sexes.

The nation is divided into two distinct and separate classes, those who carry on the business of the world, and those who hold intercourse with heaven. No interference of the laity ever interrupts the regulated duties of the clergy. The latter, by mutual compact, take charge of all spiritual concerns; and the former, by their labours, enrich and populate the state^c.

But, even among the laity, the business of population goes on very coldly. All the brothers of a family, without any restriction of age or of numbers, associate their fortunes with one female, who is

^a Turner's Embassy, part ii. c. i. p. 172.

^b Ibid.

^c Id. c. viii. p. 312.

chosen

chosen by the eldest, and considered as the mistress of the house; and whatever may be the profits of their several pursuits, the result flows into the common store^a.

The number of husbands is not, apparently, defined or restricted within any limits. It sometimes happens that in a small family there is but one male; and the number, Mr. Turner says, may seldom exceed that which a native of rank at Teshoo Loomboo pointed out to him in a family resident in the neighbourhood, in which five brothers were then living together very happily with one female under the same connubial compact. Nor is this sort of league confined to the lower ranks of people alone, it is found also frequently in the most opulent families^b.

It is evident that this custom, combined with the celibacy of such a numerous body of ecclesiastics, must operate in the most powerful manner as a preventive check to population. Yet notwithstanding this excessive check, it would appear, from Mr. Turner's account of the natural sterility of the soil, that the population is kept up to the level of the means of subsistence, and this seems to be confirmed by the number of beggars in Teshoo Loomboo. On these beggars, and the charity which feeds them, Mr. Turner's remark, though common, is yet so just and important, that it cannot be too often repeated.

"Thus I unexpectedly discovered," he says, "where I had constantly seen the round of life moving in a tranquil regular routine, a mass of indigence and idleness of which I had no idea. But yet it by no means surprised me, when I considered that wherever indiscriminate charity exists, it will never want objects on which to exercise its bounty, but will always attract expectants more numerous than it has the means to gratify. No human being can suffer want at Teshoo Loomboo. It is on this humane disposition that a multitude even of Musselmans, of a frame

^a Turner's Embassy, part ii. c. x. p. 348. 350.

^b Id. p. 349.

“ probably the largest and most robust in the world, place their reliance for the mere maintenance of a feeble life; and besides these, I am informed, that no less than three hundred Hindoos, Goscins, and Sunniaffes, are daily fed at this place by the Lama’s bounty*.”

* Turner’s Embassy, part ii. c. ix. p. 330.

CHAP. XII.

Of the Checks to Population in China and Japan.

THE account which has lately been given of the population of China is so extraordinary, as to startle the faith of many readers, and tempt them to suppose, either that some accidental error must have crept into the calculations from an ignorance of the language, or that the mandarin who gave Sir George Staunton the information, must have been prompted by a national pride, which is common every where, but is particularly remarkable in China, to exaggerate the power and resources of his country. It must be allowed, that neither of these circumstances is very improbable; at the same time it will be found, that the statement of Sir George Staunton, does not very essentially differ from other accounts of good authority; and so far from involving any contradiction, is rendered probable, by a reference to those descriptions of the fertility of China in which all the writers who have visited the country agree.

According to Duhalde, in the poll made at the beginning of the reign of Kang-hi, there were found 11,052,372 families, and 59,788,364 men able to bear arms; and yet, neither the princes, nor the officers of the court, nor the mandarins, nor the soldiers who had served and been discharged; nor the literati, the licentiates, the doctors, the bonzas, nor young persons under twenty years of age; nor the great multitudes living either on the sea, or on rivers in barks, are comprehended in this number*.

* Duhalde’s Hist. of China, 2 vols. folio, 1738. vol. i. p. 244.

The proportion which the number of men of a military age, bears to the whole population of any country, is generally estimated as 1 to 4. If we multiply 59,788,364 by 4, the result will be 239,153,456; but in the general calculations on this subject, a youth is considered as capable of bearing arms before he is twenty. We ought therefore to have multiplied by a higher number. The exceptions to the poll seem to include almost all the superior classes of society, and a very great number among the lower. When all these circumstances are taken into consideration, the whole population, according to Duhalde, will not appear to fall very short of the 333,000,000 mentioned by Sir George Staunton^a.

The small number of families, in proportion to the number of persons able to bear arms, which is a striking part of this statement of Duhalde, is accounted for by a custom noticed by Sir George Staunton as general in China. In the inclosure belonging to one dwelling, he observes, that a whole family of three generations, with all their respective wives and children, will frequently be found. One small room is made to serve for the individuals of each family, sleeping in different beds, divided only by mats hanging from the ceiling. One common room is used for eating^b. In China there is, besides, a prodigious number of slaves^c, who will, of course, be reckoned as part of the families to which they belong. These two circumstances may perhaps be sufficient to account for what at first appears to be a contradiction in the statement.

To account for this population, it will not be necessary to recur to the supposition of Montesquieu, that the climate of China is in any peculiar manner favourable to the production of children, and that the women are more prolific than in any other part of the world^d. The causes which have principally contributed to produce this effect, appear to be the following:

^a Embassy to China, vol. ii. Appen. p. 615. 4to.

^b Id. p. 155.

^c Duhalde's China, vol. i. p. 278.

^d Esprit des Loix, liv. viii. c. xxi.

First,

First, the excellence of the natural soil, and its advantageous position in the warmest parts of the temperate zone; a situation the most favourable to the productions of the earth. Duhalde has a long chapter on the plenty which reigns in China, in which he observes, that almost all that other kingdoms afford, may be found in China; but that China produces an infinite number of things which are to be found no where else. This plenty, he says, may be attributed as well to the depth of the soil, as to the painful industry of its inhabitants, and the great number of lakes, rivers, brooks, and canals, wherewith the country is watered^a.

Secondly, The very great encouragement that from the beginning of the monarchy has been given to agriculture, which has directed the labours of the people to the production of the greatest possible quantity of human subsistence. Duhalde says, that what makes these people undergo such incredible fatigues in cultivating the earth, is not barely their private interest, but rather the veneration paid to agriculture, and the esteem which the emperors themselves have always had for it, from the commencement of the monarchy. One emperor of the highest reputation was taken from the plough to sit on the throne. Another found out the art of draining water from several low countries, which were, till then, covered with it, of conveying it in canals to the sea, and of using these canals to render the soil fruitful^b. He besides wrote several books on the manner of cultivating land, by dunging, tilling, and watering it. Many other emperors expressed their zeal for this art, and made laws to promote it; but none raised its esteem to a higher pitch than Ven-ti, who reigned 179 years before Christ. This prince, perceiving that his country was ruined by wars, resolved to engage his subjects to cultivate their lands, by the example of ploughing with his own hands the land belonging to his palace, which obliged all the ministers and great men of his court to do the same^c.

^a Duhalde's China, vol. i. p. 314.

^b Id. p. 274.

^c Id. p. 275.

U 2

A great

A great festival, of which this is thought to be the origin, is solemnized every year in all the cities of China on the day that the sun enters the fifteenth degree of Aquarius, which the Chinese consider as the beginning of their spring. The emperor goes himself in a solemn manner to plough a few ridges of land, in order to animate the husbandman by his own example; and the mandarins of every city perform the same ceremony^a. Princes of the blood, and other illustrious persons, hold the plough after the emperor, and the ceremony is preceded by the spring sacrifice which the emperor, as chief pontiff, offers to Shang-ti to procure plenty in favour of his people.

The reigning emperor, in the time of Duhalde, celebrated this festival with extraordinary solemnity, and in other respects shewed an uncommon regard for husbandmen. To encourage them in their labours, he ordered the governors of all the cities to send him notice every year of the person in this profession, in their respective districts, who was most remarkable for his application to agriculture, for unblemished reputation, for preserving union in his own family, and peace with his neighbours, and for his frugality and aversion to all extravagance^b. The mandarins in their different provinces encourage with honours the vigilant cultivator, and stigmatize with disgrace the man whose lands are neglected^c.

In a country, in which the whole of the government is of the patriarchal kind, and the emperor is venerated as the father of his people, and the fountain of instruction, it is natural to suppose, that these high honours paid to agriculture should have a powerful effect. In the gradations of rank, they have raised the husbandman above the merchant or mechanic^d, and the great object of ambition among the lower classes, is, in consequence, to become possessed of a small portion of land. The number of manufacturers bears but a very inconsiderable proportion to that of husbandmen in China^e; and the

^a Duhalde's China, vol. i. p. 275.

^b Id. p. 276.

^c Lettres Edif. tom. xix. p. 132.

^d Duhalde's China, vol. i. p. 272.

^e Embassy to China, Staunton, vol. ii. p. 544.

whole

whole surface of the empire is, with trifling exceptions, dedicated to the production of food for man alone. There is no meadow, and very little pasture; neither are the fields cultivated in oats, beans, or turnips, for the support of cattle of any kind. Little land is taken up for roads, which are few and narrow, the chief communication being by water. There are no commons, or lands suffered to lie waste by the neglect, or the caprice, or for the sport, of great proprietors. No arable land lies fallow. The soil, under a hot and fertilizing sun, yields annually, in most instances, double crops, in consequence of adapting the culture to the soil, and of supplying its defects by mixture with other earths, by manure, by irrigation, and by careful and judicious industry of every kind. The labour of man is little diverted from that industry, to minister to the luxuries of the opulent and powerful, or in employments of no real use. Even the soldiers of the Chinese army, except during the short intervals of the guards which they are called upon to mount, or the exercises, or other other occasional services, which they perform, are mostly employed in agriculture. The quantity of subsistence is increased also by converting more species of animals and vegetables to that purpose, than is usual in other countries^a.

This account, which is given by Sir George Staunton, is confirmed by Duhalde, and the other Jesuits, who agree in describing the persevering industry of the Chinese, in manuring, cultivating, and watering their lands, and their success in producing a prodigious quantity of human subsistence^b. The effect of such a system of agriculture on population must be obvious.

Lastly, The extraordinary encouragements that have been given to marriage, which have caused the immense produce of the country to be divided into very small shares, and have consequently rendered

^a Embassy to China, Staunton, vol. ii. p. 545.

^b Duhalde, chapter on agriculture, vol. i. p. 272. chapter on plenty, p. 314.

China

China more populous in proportion to its means of subsistence, than perhaps any other country in the world.

The Chinese acknowledge two ends in marriage^a; the first is, that of perpetuating the sacrifices in the temple of their fathers; and the second, the multiplication of the species. Duhalde says, that the veneration and submission of children to parents, which is the grand principle of their political government, continues even after death, and that the same duties are paid to them as if they were living. In consequence of these maxims, a father feels some sort of dishonour, and is not easy in his mind, if he do not marry off all his children; and an elder brother, though he inherit nothing from his father, must bring up the younger children, and marry them, lest the family should become extinct, and the ancestors be deprived of the honours and duties they are entitled to from their descendants^b.

Sir George Staunton observes, that whatever is strongly recommended, and generally practised, is at length considered as a kind of religious duty, and that the marriage union, as such, takes place in China, wherever there is the least prospect of subsistence for a future family. This prospect, however, is not always realized, and the children are then abandoned by the wretched authors of their being^c; but even this permission given to parents thus to expose their offspring, tends undoubtedly to facilitate marriage, and encourage population. Contemplating this extreme resource beforehand, less fears are entertained of entering into the married state, and the parental feelings will always step forwards to prevent a recurrence to it, except under the most dire necessity. Marriage with the poor is, besides, a measure of prudence, because the children, particularly the sons, are bound to maintain their parents^d.

The effect of these encouragements to marriage among the rich, is to subdivide property, which has in itself a strong tendency to pro-

^a Lettres Edif. et Curieuses, tom. xxiii. p. 448.

^b Duhalde's China, vol. i. p. 303. ^c Embassy to China, vol. ii. p. 157. ^d Ibid.

mote population. In China, there is less inequality in the fortunes than in the conditions of men. Property in land has been divided into very moderate parcels, by the successive distribution of the possessions of every father equally among his sons. It would rarely happen that there was but one son to enjoy the whole property of his deceased parents; and, from the general prevalence of early marriages, this property would not often be increased by collateral succession^a. These causes constantly tend to level wealth, and few succeed to such an accumulation of it, as to render them independent of any efforts of their own for its increase. It is a common remark among the Chinese, that fortunes seldom continue considerable in the same family beyond the third generation^b.

The effect of the encouragements to marriage on the poor, is to keep the reward of labour as low as possible, and consequently to press them down to the most abject state of poverty. Sir George Staunton observes, that the price of labour is generally found to bear as small a proportion every where to the rate demanded for provisions as the common people can suffer; and that notwithstanding the advantage of living together in large families, like soldiers in a mess, and the exercise of the greatest economy in the management of these messes, they are reduced to the use of vegetable food, with a very rare and scanty relish of any animal substance^c.

Duhalde, after describing the painful industry of the Chinese, and the shifts and contrivances, unknown in other countries, to which they have recourse in order to gain a subsistence, says, "yet it must be owned, that notwithstanding the great sobriety and industry of the inhabitants of China, the prodigious number of them occasions a great deal of misery. There are some so poor, that being unable to supply their children with common necessaries, they expose them in the streets."****" In the great cities, such as Peking and Canton, this shocking sight is very common^d."

^a Embassy to China, Staunton, vol. ii. p. 151.

^b Id. p. 152.

^c Id. p. 156.

^d Duhalde's China, vol. i. p. 277.

The Jesuit Premare, writing to a friend of the same society, says, "I will tell you a fact, which may appear to be a paradox^a, but is nevertheless strictly true. It is, that the richest and most flourishing empire of the world, is, notwithstanding, in one sense, the poorest and the most miserable of all. The country, however extensive and fertile it may be, is not sufficient to support its inhabitants. Four times as much territory would be necessary to place them at their ease. In Canton alone, there is, without exaggeration, more than a million of souls, and in a town three or four leagues distant, a still greater number. Who then can count the inhabitants of this province? But what is this to the whole empire, which contains fifteen great provinces all equally peopled. To how many millions would such a calculation amount. A third part of this infinite population would hardly find sufficient rice to support itself properly.

"It is well known that extreme misery impels people to the most dreadful excesses. A spectator in China, who examines things closely, will not be surprised that mothers destroy, or expose, many of their children; that parents sell their daughters for a trifle; that the people should be interested; and that there should be such a number of robbers. The surprise is, that nothing still more dreadful should happen, and that, in the times of famines, which are here but too frequent, millions of people should perish with hunger, without having recourse to those dreadful extremities, of which we read examples in the histories of Europe.

"It cannot be said in China, as in Europe, that the poor are idle, and might gain a subsistence if they would work. The labours and efforts of these poor people are beyond conception. A Chinese will pass whole days in digging the earth, sometimes up to his knees in water, and in the evening is happy to eat a little

^a Lettres Edif. et Curieuses, tom. xvi. p. 394.

" spoonful

" spoonful of rice, and to drink the insipid water in which it was boiled. This is all that they have in general^a."

A great part of this account is repeated in Duhalde, and, even allowing for some exaggeration, it shews, in a strong point of view, to what degree population has been forced in China, and the wretchedness which has been the consequence of it. The population which has arisen naturally from the fertility of the soil, and the encouragements to agriculture, may be considered as genuine and desirable; but all that has been added by the encouragements to marriage, has not only been an addition of so much pure misery in itself, but has completely interrupted the happiness which the rest might have enjoyed.

The territory of China is estimated at about eight times the territory of France^b. Taking the population of France only at 26 millions, eight times that number will give 208,000,000; and when the three powerful causes of population, which have been stated, are considered, it will not appear incredible, that the population of China should be to the population of France, according to their respective superficies, as 333 to 208, or a little more than 3 to 2.

The natural tendency to increase is every where so great, that it will generally be easy to account for the height at which the population is found in any country. The more difficult, as well as the more interesting part of the inquiry, is to trace the immediate causes which stop its further progress. The procreative power would, with as much facility, double, in twenty-five years, the population of China, as that of any of the states of America; but we know that it cannot do this, from the palpable inability of the soil to support such an additional number. What then becomes of this mighty power in China? and what are the kinds of restraint, and the forms of premature death, which keep the population down to the level of the means of subsistence?

^a Lettres Edif. et Curieuses, tom. xvi. p. 394. et seq.

^b Embassy to China, Staunton, vol. ii. p. 546.

X

Notwith-

Notwithstanding the extraordinary encouragements to marriage in China, we should perhaps be led into an error, if we were to suppose that the preventive check to population does not operate. Duhalde says, that the number of bonzas is considerably above a million, of which there are two thousand unmarried, at Pekin, besides three hundred and fifty thousand more in their temples established in different places by the emperor's patents, and that the literary bachelors alone are about ninety thousand ^a.

The poor, though they would probably always marry when the slightest prospect opened to them of being able to support a family, and, from the permission of infanticide, would run great risks in this respect; yet they would undoubtedly be deterred from entering into this state under the certainty of being obliged to expose all their children, or to sell themselves and families as slaves; and from the extreme poverty of the lower classes of people, such a certainty would often present itself. But it is among the slaves themselves, of which, according to Duhalde, the misery in China produces a prodigious multitude, that the preventive check to population principally operates. A man sometimes sells his son, and even himself and wife, at a very moderate price. The common mode is, to mortgage themselves with a condition of redemption, and a great number of men and maid-servants are thus bound in a family ^b. Hume, in speaking of the practice of slavery among the ancients, remarks very justly, that it will generally be cheaper to buy a full grown slave, than to rear up one from a child. This observation appears to be particularly applicable to the Chinese. All writers agree in mentioning the frequency of the dearths in China, and, during these periods, it is probable that slaves would be sold in great numbers for little more than a bare

^a Duhalde's China, vol. i. p. 244.

^b Id. p. 278. La misere et le grand nombre d'habitans de l'empire y causent cette multitude prodigieuse d'esclaves: presque tous les valets, et generalement toutes les filles de service d'une maison sont esclaves. Lettres Edif. tom. xix. p. 145.

main-

maintenance. It could very rarely therefore answer to the master of a family to encourage his slaves to breed; and we may suppose, in consequence, that a great part of the servants in China, as in Europe, remain unmarried.

The check to population arising from a vicious intercourse with the sex, does not appear to be very considerable in China. The women are said to be modest and reserved, and adultery is rare. Concubinage is however generally practised, and, in the large towns, publick women are registered; but their number is not great, being proportioned, according to Sir George Staunton, to the small number of unmarried persons, and of husbands absent from their families ^a.

The positive checks to population from disease, though considerable, do not appear to be so great as might be expected. The climate is in general extremely healthy. One of the missionaries goes so far as to say, that plagues, or epidemic disorders, are not seen once in a century ^b; but this is undoubtedly an error, as they are mentioned by others, as if they were by no means so infrequent. In some instructions to mandarins relating to the burying of the poor, who have in general no regular places of sepulture, it is observed, that, when epidemic diseases prevail, the roads are found covered with bodies sufficient to infect the air to a great distance ^c; and the expression of years of contagion ^d, occurs soon after, in a manner which seems to imply that they are not uncommon. On the first and fifteenth day of every month, the mandarins assemble, and give their people a long discourse, wherein every governor acts the part of a father who instructs his family ^e. In one of these discourses which Duhalde produces, the following passage occurs: "Beware of those years which happen from time to time, when epidemic distempers, joined to a scarcity of corn, make all places desolate. Your duty is then to have com-

^a Embassy to China, vol. ii. p. 157.

^b Lettres Edif. tom. xxii. p. 187.

^c Id. tom. xix. p. 126. ^d Id. p. 127.

^e Duhalde's China, vol. i. p. 254.

X 2

" passion

“passion on your fellow citizens, and assist them with whatever you can spare.”

It is probable that the epidemics, as is usually the case, fall severely on the children. One of the Jesuits, speaking of the number of infants whom the poverty of their parents condemns to death the moment that they are born, writes thus: “There is seldom a year in which the churches at Pekin do not reckon five or six thousand of these children purified by the waters of baptism. This harvest is more or less abundant according to the number of catechists which we can maintain. If we had a sufficient number, their cares need not be confined alone to the dying infants that are exposed. There would be other occasions for them to exercise their zeal, particularly at certain times of the year, when the small-pox, or epidemic disorders, carry off an incredible number of children.” It is indeed almost impossible to suppose, that the extreme indigence of the lower classes of people, should not produce diseases, that would be fatal to a considerable part of those children, whom their parents might attempt to rear in spite of every difficulty.

Respecting the number of infants which are actually exposed, it would be difficult to form the slightest guess; but, if we believe the Chinese writers themselves, the practice must be very common. Attempts have been made at different times by the government to put a stop to it, but always without success. In a book of instructions before alluded to, written by a mandarin celebrated for his humanity and wisdom, a proposal is made for the establishment of a foundling hospital in his district, and an account is given of some ancient establishments of the same kind^c, which appear to have fallen into disuse. In this book, the frequency of the exposure of children, and the dreadful poverty which prompts it, are particularly described. We see, he says, people so poor, that they cannot furnish the nourishment neces-

^a Duhalde's China, vol. i. p. 256.

^b Lettres Edif. tom. xix. p. 100.

^c Id. p. 110.

fary

fary for their own children. It is on this account that they expose so great a number. In the metropolis, in the capitals of the provinces, and in the places of the greatest commerce, their number is the most considerable; but many are found in parts that are less frequented, and even in the country. As the houses in towns are more crowded together, the practice is more obvious; but every where these poor unfortunate infants have need of assistance^a.

In the same work, part of an edict to prevent the drowning of children, runs thus: “When the tender offspring just produced, is thrown without pity into the waves, can it be said, that the mother has given, or that the child has received life, when it is lost as soon as it is begun to be enjoyed? The poverty of the parents is the cause of this crime. They have hardly enough to support themselves, much less are they able to pay a nurse, and provide for the expences necessary for the support of their children. This drives them to despair, and not being able to bring themselves to suffer two people to die that one may live, the mother, to preserve the life of her husband, consents to sacrifice her child. It costs much, however, to the parental feelings; but the resolution is ultimately taken, and they think that they are justified in disposing of the life of their child to prolong their own. If they exposed their children in a secret place, the babe might work upon their compassion with its cries. What do they do then? They throw it into the current of the river, that they may lose sight of it immediately, and take from it at once all chance of life.”

Such writings appear to be most authentick documents respecting the general prevalence of infanticide.

Sir George Staunton has stated, from the best information which he could collect, that the number of children exposed annually at Pekin is about two thousand^c; but it is highly probable, that the

^a Lettres Edif. tom. xix. p. 111.

^b Id. p. 124.

^c Embassy to China, vol. ii. p. 159.

number

number varies extremely from year to year, and depends very much upon seasons of plenty or seasons of scarcity. After any great epidemic or destructive famine, the number is probably very small; it is natural that it should increase gradually on the return to a crowded population, and is, without doubt, the greatest, when an unfavourable season takes place, at a period in which the average produce is already insufficient to support the overflowing multitude.

These unfavourable seasons do not appear to be infrequent, and the famines which follow them, are perhaps the most powerful of all the positive checks to the Chinese population; though at some periods, the checks from wars and internal commotions have not been inconsiderable^a. In the annals of the Chinese monarchs, famines are often mentioned^b; and it is not probable that they would find a place among the most important events and revolutions of the empire, if they were not desolating and destructive to a great degree.

One of the Jesuits remarks, that the occasions when the mandarins pretend to shew the greatest compassion for the people are, when they are apprehensive of a failure in the crops, either from drought, from excessive rains, or from some other accident, such as a multitude of locusts, which sometimes overwhelms certain provinces^c. The causes here enumerated, are probably those which principally contribute to the failure of the harvests in China; and the manner in which they are mentioned, seems to shew that they are not uncommon.

Mearns speaks of violent hurricanes, by which whole harvests are dissipated, and a famine follows. From a similar cause, he says, accompanied by excessive drought, a most dreadful dearth prevailed in 1787, throughout all the southern provinces of China, by which an incredible number of people perished. It was no uncommon thing at Canton, to see the famished wretch breathing his last, while

^a Annals of the Chinese Monarchs. Duhalde's China, vol. i. p. 136.

^b Ibid.

^c Lettres Edif. tom. xix. p. 154.

mothers

mothers thought it a duty to destroy their infant children, and the young to give the stroke of fate to the aged, to save them from the agonies of such a dilatory death^a.

The Jesuit Parennin, writing to a member of the Royal Academy of Sciences, says, "another thing that you can scarcely believe, is, that dearths should be so frequent in China^b;" and in the conclusion of his letter he remarks, that if famine did not, from time to time, thin the immense number of inhabitants which China contains, it would be impossible for her to live in peace^c. The causes of these frequent famines, he endeavours to investigate, and begins by observing, very justly, that, in a time of dearth, China can obtain no assistance from her neighbours, and must necessarily draw the whole of her resources from her own provinces^d. He then describes the delays and artifices which often defeat the emperor's intentions to assist from the public granaries those parts of the country which are the most distressed. When a harvest fails in any province, either from excessive drought, or a sudden inundation, the great mandarins have recourse to the public granaries; but often find them empty, owing to the dishonesty of the inferior mandarins, who have the charge of them. Examinations and researches are then made, and an unwillingness prevails to inform the court of such disagreeable intelligence. Memorials are however at length presented. These memorials pass through many hands, and do not reach the emperor till after many days. The great officers of state are then ordered to assemble, and to deliberate on the means of relieving the misery of the people. Declarations, full of expressions of compassion for the people, are in the mean time published throughout the empire. The resolution of the tribunal is at length made known; but numberless other ceremonies delay its execution; while those who are suffering, have the time to die with hunger before the remedy arrives. Those

^a Mearns's Voyage, ch. vii. p. 92. ^b Lettres Edif. et Curieuses, tom. xxii. p. 174.

^c Id. p. 186.

^d Id. p. 175.

who

who do not wait for this last extremity, crawl as well as they can into other districts, where they hope to get support, but leave the greatest part of their number dead on the road^a.

If, when a dearth occurs, the court do not make some attempt to relieve the people, small parties of plunderers soon collect, and their numbers increase by degrees, so as to interrupt the tranquillity of the province. On this account, numerous orders are always given, and movements are continually taking place, to amuse the people, till the famine is over; and as the motives to relieve the people are generally rather reasons of state, than genuine compassion, it is not probable that they should be relieved at the time, and in the manner, that their wants require^b.

The last cause of famine, which is mentioned in this investigation, and on which the writer lays considerable stress, is the very great consumption of grain in making spirits^c; but in stating this as a cause of famine, he has evidently fallen into a very gross error; yet, in the Abbé Grosier's general description of China, this error has been copied, and the cause above mentioned has been considered as one of the grand sources of the evil^d. But, in reality, the whole tendency of this cause is in a contrary direction. The consumption of corn in any other way but that of necessary food, checks the population before it arrives at the utmost limits of subsistence; and as the grain may be withdrawn from this particular use in the time of a scarcity, a public granary is thus opened, richer, probably, than could have been formed by any other means. When such a consumption has been once established, and has become permanent, its effect is exactly as if a piece of land with all the people upon it were removed from the country. The rest of the people would certainly be precisely in the same state as they were before, neither better nor worse in years of average plenty; but in a time of dearth the produce of this

^a Lettres Edif. tom. xxii. p. 180.

^b Id. p. 187.

^c Id. p. 184.

^d Vol. i. b. iv. c. iii. p. 396. 8vo. Eng. tran.

land would be returned to them, without the mouths to help them to eat it. China, without her distilleries, would certainly be more populous, but on a failure of the seasons, would have still less resource than she has at present, and as far as the magnitude of the cause would operate, would in consequence be more subject to famines, and those famines would be more severe.

The state of Japan resembles in so many respects that of China, that a particular consideration of it would lead into too many repetitions. Montesquieu attributes its populousness to the birth of a greater number of females^a; but the principal cause of this populousness is, without doubt, as in China, the persevering industry of the natives, directed, as it has always been, principally to agriculture.

In reading the preface to Thunburgh's account of Japan, it would seem extremely difficult to trace the checks to the population of a country, the inhabitants of which are said to live in such happiness and plenty; but the continuation of his own work contradicts the impression of his preface; and, in the valuable history of Japan by Kæmfer, these checks are sufficiently obvious. In the extracts from two historical chronicles published in Japan, which he produces^b, a very curious account is given of the different mortalities, plagues, famines, bloody wars, and other causes of destruction which have occurred since the commencement of these records. The Japanese are distinguished from the Chinese, in being much more warlike, seditious, dissolute, and ambitious; and it would appear, from Kæmfer's account, that the check to population from infanticide, in China, is balanced by the greater dissoluteness of manners with regard to the sex, and the greater frequency of wars and intestine commotions, which prevail in Japan. With regard to the positive checks to population from disease and famine, the two countries seem to be nearly on a level.

^a Liv. xxiii. c. xii. It is surprising that Montesquieu, who appears sometimes to understand the subject of population, should at other times make such observations as this.

^b Book ii.

C H A P. XIII.

Of the Checks to Population among the Greeks.

IT has been generally allowed, and will not indeed admit of a doubt, that the more equal division of property among the Greeks and Romans, in the early period of their history, and the direction of their industry principally to agriculture, must have tended greatly to encourage population. Agriculture is not only, as Hume states^a, that species of industry, which is chiefly requisite to the subsistence of multitudes, but it is in fact the *sole* species by which multitudes can exist; and all the numerous arts and manufactures of the modern world, by which such numbers appear to be supported, have no tendency whatever to increase population, except as far as they tend to increase the quantity, and to facilitate the distribution, of the products of agriculture.

In countries where, from the operation of particular causes, property in land is divided into very large shares, these arts and manufactures are absolutely necessary to the existence of any considerable population. Without them, modern Europe would be unpeopled. But where property is divided into small shares, the same necessity for them does not appear. The division itself attains immediately one great object, that of distribution; and if the demand for men be constant, to fight the battles, and support the power and dignity of the state, we may easily conceive that this motive, joined to the natural

^a Essay xi. p. 467. 4to. edit.

love

love of a family, might be sufficient to induce each proprietor to cultivate his land to the utmost, in order that it might support the greatest number of descendants.

The division of people into small states, during the early periods of Greek and Roman history, gave additional force to this motive. Where the number of free citizens did not perhaps exceed ten or twenty thousand, each individual would naturally feel the value of his own exertions, and knowing that the state to which he belonged, situated in the midst of envious and watchful rivals, must depend chiefly on its population for its means of defence and safety, would be sensible, that in suffering the lands which were allotted to him to lie idle, he would be deficient in his duty as a citizen. These causes appear to have produced a considerable attention to agriculture without the intervention of the artificial wants of mankind to encourage it. Population followed the products of the earth with more than equal pace; and when the overflowing numbers were not taken off by the drains of war or disease, they found vent in frequent and repeated colonization. The necessity of these frequent colonizations, joined to the smallness of the states, which brought the subject immediately home to every thinking person, could not fail to point out to the legislators and philosophers of these times, the strong tendency of population to increase beyond the means of subsistence; and they did not, like the statesmen and projectors of modern days, overlook the consideration of a question which so deeply affects the happiness and tranquillity of society. However we may justly execrate the barbarous expedients which they adopted to remove the difficulty, we cannot but give them some credit for their penetration in seeing it; and in being fully aware, that, if not considered and obviated, it would be sufficient of itself to destroy their best planned schemes of republican equality and happiness.

The power of colonization is necessarily limited, and after the lapse of some time, it might be extremely difficult, if not impossible, in a country, not particularly well situated for this purpose, to find a

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vacant

vacant spot proper for the settlement of its expatriated citizens. It was necessary, therefore, to consider of other resources besides colonization.

It is probable that the practice of infanticide had prevailed from the earliest ages in Greece. In the parts of America where it was found to exist, it appears to have originated from the extreme difficulty of rearing many children in a savage and wandering life, exposed to frequent famines and perpetual wars. We may easily conceive that it had a similar origin among the ancestors of the Greeks, or the native inhabitants of the country. And when Solon permitted the exposing of children, it is probable that he only gave the sanction of law to a custom already prevalent.

In this permission he had, without doubt, two ends in view. First, that which is most obvious, the prevention of such an excessive population as would cause universal poverty and discontent; and, secondly, that of keeping the population up to the level of what the territory could support, by removing the terrors of too numerous a family and, consequently, the principal obstacle to marriage. From the effect of this practice in China, we have reason to think that it is better calculated to attain the latter, than the former purpose. But if the legislator, either did not see this, or if the barbarous habits of the times prompted parents invariably to prefer the murder of their children to poverty, the practice would appear to be very particularly calculated to answer both the ends in view, and to preserve, as completely and as constantly as the nature of the thing would permit, the requisite proportion between the food and the numbers which were to consume it.

On the very great importance of attending to this proportion, and the evils that must necessarily result, of weakness on the one hand, or of poverty on the other, from the deficiency or the excess of population, the Greek political writers strongly insist; and propose in consequence various modes of maintaining the relative proportion desired.

Plato,

Plato, in the republic which he considers in his books of laws, limits the number of free citizens, and of habitations, to five thousand and forty; and this number he thinks may be preserved, if the father of every family chuse one out of his sons for his successor to the lot of land which he has possessed, and disposing of his daughters in marriage according to law, distribute his other sons, if he have any, to be adopted by those citizens who are without children. But if the number of children, upon the whole, be either too great or too few, the magistrate is to take the subject particularly into his consideration, and to contrive so, that the same number of five thousand and forty families should still be maintained. There are many modes, he thinks, of effecting this object. Procreation, when it goes on too fast, may be checked, or when it goes on too slow, may be encouraged, by the proper distribution of honours and marks of ignominy, and by the admonitions of the elders to prevent or promote it according to circumstances^a.

In his philosophical republic^b he enters more particularly into this subject, and proposes that the most excellent among the men should be joined in marriage to the most excellent among the women, and the inferior citizens matched with the inferior females; and that the offspring of the first should be brought up; of the others, not. On certain festivals appointed by the laws, the young men and women who are betrothed, are to be assembled, and joined together with solemn ceremonies. But the number of marriages is to be determined by the magistrates, that, taking into consideration the drains from wars, diseases, and other causes, they may preserve, as nearly as possible, such a proportion of citizens as will be neither too numerous nor too few, according to the resources and demands of the state. The children who are thus born from the most excellent of the citizens are to be carried to certain nurses destined to this office, inhabiting a separate part of the city; but those

^a Plato de Legibus, lib. v.

^b Plato de Republicâ, lib. v.

which

which are born from the inferior citizens, and any from the others which are imperfect in their limbs, are to be buried in some obscure and unknown place.

He next proceeds to consider the proper age for marriage, and determines it to be twenty for the woman, and thirty for the man. Beginning at twenty, the woman is to bear children for the state till she is forty, and the man is to fulfil his duty in this respect, from thirty to fifty-five. If a man produce a child into publick either before or after this period, the action is to be considered in the same criminal and profane light as if he had produced one without the nuptial ceremonies, and instigated solely by incontinence. The same rule should hold, if a man, who is of the proper age for procreation, be connected with a woman who is also of the proper age, but without the ceremony of marriage by the magistrate; he is to be considered as having given to the state a spurious, profane, and incestuous offspring. When both sexes have passed the age assigned for presenting children to the state, Plato allows a great latitude of intercourse, but no child is to be brought to light. Should any infant by accident be born alive, it is to be exposed in the same manner as if the parents could not support it^a.

From these passages it is evident, that Plato fully saw the tendency of population to increase beyond the means of subsistence. His expedients for checking it are indeed execrable; but the expedients themselves, and the extent to which they were to be used, shew his conceptions of the magnitude of the difficulty. Contemplating, as he certainly must do in a small republick, a great proportional drain of people by wars; if he could still propose to destroy the children of all the inferior and less perfect citizens; to destroy also all that were born not within the prescribed ages, and with the prescribed forms; to fix the age of marriage late, and after all to regulate the number of these marriages; his experience and his

^a Plato de Repub. lib. v.

reasonings

reasonings must have strongly pointed out to him the great power of the principle of increase, and the necessity of checking it.

Aristotle appears to have seen this necessity still more clearly. He fixes the proper age of marriage at thirty-seven for the men, and eighteen for the women; which must of course condemn a great number of women to celibacy, as there never can be so many men of thirty-seven as there are women of eighteen. Yet though he has fixed the age of marriage for the men at so late a period, he still thinks that there may be too many children, and proposes that the number allowed to each marriage should be regulated; and if any woman be pregnant after she has produced the prescribed number, that an abortion should be procured before the foetus has life.

The period of procreating children for the state, is to cease with the men at fifty-four or fifty-five, because the offspring of old men, as well as of men too young, is imperfect both in body and mind. When both sexes have passed the prescribed age, they are allowed to continue a connexion; but, as in Plato's republick, no child which may be the result, is to be brought to light^a.

In discussing the merits of the republick proposed by Plato in his books of laws, Aristotle is of opinion, that he has by no means been sufficiently attentive to the subject of population; and accuses him of inconsistency, in equalizing property without limiting the number of children. The laws on this subject, Aristotle very justly observes, require to be much more definite and precise in a state where property is equalized than in others. Under ordinary governments an increase of population would only occasion a greater subdivision of landed property; whereas in such a republick the supernumeraries would be altogether destitute, because the lands, being reduced to equal, and as it were elementary, parts, would be incapable of further partition^b.

He

^a Aristotelis Opera. De Repub. lib. vii. c. xvi.

^b De Repub. lib. ii. c. vi. Gillies's Aristotle, vol. ii. b. ii. p. 87. For the convenience of those who may not chuse the trouble of consulting the original, I refer at the

He then remarks, that it is necessary, in all cases, to regulate the proportion of children that they may not exceed the proper number. In doing this, deaths and barrenness are of course to be taken into consideration. But, if, as in the generality of states, every person be left free to have as many children as he pleases, the necessary consequence must be poverty; and poverty is the mother of villany and sedition. On this account Pheidon of Corinth, one of the most ancient writers on the subject of politics, introduced a regulation directly the reverse of Plato's, and limited population without equalizing possessions^a.

Speaking afterwards of Phaleas of Chalcedon, who proposed as a most salutary institution, to equalize wealth among the citizens, he adverts again to Plato's regulations respecting property, and observes, that those who would thus regulate the extent of fortunes, ought not to be ignorant that it is absolutely necessary at the same time to regulate the number of children. For, if children multiply beyond the means of supporting them, the law will necessarily be broken, and families will be suddenly reduced from opulence to beggary; a revolution always dangerous to publick tranquillity^b.

It appears from these passages, that Aristotle clearly saw, that the strong tendency of the human race to increase, unless checked by strict and positive laws, was absolutely fatal to every system founded on equality of property; and there cannot surely be a stronger argument against any system of this kind, than the necessity of such laws as Aristotle himself proposes.

From a remark which he afterwards makes respecting Sparta, it appears still more clearly that he fully understood the principle of population. From the improvidence of the laws relating to succes-

the same time to Gillies's translation; but some passages he has wholly omitted, and of others he has not given the literal sense, his object being a free version.

^a De Repub. lib. ii. c. vii. Gillies's Aristot. vol. ii. b. ii. p. 87.

^b De Repub. lib. ii. c. vii. Gillies's Aristot. vol. ii. b. ii. p. 91.

sion, the landed property in Sparta had been engrossed by a few, and the effect was greatly to diminish the populousness of the country. To remedy this evil, and to supply men for continual wars, the kings preceding Lycurgus had been in the habit of naturalizing strangers. It would have been much better, however, according to Aristotle, to have increased the number of citizens by a nearer equalization of property. But the law relating to children was directly adverse to this improvement. The legislator wishing to have many citizens, had encouraged as much as possible the procreation of children. A man who had three sons was exempted from the night-watch; and he who had four, enjoyed a complete immunity from all publick burdens. But it is evident, Aristotle most justly observes, that the birth of a great number of children, the division of the lands remaining the same, would necessarily cause only an accumulation of poverty^a.

He here seems to see exactly the error, into which many other legislators besides Lycurgus have fallen, and to be fully aware, that, to encourage the birth of children, without providing properly for their support, is to obtain a very small accession to the population of a country at the expence of a very great accession of misery.

The legislator of Crete^b as well as Solon, Pheidon, Plato, and Aristotle, saw the necessity of checking population in order to prevent general poverty; and, as we must suppose that the opinions of such men, and the laws founded upon them, would have considerable influence, it is probable, that the preventive check to increase from late marriages and other causes, operated to a considerable degree among the free citizens of Greece.

For the positive checks to population, we need not look beyond the wars in which these small states were almost continually en-

^a De Repub. lib. ii. c. ix. Gillies's Aristot. vol. ii. b. ii. p. 107.

^b Aristot. de Repub. lib. ii. c. x. Gillies's Aristot. vol. ii. b. ii. p. 113.

gaged, though we have an account of one wasting plague at least, in Athens; and Plato supposes the case of his republick being greatly reduced by disease^a. Their wars were not only almost constant, but extremely bloody. In a small army, the whole of which would probably be engaged in close fight, a much greater number in proportion would be slain, than in the large modern armies, a considerable part of which often remains untouched^b; and as all the free citizens of these republicks were generally employed as soldiers in every war, losses would be felt very severely, and would not appear to be very easily repaired.

^a De legibus, lib. v.

^b Hume, Essay xi. p. 451.

C H A P. XIV.

Of the Checks to Population among the Romans.

THE havock made by war in the smaller states of Italy, particularly during the first struggles of the Romans for power, seems to have been still greater than in Greece. Wallace, in his dissertation on the numbers of mankind, after alluding to the multitudes which fell by the sword in these times, observes, "On an accurate review of the history of the Italians during this period, we shall wonder how such vast multitudes could be raised as were engaged in those continual wars till Italy was entirely subdued." And Livy expresses his utter astonishment that the Volci and Æqui, so often as they were conquered, should have been able to bring fresh armies into the field^b. But these wonders will perhaps be sufficiently accounted for, if we suppose, what seems to be highly probable, that the constant drains from wars had introduced the habit of giving nearly full scope to the power of population, and that a much greater number of youths, in proportion to the whole people, were yearly rising into manhood, and becoming fit to bear arms, than is usual in other states not similarly circumstanced. It was, without doubt, the rapid influx of these supplies, which enabled them, like the ancient Germans, to astonish future historians, by renovating in so extraordinary a manner their defeated and half-destroyed armies.

Yet there is reason to believe, that the practice of infanticide pre-

^a Dissertation, p. 62. 8vo. 1763, Edinburgh.

^b Lib. vi. c. xii.

vailed in Italy as well as in Greece, from the earliest times. A law of Romulus forbade the exposing of children before they were three years old^a, which implies, that the custom of exposing them as soon as they were born had before prevailed. But this practice was of course never resorted to but when the drains from wars were insufficient to make room for the rising generation; and consequently, though it may be considered as one of the positive checks to the full power of increase, yet, in the actual state of things, it certainly contributed rather to promote than impede population.

Among the Romans themselves, engaged as they were in incessant wars, from the beginning of their republic to the end of it, many of which were dreadfully destructive, the positive check to population from this cause alone, must have been enormously great. But this cause alone, great as it was, would never have occasioned that want of Roman citizens, under the emperors, which prompted Augustus and Trajan to issue laws for the encouragement of marriage and of children, if other causes still more powerful in depopulation had not concurred.

When the equality of property, which had formerly prevailed in the Roman territory, had been destroyed by degrees, and the land had fallen into the hands of a few great proprietors, the citizens who were by this change successively deprived of the means of supporting themselves, would naturally have no resource to prevent them from starving, but that of selling their labour to the rich, as in modern states; but from this resource they were completely cut off by the prodigious number of slaves, which, increasing by constant influx with the increasing luxury of Rome, filled up every employment both in agriculture and manufactures. Under such circumstances, so far from being astonished that the number of free citizens should decrease, the wonder seems to be, that any should exist besides the proprietors. And, in fact, many could not

^a Dionysius. Halicarn. lib. ii. 151

have

have existed, but for a strange and preposterous custom, which however, perhaps, the strange and unnatural state of the city required, that of distributing vast quantities of corn to the poorer citizens gratis. Two hundred thousand received this distribution in Augustus's time; and it is highly probable that a great part of them had little else to depend upon. It is supposed to have been given to every man of full years; but the quantity was not enough for a family, and too much for an individual^a. It could not therefore enable them to increase; and, from the manner in which Plutarch speaks of the custom of exposing children among the poor^b, there is great reason to believe that many were destroyed in spite of the *jus trium liberorum*. The passage in Tacitus in which, speaking of the Germans, he alludes to this custom in Rome, seems to point to the same conclusion^c. What effect, indeed, could such a law have among a set of people who appear to have been so completely barred out from all the means of acquiring a subsistence, except that of charity, that they would be scarcely able to support themselves, much less a wife and two or three children. If half of the slaves had been sent out of the country, and the people had been employed in agriculture and manufactures, the effect would have been to increase the number of Roman citizens with more certainty and rapidity than ten thousand laws for the encouragement of children.

It is possible that the *jus trium liberorum*, and the other laws of the same tendency, might have been of some little use among the

^a Hume, Essay xi. p. 488.

^b De amore prolis.

^c De moribus Germanorum, 19. How completely the laws relating to the encouragement of marriage and of children were despised, appears from a speech of Minucius Felix in Octavio, cap. 30. "*Vos enim video procreatos filios nunc feris et avibus exponere, nunc adstrangulatos misero mortis genere elidere; sunt quæ in ipsis visceribus medicaminibus epotis originem futuri hominis extinguant, et parricidium faciant antequam pariant.*"

This crime had grown so much into a custom in Rome that even Pliny attempts to excuse it; "*Quoniam aliquarum fecunditas plena liberis tali veniâ indiget.*" Lib. xxix. c. iv.

higher

higher classes of the Roman citizens; and, indeed, from the nature of these laws, consisting as they did principally of privileges, it would appear that they were directed chiefly to this part of society. But vicious habits of every possible kind, preventive of population^a, seem to have been so generally prevalent at this period, that no corrective laws could have any considerable influence. Montesquieu justly observes, that "the corruption of manners had destroyed the office of censor, which had been established itself to destroy the corruption of manners; but when the corruption of manners becomes general, censure has no longer any force^b." Thirty-four years after the passing of the law of Augustus respecting marriage, the Roman knights demanded its repeal. On separating the married and the unmarried, it appeared that the latter considerably exceeded in number the former; a strong proof of the inefficacy of the law^c.

In most countries, vicious habits preventive of population appear to be rather a consequence than a cause of the infrequency of marriage; but in Rome the depravity of morals seems to have been the direct cause which checked the marriage union, at least among the higher classes. It is impossible to read the speech of Metellus Numidicus in his censorship without indignation and disgust. "If it were possible," he says, "entirely to go without wives, we would deliver ourselves at once from this evil; but as the laws of nature have so ordered it, that we can neither live happy with them, nor continue the species without them, we ought to have more regard for our lasting security than for our transient pleasures^d."

Positive laws to encourage marriage and population, enacted on the urgency of the occasion, and not mixed with religion, as in

^a Sed jacet aurato vix ulla puerpera lecto
Tantum artes hujus, tantum medicamina possunt.
Quæ steriles facit, atque homines in ventre necandos
Conducit. Juvenal, sat. vi. 593.

^b Esprit des Loix, liv. xxiii. c. 21.

^c Ibid.

^d Aulus Gellius, lib. i. c. 6.

China

China and some other countries, are seldom calculated to answer the end which they aim at, and therefore generally indicate ignorance in the legislator who proposes them; but the apparent necessity of them almost invariably indicates a very great degree of moral and political depravity in the state; and, in the countries in which they are most strongly insisted on, not only vicious manners will generally be found to prevail, but political institutions extremely unfavourable to industry, and consequently to population.

On this account, I cannot but agree with Wallace^a in thinking that Hume was wrong in his supposition that the Roman world was probably the most populous during the long peace under Trajan and the Antonines^b. We well know that wars do not depopulate much, while industry continues in vigour; and that peace will not increase the number of people when they cannot find the means of subsistence. The renewal of the laws relating to marriage under Trajan indicates the continued prevalence of vicious habits, and of a languishing industry, and seems to be inconsistent with the supposition of a great increase of population.

It might be said, perhaps, that the vast profusion of slaves would more than make up for the want of Roman citizens; but it appears that the labour of these slaves was not sufficiently directed to agriculture to support a very great population. Whatever might be the case with some of the provinces, the decay of agriculture in Italy seems to be generally acknowledged. The pernicious custom of importing great quantities of corn to distribute gratis to the people had given it a blow which it never afterwards recovered. Hume observes, that "when the Roman authors complain that Italy, which formerly exported corn, became dependent on all the provinces for its daily bread, they never ascribe this alteration to the increase of its inhabitants, but to the neglect of tillage and agriculture^c." And in another place he says, "All ancient authors

^a Dissertation, Appendix, p. 247.

^b Essay xi. p. 505.

^c Id. p. 504.

"tell

“ tell us, that there was a perpetual flux of slaves to Italy from the remoter provinces, particularly Syria, Cilicia, Cappadocia, and the Lesser Asia, Thrace, and Egypt; yet the number of people did not increase in Italy; and writers complain of the continual decay of industry and agriculture^a.” It seems but little probable that the peace under Trajan and the Antonines should have given so sudden a turn to the habits of the people as essentially to alter this state of things.

On the condition of slavery it may be observed, that there cannot be a stronger proof of its unfavourableness, to the propagation of the species in the countries where it prevails, than the necessity of this continual influx. This necessity forms at once a complete refutation of the observation of Wallace, that the antient slaves were more serviceable in raising up people than the inferior ranks of men in modern times^b. Though it is undoubtedly true, as he observes, that all our labourers do not marry, and that many of their children die, and become sickly and useless through the poverty and negligence of their parents^c; yet notwithstanding these obstacles to increase, there is, perhaps, scarcely an instance to be produced, where the lower classes of society, in any country, if free, do not raise up people, fully equal to the demand for their labour.

To account for the checks to population which are peculiar to a state of slavery, and which render a constant recruit of numbers necessary, we must adopt the comparison of slaves to cattle, which Wallace and Hume have made; Wallace, to shew that it would be the interest of masters to take care of their slaves and rear up their offspring^d; and Hume, to prove that it would more frequently be the interest of the master to prevent than to encourage their breeding^e. If Wallace's observation had been just, it is not to be doubted that the slaves would have kept up their own numbers with ease by procrea-

^a Hume, Essay xi. p. 433.

^b Dissert. on the numbers of mankind, p. 91.

^c Id. p. 88.

^d Id. p. 89.

^e Hume, Essay xi. p. 433.

tion; and as it is acknowledged that they did not do this, the truth of Hume's observation is clearly evinced. “ To rear a child in London till he could be serviceable, would cost much dearer, than to buy one of the same age from Scotland or Ireland, where he had been raised in a cottage, covered with rags, and fed on oatmeal and potatoes. Those who had slaves, therefore, in all the richer and more populous countries, would discourage the pregnancy of the females, and either prevent or destroy the birth^a.” It is acknowledged by Wallace, that the male slaves greatly exceeded in number the females^b, which must necessarily be an additional obstacle to their increase. It would appear, therefore, that the preventive check to population, must have operated with very great force among the Greek and Roman slaves; and as they were often ill treated, fed perhaps scantily, and sometimes great numbers of them confined together in close and unwholesome ergastula, or dungeons^c, it is probable that the positive checks to population from disease, were also severe, and that when epidemics prevailed they would be most destructive in this part of the society.

The unfavourableness of slavery to the propagation of the species in the country where it prevails, is not, however, decisive of the question respecting the absolute population of such a country, or, the greater question, respecting the populousness of antient and modern nations. We know that some countries could afford a great and constant supply of slaves, without being in the smallest degree depopulated themselves; and if these supplies were poured in, as they probably would be, exactly in proportion to the demand for labour in the nation which received them, the question respecting the populousness of this nation, would rest precisely on the same grounds as in modern states, and depend upon the number of people which it could employ and support. Whether the practice of domestick slavery, therefore,

^a Hume, Essay xi. p. 433.

^b Appendix to Dissertation, p. 182.

^c Hume, Essay, xi. p. 430.

prevail or not, it may be laid down as a position not to be controverted, that, taking a sufficient extent of territory to include within it exportation and importation, and allowing some variation for the prevalence of luxury, or of frugal habits, that the population of these countries will always be in proportion to the food which the earth is made to produce. And no cause, physical or moral, unless it operate in an excessive and unusual manner^a, can have any considerable and permanent effect on the population, except in as far as it influences the production and distribution of the means of subsistence.

In the controversy concerning the populousness of antient and modern nations, this point has not been sufficiently attended to, and physical and moral causes have been brought forward on both sides, from which no just inference in favour of either party could be drawn. It seems to have escaped the attention of both writers, that the more productive and populous a country is, in its actual state, the less probably will be its power of obtaining a further increase of produce; and consequently the more checks must necessarily be called into action to keep the population down to the level of this stationary, or slowly-increasing produce. From finding such checks, therefore, in antient or modern nations, no inference can be drawn against the absolute populousness of either. On this account, the prevalence of the small-pox, and of other disorders unknown to the antients, can by no means be considered as an argument against the populousness of modern nations, though to these physical causes, both Hume^b and Wallace^c allow considerable weight.

^a The extreme infalubrity of Batavia, and perhaps the plague in some countries, may be considered as physical causes operating in an excessive degree. The extreme and unusual attachment of the Romans to a vicious celibacy, and the promiscuous intercourse in Otaheite, may be considered as moral causes of the same nature. Such instances may perhaps form exceptions to the general observation.

^b Essay xi. p. 425.

^c Dissertation, p. 80.

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In the moral causes which they have brought forward, they have fallen into a similar error. Wallace introduces the positive encouragements to marriage among the antients, as one of the principal causes of the superior populousness of the antient world^a; but the necessity of positive laws to encourage marriage, certainly rather indicates a want than an abundance of people; and in the instance of Sparta, to which he particularly refers, it appears from the passage in Aristotle, mentioned in the last chapter, that the laws to encourage marriage were instituted for the express purpose of remedying a marked deficiency of people. In a country with a crowded and overflowing population, a legislator would never think of making express laws to encourage marriage and the procreation of children. Other arguments of Wallace will be found upon examination to be almost equally ineffectual to his purpose.

Some of the causes which Hume produces, are in the same manner unsatisfactory, and rather make against the inference which he has in view than for it. The number of footmen, housemaids, and other persons remaining unmarried in modern states, he allows to be an argument against their populousness^b. But the contrary inference of the two, appears to be the more probable. When the difficulties attending the rearing of a family are very great, and consequently, many persons of both sexes remain single, we may naturally enough infer that population is stationary, but by no means that it is not absolutely great; because the difficulty of rearing a family may arise from the very circumstance of a great absolute population, and the consequent fullness of all the channels to a livelihood; though the same difficulty may undoubtedly exist in a thinly-peopled country, which is yet stationary in its population. The number of unmarried persons in proportion to the whole number, may form some criterion by which we can judge whether population be increasing, stationary, or decreasing; but will not enable us to determine any thing respecting

^a Dissertation, p. 93.

^b Essay xi.

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absolute

absolute populousness. Yet even in this criterion, we are liable to be deceived. In some of the southern countries early marriages are general, and very few women remain in a state of celibacy, yet the people not only do not increase, but the actual number is perhaps small. In this case the removal of the preventive check is made up by the excessive force of the positive check. The sum of all the positive and preventive checks taken together, forms undoubtedly the immediate cause which represses population; but we never can expect to obtain and estimate accurately this sum in any country; and we can certainly draw no safe conclusion from the contemplation of two or three of these checks taken by themselves, because it so frequently happens, that the excess of one check is balanced by the defect of some other. Causes which affect the number of births or deaths, may, or may not, affect the average population, according to circumstances; but causes which affect the production and distribution of the means of subsistence must necessarily affect population; and it is therefore only on these causes, besides actual enumerations, on which we can with any certainty rely.

All the checks to population which have been hitherto considered in the course of this review of human society, are clearly resolvable into moral restraint, vice, and misery.

Of moral restraint, though it might be rash to affirm that it has not had some share in repressing the natural power of population, yet it must be allowed to have operated very feebly indeed, compared to the others. Of the preventive check, considered generally, and without reference to its producing vice, though its effect appears to have been very considerable in the later periods of Roman History, and in some few other countries; yet, upon the whole, its operation seems to have been inferior to the positive checks. A large portion of the procreative power appears to have been called into action, the redundancy from which was checked by violent causes. Among these, war is the most prominent and striking feature; and after this,
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may be ranked famines and violent diseases. In most of the countries considered, the population seems to have been seldom measured accurately according to the average and permanent means of subsistence, but generally to have vibrated between the two extremes, and consequently the oscillations between want and plenty, are strongly marked, as we should naturally expect among less civilized nations.

ESSAY, &c.

BOOK II.

OF THE CHECKS TO POPULATION IN THE DIFFERENT STATES OF
MODERN EUROPE.

CHAP. I.

Of the Checks to Population in Norway.

IN reviewing the states of modern Europe, we shall be assisted in our inquiries by registers of births, deaths, and marriages, which, when they are complete and correct, point out to us with some degree of precision, whether the prevailing checks to population are of the positive, or of the preventive kind. The habits of most European nations, are of course much alike, owing to the similarity of the circumstances in which they are placed; and it is to be expected, therefore, that their tables of mortality should sometimes give the same results. Relying, however, too much upon this occasional coincidence, political calculators have been led into the error of supposing, that there is, generally speaking, an invariable order of mortality

tality in all countries; but it appears, on the contrary, that this order is extremely variable; that it is very different in different places of the same country, and, within certain limits, depends upon circumstances, which it is in the power of man to alter.

Norway, during nearly the whole of the last century, was in a peculiar degree exempt from the drains of people by war. The climate is remarkably free from epidemick sicknesses, and, in common years, the mortality is less than in any other country in Europe, the registers of which are known to be correct^a. The proportion of the annual deaths to the whole population, on an average throughout the whole country, is only as 1 to 48^b. Yet the population of Norway never seems to have increased with great rapidity. It has made a start within the last ten or fifteen years, but, till that period, its progress must have been very slow, as we know that the country was peopled in very early ages, and in 1769 its population was only 723,141^c.

Before we enter upon an examination of its internal economy, we must feel assured, that, as the positive checks to its population have been so small, the preventive checks must have been proportionably great; and we accordingly find from the registers, that the proportion of yearly marriages to the whole population, is as 1 to 130^d, which is a smaller proportion of marriages than appears in the registers of any other country, except Switzerland.

One cause of this small number of marriages is the mode in which the enrolments for the army have been conducted, till within a very few years. Every man in Denmark and Norway born of a farmer or labourer is a soldier^e. Formerly, the commanding officer of the

^a The registers for Russia give a smaller mortality; but it is supposed that they are defective.

^b Thaarup's Statistik der Danischen Monarchie, vol. ii. p. 4.

^c Id. Table ii. p. 5.

^d Id. vol. ii. p. 4.

^e The few particulars which I shall mention relating to Norway, were collected during a summer excursion in that country in the year 1799.

district

district might take these peasants at any age he pleased, and he in general preferred those that were from twenty-five to thirty, to such as were younger. After being taken into the service, a man could not marry without producing a certificate signed by the minister of the parish, that he had substance enough to support a wife and family; and even then, it was further necessary for him to obtain the permission of the officer. The difficulty, and sometimes the expence, attendant on the obtaining of this certificate and permission, generally deterred those who were not in very good circumstances, from thinking of marriage till their service of ten years was expired; and as they might be enrolled at any age under thirty-six, and the officers were apt to take the oldest first, it would often be late in life before they could feel themselves at liberty to settle.

Though the minister of the parish had no legal power to prevent a man from marrying who was not enrolled for service; yet it appears, that custom had in some degree sanctioned a discretionary power of this kind, and the priest often refused to join a couple together, when the parties had no probable means of supporting a family.

Every obstacle, however, of this nature, whether arising from law or custom, has now been entirely removed. A full liberty is given to marry at any age, without leave either of the officer or priest; and in the enrolments for the army, all those of the age of twenty, are taken first, then all those at twenty-two, and so on till the necessary number is completed.

The officers in general disapprove of this change. They say that a young Norwegian has not arrived at his full strength, and does not make a good soldier at twenty. And many are of opinion, that the peasants will now marry too young, and that more children will be born than the country can support.

But, independently of any regulations respecting the military enrolments, the peculiar state of Norway throws very strong obstacles in the way of early marriages. There are no large manufacturing towns to take off the overflowing population of the country; and as

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each village naturally furnishes from itself a supply of hands more than equal to the demand, a change of place in search of work seldom promises any success. Unless, therefore, an opportunity of foreign emigration offer, the Norwegian peasant generally remains in the village in which he was born; and as the vacancies in houses and employments must occur very slowly, owing to the small mortality that takes place, he will often see himself compelled to wait a considerable time, before he can attain a situation which will enable him to rear a family.

The Norway farms have in general a certain number of married labourers employed upon them, in proportion to their size, who are called house-men. They receive from the farmer a house and a quantity of land nearly sufficient to maintain a family; in return for which, they are under the obligation of working for him at a low and fixed price whenever they are called upon. Except in the immediate neighbourhood of the towns, and on the seacoast, the vacancy of a place of this kind, is the only prospect which presents itself of providing for a family. From the small number of people, and the little variety of employment, the subject is brought distinctly within the view of each individual; and he must feel the absolute necessity of repressing his inclinations to marriage, till some such vacancy offer. If, from the plenty of materials, he should be led to build a house himself, it could not be expected that the farmer, if he had a sufficient number of labourers before, should give him an adequate portion of land with it; and though he would, in general, find employment for three or four months in the summer, yet there would be little chance of his earning enough to support a family during the whole year. It is probable, that it was in cases of this kind, where the impatience of the parties prompted them to build, or propose to build, a house themselves, and trust to what they could earn, that the parish priests exercised the discretionary power of refusing to marry.

The young men and women therefore, are obliged to remain with

with the farmers as unmarried servants, till a houseman's place becomes vacant: and of these unmarried servants, there is in every farm, and every gentleman's family, a much greater proportion than the work would seem to require. There is but little division of labour in Norway. Almost all the wants of domestick economy are supplied in each separate household. Not only the common operations of brewing, baking, and washing, are carried on at home, but many families make, or import, their own cheese and butter, kill their own beef and mutton, import their own grocery stores; and the farmers, and country people, in general, spin their own flax and wool, and weave their own linen and woollen clothes. In the largest towns, such as Christiania and Drontheim, there is nothing that can be called a market. It is extremely difficult to get a joint of fresh meat; and a pound of fresh butter is an article not to be purchased, even in the midst of summer. Fairs are held at certain seasons of the year, and stores of all kinds of provisions that will keep, are laid in at these times; and if this care be neglected, great inconveniences are suffered, as scarcely any thing is to be bought retail. Persons who make a temporary residence, in the country, or small merchants not possessed of farms, complain heavily of this inconvenience; and the wives of merchants who have large estates say, that the domestick economy of a Norway family is so extensive and complicated, that the necessary superintendance of it requires their whole attention, and that they can find no time for any thing else.

It is evident that a system of this kind must require a great number of servants. It is said besides, that they are not remarkable for diligence, and that to do the same quantity of work, more are necessary than in other countries. The consequence is, that in every establishment two or three times the number of servants will be found, as in a family, living at the same rate in England; and it is not uncommon for a farmer in the country, who, in his appear-

ance, is not to be distinguished from any of his labourers, to have a household of twenty persons, including his own family.

The means of maintenance to a single man are, therefore, much less confined than to a married man; and under such circumstances, the lower classes of people cannot increase much, till the increase of mercantile stock, or the division and improvement of farms, furnishes a greater quantity of employment for married labourers. In countries more fully peopled this subject is always involved in great obscurity. Each man naturally thinks that he has as good a chance of finding employment as his neighbour, and that if he cannot get it in one place, he shall, in some other. He marries, therefore, and trusts to fortune; and the effect too frequently is, that the redundant population occasioned in this manner is repressed by the positive checks of poverty and disease. In Norway the subject is not involved in the same obscurity. The number of additional families which the increasing demand for labour will support, is more distinctly marked. The population is so small, that, even in the towns, it is difficult to fall into any considerable error on this subject; and in the country, the division and improvement of an estate, and the creation of a greater number of housemen's places, must be a matter of complete notoriety. If a man can obtain one of these places, he marries, and is able to support a family; if he cannot obtain one, he remains single. A redundant population is thus prevented from taking place, instead of being destroyed after it has taken place.

It is not to be doubted, that the general prevalence of the preventive check to population, owing to the state of society which has been described, together with the obstacles thrown in the way of early marriages from the enrolments for the army, have powerfully contributed to place the lower classes of people in Norway in a better situation, than could be expected from the nature of the soil and climate. On the seacoast, where, on

account

account of the hopes of an adequate supply of food, from fishing, the preventive check does not prevail in the same degree, the people are very poor and wretched; and, beyond comparison, in a worse state, than the peasants in the interior of the country.

The greatest part of the soil in Norway is absolutely incapable of bearing corn, and the climate is subject to the most sudden and fatal changes. There are three nights about the end of August which are particularly distinguished by the name of iron nights, on account of their sometimes blasting the promise of the fairest crops. On these occasions, the lower classes of people necessarily suffer; but, as there are scarcely any independent labourers, except the housemen that have been mentioned, who all keep cattle, the hardship of being obliged to mix the inner bark of the pine with their bread, is mitigated, by the stores of cheese, of salt butter, of salt meat, salt fish, and bacon, which they were enabled to lay up for winter provision. The period in which the want of corn presses the most severely, is, generally, about two months before harvest; and at this time the cows, of which the poorest housemen have generally two or three, and many five or six, begin to give milk, which must be a great assistance to the family, particularly to the younger part of it. In the summer of the year 1799, the Norwegians appeared to wear a face of plenty and content, while their neighbours, the Swedes, were absolutely starving: and I particularly remarked, that the sons of housemen, and the farmers boys, were fatter, larger, and had better calves to their legs, than boys of the same age and in similar situations in England.

It is also, without doubt, owing to the prevalence of the preventive check to population, rather than to any peculiar healthiness of the air, that the mortality in Norway is so small. There is nothing in the climate, or the soil, that would lead to the supposition of its being in any extraordinary manner favourable to the general health of the inhabitants; but as in every country the principal mortality takes place among very young children, the smaller number

number of these in Norway, in proportion to the whole population, will naturally occasion a smaller mortality, than in other countries, supposing the climate to be equally healthy.

It may be said, perhaps, and with truth, that one of the principal reasons of the small mortality in Norway, is, that the towns are inconsiderable and few, and that few people are employed in unwholesome manufactories. In some of the agricultural villages in England, where the preventive check to population does not prevail in the same degree, the mortality is as small as in Norway. But it should be recollected, that the calculation, in this case, is for those particular villages alone; whereas in Norway the calculation of 1 in 48 is for the whole country. The redundant population of the villages in England is disposed of by constant emigrations to the towns, and the deaths of a great part of those that are born in the parish do not appear in the registers. But in Norway all the deaths are within the calculation, and it is clear that if more were born than the country could support, a great mortality must take place in some form or other. If the people were not destroyed by disease, they would be destroyed by famine. It is indeed well known that bad and insufficient food will produce disease and death in the purest air and the finest climate. Supposing, therefore, no great foreign emigration, and no extraordinary increase in the resources of the country, nothing but the more extensive prevalence of the preventive check to population in Norway could secure to her a smaller mortality than in other countries, however pure her air may be, or however healthy the employments of her people.

Norway seems to have been antiently divided into large estates or farms, called Gores; and as, according to the law of succession, all the brothers divide the property equally, it is a matter of surprize, and a proof how slowly the population has hitherto increased, that these estates have not been more subdivided. Many of them are indeed now divided into half gores, and quarter gores, and some still lower; but it has in general been the custom, on the death of the

the father, for a commission to value the estate at a low rate, and if the eldest son can pay his brothers' and sisters' shares, according to this valuation, by mortgaging his estate, or otherwise, the whole is awarded to him; and the force of habit, and natural indolence, too frequently prompt him to conduct the farm after the manner of his forefathers, with few or no efforts at improvement.

Another great obstacle to the improvement of farms in Norway, is a law which is called Odel's right, by which, any lineal descendant can repurchase an estate which had been sold out of the family, by paying the original purchase-money. Formerly, collateral as well as lineal descendants had this power, and the time was absolutely unlimited, so that the purchaser could never consider himself as secure from claims. Afterwards, the time was limited to twenty years, and, in 1771, it was still further limited to ten years, and all the collateral branches were excluded. It must, however, be an uninterrupted possession of ten years; for if before the expiration of this term, a person who has a right to claim under the law, give notice to the possessor that he does not forego his claim, though he is not then in a condition to make the purchase, the possessor is obliged to wait six years more before he is perfectly secure. And as, in addition to this, the eldest in the lineal descent may reclaim an estate that has been repurchased by a younger brother, the law, even in its present amended state, must be considered as a very great bar to improvement; and in its former state when the time was unlimited, and the sale of estates in this way was more frequent, it seems as if it must have been a most complete obstacle to the amelioration of farms, and obviously accounts for the very slow increase of the population in Norway for many centuries.

A further difficulty in the way of clearing and cultivating the land, arises from the fears of the great timber merchants respecting the woods. When a farm has been divided among children and

* A daughter's portion is the half of the son's portion.

grandchildren,

grandchildren, as each proprietor has a certain right in the woods, each, in general, endeavours to cut as much as he can; and the timber is thus felled before it is fit, and the woods spoiled. To prevent this, the merchants buy large tracts of woods of the farmers, who enter into a contract, that the farm shall not be any further subdivided or more housemen placed upon it; at least, that if the number of families be increased, they should have no right in the woods. It is said, that the merchants who make these purchases are not very strict, provided the smaller farmers and housemen do not take timber for their houses. The farmers who sell these tracts of wood are obliged by law to reserve to themselves the right of pasturing their cattle, and of cutting timber sufficient for their houses, repairs, and firing.

A piece of ground round a houseman's dwelling cannot be inclosed for cultivation, without an application, first, to the proprietor of the woods, declaring that the spot is not fit for timber, and afterwards to a magistrate of the district, whose leave on this occasion is also necessary, probably for the purpose of ascertaining whether the leave of the proprietor had been duly obtained.

In addition to these obstacles to improved cultivation, which may be considered as artificial, the nature of the country presents an insuperable obstacle to a cultivation and population in any respect proportioned to the surface of the soil. The Norwegians, though not in a nomadic state, are still in a considerable degree in the pastoral state, and depend very much upon their cattle. The high grounds that border on the mountains, are absolutely unfit to bear corn, and the only use to which they can be put, is to pasture cattle upon them for three or four months during the summer. The farmers, accordingly, send all their cattle to these grounds at this time of the year, under the care of a part of their families; and it is here that they make all their butter and cheese for sale, or for their own consumption. The great difficulty is to support their cattle dur-

ing the long winter, and for this purpose, it is necessary that a considerable proportion of the most fertile land in the vallies should be mowed for grass. If too much of it were taken into tillage, the number of cattle must be proportionably diminished, and the greatest part of the higher grounds would become absolutely useless; and it might be a question, in that case, whether the country, upon the whole, would support a greater population.

Notwithstanding, however, all these obstacles, there is a very considerable capacity of improvement in Norway, and of late years it has been called into action. I heard it remarked by a professor at Copenhagen, that the reason why the agriculture of Norway had advanced so slowly, was, that there were no gentlemen farmers who might set examples of improved cultivation, and break the routine of ignorance and prejudice in the conduct of farms, that had been handed down from father to son for successive ages. From what I saw of Norway, I should say that this want is now, in some degree, supplied. Many intelligent merchants and well-informed general officers are at present engaged in farming. In the country round Christiania, very great improvements have taken place in the system of agriculture; and even in the neighbourhood of Drontheim the culture of artificial grasses has been introduced, which, in a country where so much winter feed is necessary for cattle, is a point of the highest importance. Almost every where the cultivation of potatoes has succeeded, and they are growing more and more into general use, though in the distant parts of the country they are not yet relished by the common people.

It has been more the custom of late years, than formerly, to divide farms; and, as the vent for commodities in Norway is not perhaps sufficient to encourage the complete cultivation of large farms, this division of them has probably contributed to the improvement of the land. It seems, indeed, to be universally agreed, among those who are in a situation to be competent judges, that the agriculture of

Norway in general has advanced considerably of late years; and the registers shew that the population has followed with more than equal pace. On an average of ten years, from 1775 to 1784, the proportion of births to deaths was 141 to 100^a. But this seems to have been rather too rapid an increase; as the following year, 1785, was a year of scarcity and sickness, in which the deaths considerably exceeded the births; and for four years afterwards, particularly in 1789, the excess of births was not great. But in the five years from 1789 to 1794, the proportion of births to deaths was nearly 150 to 100^b.

Many of the most thinking and best informed persons express their apprehensions on this subject, and on the probable result of the new regulations respecting the enrolments for the army, and the apparent intention of the court of Denmark to encourage, at all events, the population. No very unfavourable season has occurred in Norway since 1785; but it is feared that, in the event of such a season, the most severe distress might be felt from the increased population.

Norway is, I believe, almost the only country in Europe where a traveller will hear any apprehensions expressed of a redundant population, and where the danger to the happiness of the lower classes of people, from this cause, is, in some degree, seen and understood. This obviously arises from the smallness of the population altogether, and the consequent narrowness of the subject. If our attention were confined to one parish, and there were no power of emigrating from it, the most careless observer could not fail to remark that if all married at twenty, it would be perfectly impossible for the farmers, however carefully they might improve their land, to find employment and food for those that would grow up; but, when a great number of these parishes are added together in a populous

^a Thaarup's Statistik der Danischen Monarchie, vol. ii. p. 4.

^b Id. table i. p. 4.

kingdom,

kingdom, the largeness of the subject, and the power of moving from place to place, obscure and confuse our view. We lose sight of a truth which before appeared completely obvious; and, in a most unaccountable manner, attribute to the aggregate quantity of land a power of supporting people beyond comparison greater than the sum of all its parts.

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CHAP.

CHAP. II.

Of the Checks to Population in Sweden.

SWEDEN is, in many respects, in a state similar to that of Norway. A very large proportion of its population is, in the same manner, employed in agriculture; and in most parts of the country the married labourers who work for the farmers, like the housemen of Norway, have a certain portion of land for their principal maintenance, while the young men and women that are unmarried, live as servants in the farmers' families. This state of things, however, is not so complete and general, as in Norway; and from this cause, added to the greater extent and population of the country, the superior size of the towns, and the greater variety of employment, it has not occasioned, in the same degree, the prevalence of the preventive check to population, and consequently the positive check has operated with more force, or the mortality has been greater.

According to a paper published by M. Wargentin in the *Memoires abrégés de l'Académie Royale des Sciences de Stockholm*^a, the yearly average mortality in all Sweden, for nine years, ending in 1663, was to the population as 1 to 34 $\frac{1}{4}$ ^b. M. Wargentin furnished Dr. Price with a continuance of these tables, and an average of 21 years gives a result of 1 to 34 $\frac{3}{4}$, nearly the same^c. This is undoubtedly a very great mortality, considering the large proportion of the population in Sweden which is employed in agricul-

^a 1 vol. 4to. printed at Paris, 1772.^b P. 27.^c Price's *Observ. on Revers. Paym.* vol. ii. p. 126.

ture.

ture. It appears from some calculations in Cantzlaer's account of Sweden, that the inhabitants of the towns are to the inhabitants of the country only as 1 to 13^a; whereas, in well-peopled countries, the proportion is often as 1 to 3, or above^b. The superior mortality of towns, therefore, could not much affect the general proportion in Sweden.

The average mortality of villages, according to Sufmilch, is 1 in 40^c. In Prussia and Pomerania, which include a number of great and unhealthy towns, and where the inhabitants of the towns are to the inhabitants of the country as 1 to 4, the mortality is less than 1 in 37^d. The mortality in Norway, as has been mentioned before, is 1 in 48, which is in a very extraordinary degree less than in Sweden, though the inhabitants of the towns in Norway bear a greater proportion to the inhabitants of the country than in Sweden^e. The towns in Sweden are indeed larger, and more unhealthy, than in Norway; but there is no reason to think that the country is naturally more unfavourable to the duration of human life. The mountains of Norway are in general not habitable. The only peopled parts of the country are the vallies. Many of these vallies are deep and narrow clefts in the mountains; and the cultivated spots in the bottom, surrounded as they are by almost perpendicular cliffs of a prodigious height^f, which intercept the rays

^a *Memoires pour servir a la connoissance des affaires politiques et économiques du Royaume de Swede*, 4to. 1776, ch. vi. p. 187. This work is considered as very correct in its information, and is in great credit at Stockholm.^b Sufmilch's *Gottliche Ordnung*, vol. i. ch. ii. sect. xxxiv. edit. 1798.^c Sufmilch's *Gottliche Ordnung*, vol. i. ch. ii. sect. xxxv. p. 91. ^d *Id.* vol. iii. p. 60.^e Thaarup's *Statistik der Danischen Monarchie*, vol. ii. tab. ii. p. 5. 1765.^f Some of these vallies are strikingly picturesque. The principal road from Christiania to Drontheim leads, for nearly 180 English miles, through a continued valley of this kind, by the side of a very fine river, which in one part stretches out into the extensive lake Miosen. I am inclined to believe that there is not any river in all Europe, the course of which, affords such a constant succession of beautiful and romantic

rays of the sun for many hours, do not seem as if they could be so healthy, as the more exposed and drier soil of Sweden.

It is difficult, therefore, entirely to account for the mortality of Sweden, without supposing that, the habits of the people, and the continual cry of the government for an increase of subjects, tend to press the population too hard against the limits of subsistence, and, consequently, to produce diseases which are the necessary effect of poverty and bad nourishment; and this, from observation, appears to be really the case.

Sweden does not produce food sufficient for its population. Its annual want in the article of grain, according to a calculation made from the years 1768 and 1772, is 440,000 tuns^a. This quantity, or near it, has in general been imported from foreign countries, besides pork, butter, and cheese, to a considerable amount^b.

The distillation of spirits in Sweden is supposed to consume above 400,000 tuns of grain; and when this distillation has been prohibited by government, a variation in defect appears in the tables of importations^c; but no great variations in excess are observable, to supply the deficiencies in years of scanty harvests, which, it is well known, occur frequently. In years the most abundant, when the distillation has been free, it is asserted, that 388,000 tuns have in general been imported^d. It follows, therefore, that the Swedes consume all the produce of their best years, and nearly 400,000 more; and that, in their worst years, their consumption must be diminished by nearly the whole deficiency in their crops. The mass of the

mantic scenery. It goes under different names in different parts. The verdure in the Norway vallies is peculiarly soft, the foliage of the trees luxuriant, and in summer, no traces appear of a northern climate.

^a Memoires du Royaume de Suede, table xvii. p. 174.

^b Id. c. vi. p. 198.

^c Id. table xlii. p. 418. c. vi. p. 201. I did not find out exactly the measure of the Swedish tun. It is rather less than our sack or half quarter.

^d Memoires du Royaume de Suede, c. vi. p. 201.

people

people appears to be too poor to purchase nearly the same quantity of corn at a very advanced price. There is no adequate encouragement, therefore, to corn merchants to import in great abundance; and the effect of a deficiency of one fourth, or one third, in the crops, is, to oblige the labourer to content himself with nearly three-fourths or two thirds of the corn which he used before, and to supply the rest by the use of any substitutes which necessity, the mother of invention, may suggest. I have said, nearly, because it is difficult to suppose that the importations should not be something greater in years of scarcity than in common years, though no marked differences of this kind appear in the tables published by Cantzlaer. The greatest importation, according to these tables, was in the year 1768, when it amounted to 590,265 tuns of grain^a; but even this greatest importation is only 150,000 tuns above the average wants of the country; and what is this, to supply a deficiency of one fourth or one third of a crop? The whole importation is indeed in this respect trifling.

The population of Sweden, at the time that Cantzlaer wrote, was about two millions and an half^b. He allows four tuns of grain to a man^c. Upon this supposition the annual wants of Sweden would be ten millions of tuns, and four or five hundred thousand would go but a little way in supplying a deficiency of two millions and a half, or three millions; and, if we take only the difference from the average importation, it will appear, that the assistance which the Swedes receive from importation in a year of scarcity is perfectly futile.

The consequence of this state of things is, that the population of Sweden is in a peculiar manner affected by every variation of the seasons; and we cannot be surpris'd at a very curious and instructive remark of M. Wargentini, that the registers of Sweden shew, that the population and the mortality increase or decrease, accord-

^a Memoires du Royaume de Suede, table xlii. p. 418.

^b Id. ch. vi. p. 184.

^c Id. p. 196.

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ing as the harvests are abundant or deficient. From the nine years of which he had given tables, he instances the following.

		Marriages.	Births.	Deaths.
Barren years.	{ 1757	18799	81878	68054
	{ 1758	19584	83299	74370
Abundant years.	{ 1759	23210	85579	62662
	{ 1760	23383	90635	60083 ^a .

Here it appears, that in the year 1760 the births were to the deaths as 15 to 10; but in the year 1758 only as 11 to 10. By referring to the enumerations of the population in 1757 and 1760^b, which M. Wargentin has given, it appears, that the number of marriages in the year 1760, in proportion to the whole population, was as 1 to 101; in the year 1757, only as 1 to about 124. The deaths in 1760, were to the whole population as 1 to 39; in 1757 as 1 to 32, and in 1758 as 1 to 31.

In making some observations on the tables which had been produced, M. Wargentin says, that in the unhealthy years about 1 in 29 have died annually, and in the healthy years 1 in 39; and that, taking a middle term, the average mortality might be considered at 1 in 36^c. But this inference does not appear to be just, as a mean between 29 and 39 would give 34; and indeed the tables which he has himself brought forward, contradict an average mortality of 1 in 36, and prove that it is about 1 in 34^d.

The proportion of yearly marriages to the whole population, appears to be, on an average, nearly as 1 to 112, and to vary between the extremes of 1 to 101, and 1 to 124, according to the temporary prospect of a support for a family. Probably, indeed, it varies between much greater extremes, as the period from which these calculations are made is merely for nine years.

^a Mémoires Abrégés de l'Académie de Stockholm, p. 29.

^b Id. p. 21, 22.

^c Id. p. 29.

In another paper which M. Wargentin published in the same collection, he again remarks, that in Sweden, the years which are the most fruitful in produce, are the most fruitful in children^a.

If accurate observations were made in other countries, it is highly probable that differences of the same kind would appear, though not to the same extent^b. With regard to Sweden, they clearly prove that its population has a very strong tendency to increase; and that it is not only always ready to follow with the greatest alertness any average increase in the means of subsistence, but that it makes a start forwards at every temporary and occasional increase of food, by which means, it is continually going beyond the average increase, and is repressed by the periodical returns of severe want, and the diseases arising from it.

Yet notwithstanding this constant and striking tendency to overflowing numbers, strange to say! the government and the political economists of Sweden, are continually calling out for population, population. Cantzlaer observes, that the government, not having the power of inducing strangers to settle in the country, or of augmenting at pleasure the number of births, has occupied itself since 1748 in every measure which appeared proper to increase the population of the country^c. But suppose, that the government really possessed the power of inducing strangers to settle, or of increasing the number of births at pleasure, what would be the consequence? If the strangers were not such as to introduce a better system of agriculture, they would either be starved themselves, or cause more of the Swedes to be starved; and if the yearly number of births were considerably increased, it appears to me perfectly clear, from the tables of M. Wargentin, that the principal effect would be merely an increase of mor-

^a Mémoires abrégés de l'Acad. de Stockholm, p. 31.

^b This has been confirmed, with regard to England, by the abstracts of parish registers which have lately been published. The years 1795 and 1800, are marked by a diminution of marriages and births, and an increase of deaths.

^c Mémoires du Royaume de Suede, c. vi. p. 188.

tality. The actual population might, perhaps, even be diminished by it, as when epidemics have once been generated by bad nourishment and crowded houses, they do not always stop when they have taken off the redundant population, but take off with it a part, and sometimes a very considerable part, of that which the country might be able properly to support.

In all very northern climates, in which the principal business of agriculture must necessarily be compressed into the small space of a few summer months, it will almost inevitably happen, that during this period a want of hands is felt; but this temporary want should be carefully distinguished from a real and effectual demand for labour, which includes the power of giving employment and support through the whole year, and not merely for two or three months. The population of Sweden in the natural course of its increase, will always be ready fully to answer this effectual demand; and a supply beyond it, whether from strangers or an additional number of births, could only be productive of misery.

It is asserted by Swedish authors, that a given number of men and of days, produces, in Sweden, only a third part of what is produced by the same number of each, in some other countries^a; and heavy accusations are in consequence brought against the national industry. Of the general grounds for such accusations, a stranger cannot be a competent judge; but in the present instance, it appears to me, that more ought to be attributed to the climate and soil, than to an actual want of industry in the natives. For a large portion of the year their exertions are necessarily cramped by the severity of the climate; and during the time when they are able to engage in agricultural operations, the natural indifference of the soil, and the extent of surface required for a given produce, inevitably employ a great proportional quantity of labour. It is well known in England, that a farm of large extent consisting of a poor soil, is worked at a much greater

^a Memoires du Royaume de Suede, (Cantzlaer) ch. vi. p. 191.

expence

expence for the same produce, than a small one of rich land. The natural poverty of the soil in Sweden, generally speaking, cannot be denied.

In a journey up the western side of the country, and afterwards in crossing it from Norway to Stockholm, and thence up the eastern coast to the passage over to Finland, I confess that I saw fewer marks of a want of national industry than I should have expected. As far as I could judge, I very seldom saw any land uncultivated which would have been cultivated in England, and I certainly saw many spots of land in tillage, which never would have been touched with a plough here. These were lands in which, every five or ten yards, there were large stones or rocks, round which the plough must necessarily be turned, or be lifted over them; and the one or the other is generally done according to their size. The plough is very light, and drawn by one horse, and in ploughing among the stumps of the trees when they are low, the general practice is to lift it over them. The man who holds the plough does this very nimbly, with little or no stop to the horse.

Of the value of those lands for tillage, which are at present covered with immense forests, I could be no judge; but both the Swedes and the Norwegians are accused of clearing these woods away too precipitately, and without previously considering what is likely to be the real value of the land when cleared. The consequence is, that, for the sake of one good crop of rye, which may always be obtained from the manure afforded by the ashes of the burnt trees, much growing timber is sometimes spoiled, and the land, perhaps, afterwards, becomes almost entirely useless. After the crop of rye has been obtained, the common practice is to turn cattle in upon the grass, which may accidentally grow up. If the land be naturally good, the feeding of the cattle prevents fresh firs from rising; but if it be bad, the cattle of course cannot remain long in it, and the seeds with which every wind is furcharged, sow the ground again thickly with firs.

On observing many spots of this kind both in Norway and Sweden, I could not help being struck with the idea, that, though for other reasons, it was very little probable, such appearances certainly made it seem possible, that these countries might have been better peopled formerly, than at present; and that lands, which are now covered with forests, might have produced corn a thousand years ago. Wars, plagues, or that greater depopulator than either, a tyrannical government, might have suddenly destroyed, or expelled, the greatest part of the inhabitants, and a neglect of the land for twenty or thirty years in Norway or Sweden, would produce a very strange difference in the face of the country. But this is merely an idea which I could not help mentioning, but which the reader already knows has not had weight enough with me, to make me suppose the fact in any degree probable.

To return to the agriculture of Sweden. Independently of any deficiency in the national industry, there are certainly some circumstances in the political regulations of the country, which tend to impede the natural progress of its cultivation. There are still some burdensome corvées remaining, which the possessors of certain lands are obliged to perform for the domains of the crown^a. The posting of the country is undoubtedly very cheap and convenient to the traveller; but is conducted in a manner to occasion a great waste of labour to the farmer, both in men and horses. It is calculated by the Swedish economists, that the labour which would be saved by the abolition of this system alone, would produce annually 300,000 tons of grain^b. The very great distance of the markets in Sweden, and the very incomplete division of labour which is almost a necessary consequence of it, occasion also a great waste of time and exertion. And, if there be no marked want of diligence and activity among the Swedish peasants, there is certainly a want of knowledge

^a Mémoires du Royaume de Suède, ch. vi. p. 202.

^b Id. p. 204.

in the best modes of regulating the rotation of their crops, and of manuring and improving their lands^a.

If the government were employed in removing these impediments, and in endeavours to encourage and direct the industry of the farmers, and circulate the best information on agricultural subjects, it would do much more for the population of the country, than by the establishment of five hundred foundling hospitals.

According to Cantzlaer, the principal measures in which the government had been engaged for the encouragement of the population, were, the establishment of colleges of medicine, and of lying-in and foundling hospitals^b. The establishment of colleges of medicine, for the cure of the poor, gratis, may in many cases be extremely beneficial, and was so, probably, in the particular circumstances of Sweden; but the example of the hospitals of France, which have the same object, may create a doubt, whether even such establishments are universally to be recommended. Lying-in hospitals, as far as they have an effect, are probably rather prejudicial than otherwise, as, according to the principle on which they are generally conducted, their tendency is certainly to encourage vice. Foundling hospitals, whether they attain their professed and immediate object, or not, are in every view hurtful to the state; but the mode in which they operate, I shall have occasion to discuss more particularly in another chapter.

The Swedish government; however, has not been exclusively employed in measures of this nature. By an edict in 1776, the commerce of grain was rendered completely free throughout the whole interior of the country, and, with regard to the province of Scania, which grows more than its consumption, exportation free of every duty was allowed^c. Till this period, the agriculture of the southern provinces had been checked by the want of vent for their grain, on account of the difficulty of transport, and the absolute pro-

^a Mémoires du Royaume de Suède, ch. vi.

^b Id. p. 188.

^c Id. p. 204.

hibition of selling it to foreigners at any price. The northern provinces are still under some little difficulties in this respect, though, as they never grow a quantity sufficient for their consumption, these difficulties are not so much felt^a. It may be observed, however, in general, that there is no check more fatal to improving cultivation, than any difficulty in the vent of its produce, which prevents the farmer from being able to obtain, in good years, a price for his corn, not much below the general average.

But what perhaps has contributed more than any other cause to the increasing population of Sweden, is the abolition of a law in 1748, which limited the number of persons to each henman, or farm^b. The object of this law appears to have been, to force the children of the proprietors to undertake the clearing and cultivation of fresh lands, by which, it was thought, that the whole country would be sooner improved. But it appeared from experience, that these children being without sufficient funds for such undertakings, were obliged to seek their fortune in some other way, and great numbers, in consequence, are said to have emigrated. A father may now, however, not only divide his landed property into as many shares as he thinks proper; but these divisions are particularly recommended by the government, and, considering the immense size of the Swedish henmans, and the impossibility of their being cultivated completely by one family, such divisions must in every point of view be highly useful.

The population of Sweden in 1751, was 2,229,661^c. In 1799, according to an account which I received in Stockholm from professor Nicander, the successor to M. Wargentin, it was 3,043,731. This is a very considerable addition to the permanent population of the country, which has followed a proportional increase in the produce of the soil, as the imports of corn are not greater than they were

^a Memoires du Royaume de Suede, ch. vi. p. 204.

^b Id. p. 177.

^c Id. p. 184.

formerly,

formerly, and there is no reason to think that the condition of the people is, on an average, worse.

This increase, however, has not gone forwards, without periodical checks, which, if they have not, for the time, entirely stopped its progress, have always retarded the rate of it. How often these checks have recurred during the last 50 years, I am not furnished with sufficient data to be able to say, but I can mention some of them. From the paper of M. Wargentin^a, already quoted in this chapter, it appears, that the years 1757 and 1758, were barren, and comparatively mortal years. If we were to judge from the increased importation of 1768^b, this would also appear to be an unproductive year. According to the additional tables with which M. Wargentin furnished Dr. Price, the years 1771, 1772, and 1773, were particularly mortal^c. The year 1789 must have been very highly so, as, in the accounts which I received from professor Nicander, this year alone materially affected the average proportion of births to deaths for the twenty years ending in 1795. This proportion, including the year 1789, was 100 to 77; but abstracting it, was 100 to 75; which is a great difference for one year to make in an average of twenty. To conclude the catalogue, the year 1799, when I was in Sweden, must have been a very fatal one. In the provinces bordering on Norway, the peasants called it the worst that they had ever remembered. The cattle had all suffered extremely during the winter, from the drought of the preceding year; and, in July, about a month before the harvest, a considerable portion of the people was living upon bread made of the inner bark of the fir, and of dried sorrel, absolutely without any mixture of meal, to make it more palatable and nourishing. The fallow looks, and melancholy countenances of the people, betrayed the unwholesomeness of their nourishment. Many had died, but the

^a Memoires de l'Academie de Stockholm, p. 29.

^b Memoires du Royaume de Suede, table xlii.

^c Price's Observ. on Revers. Pay. vol. ii. p. 125.

full effects of such a diet had not then been felt. They would probably appear afterwards in the form of some epidemick sickness.

The patience with which the lower classes of people in Sweden bear these severe pressures, is perfectly astonishing, and can only arise from their being left entirely to their own resources, and from the belief that they are submitting to the great law of necessity, and not to the caprices of their rulers. Most of the married labourers, as has been before observed, cultivate a small portion of land; and when, from an unfavourable season, their crops fail or their cattle die, they see the cause of their want, and bear it as the visitation of providence. Every man will submit, with becoming patience, to evils which he believes to arise from the general laws of nature; but when the vanity and mistaken benevolence of the government and the higher classes of society, have, by a perpetual interference with the concerns of the lower classes, endeavoured to persuade them, that all the good which they enjoy is conferred upon them by their rulers and rich benefactors, it is very natural that they should attribute all the evil which they suffer to the same sources, and patience, under such circumstances, cannot reasonably be expected. Though to avoid still greater evils, we may be allowed to repress this impatience by force, if it shew itself in overt acts, yet the impatience itself appears to be clearly justified in this case; and those are in a great degree answerable for its consequences, whose conduct has tended evidently to encourage it.

Though the Swedes had supported the severe dearth of 1799 with extraordinary resignation; yet afterwards, on an edict of the government to prohibit the distillation of spirits, it is said that there were considerable commotions in the country. The measure itself was certainly calculated to benefit the people; and the manner in which it was received, affords a curious proof of the different temper with which people bear an evil, arising from the laws of nature, or a privation caused by the edicts of a government.

The sickly periods in Sweden which have retarded the rate of its
↑
increase

increase in population, appear in general to have arisen from the unwholesome nourishment occasioned by severe want. And this want has been caused by unfavourable seasons falling upon a country which was without any reserved store, either in its general exports, or in the liberal division of food to the labourer in common years, and which was therefore peopled fully up to its produce, before the occurrence of the scanty harvest. Such a state of things is a clear proof, that if, as some of the Swedish economists assert, their country ought to have a population of nine or ten millions^a, they have nothing further to do, than to make it produce food sufficient for such a number, and they may rest perfectly assured that they will not want mouths to eat it, without the assistance of lying-in, and foundling hospitals.

Notwithstanding the mortal year of 1789, it appeared from the accounts which I received from professor Nicander, that the general healthiness of the country had increased. The average mortality for the twenty years ending 1795, was 1 in 37, instead of 1 in less than 35, which had been the average of the preceding twenty years. As the rate of increase had not been accelerated in the twenty years ending in 1795, the diminished mortality must have been occasioned by the increased operation of the preventive check. Another calculation which I received from the professor, seemed to confirm this supposition. According to M. Wargentín, as quoted by Susmilch^b, 5 standing marriages produced yearly 1 child; but in the latter period, the proportion of standing marriages to annual births, was as $\frac{5}{15}$, and subtracting illegitimate children, as $\frac{5}{15}$ to 1; a proof, that in the latter period the marriages had not been quite so early and so prolific,

^a Memoires du Royaume de Suede, ch. vi. p. 196.

^b Gottliche Ordnung, vol. i. c. vi. f. 120. p. 231.

CHAP. III.

Of the Checks to Population in Russia.

THE lists of births, deaths, and marriages, in Russia, present such extraordinary results, that it is impossible not to receive them with a considerable degree of suspicion; at the same time, the regular manner in which they have been collected, and their agreement with each other in different years, entitle them to attention.

In a paper presented in 1786, by B. F. Herman, to the academy of Peterburgh, and published in the *Nova Acta Academiae, tom. iv.* a comparison is made of the births, deaths, and marriages, in the different provinces and towns of the empire, and the following proportions are given:

In Peterburgh the births are to the burials, as	13 to 10
In the government of Moscow,	21 — 10
District of Moscow, excepting the town,	21 — 10
Tver,	26 — 10
Novogorod,	20 — 10
Pskovsk,	22 — 10
Refan,	20 — 10
Veronefch,	29 — 10
Vologda,	23 — 10
Kostroma,	20 — 10
Archangel,	13 — 10
Tobolsk,	21 — 10
Town of Tobolsk,	13 — 10
Reval,	11 — 10
Vologda,	12 — 10

Some

Some of these proportions, it will be observed, are extraordinarily high. In Veronefch, for instance, the births are to the deaths, nearly as 3 to 1, which is as great a proportion, I believe, as ever was known in America. The average result, however, of these proportions, has been confirmed by subsequent observations. Mr. Tooke, in his View of the Russian Empire, makes the general proportion of births to burials throughout the whole country, as 225 to 100^a, which is 2 and 1/4 to 1; and this proportion is taken from the lists of 1793^b.

From the number of yearly marriages, and yearly births, M. Herman draws the following conclusions:

In Peterburgh one marriage yields	4 children,
In the government of Moscow, about	3
Tver,	3
Novogorod,	3
Pskovsk,	3
Refan,	3
Veronefch,	4
Vologda,	4
Kostroma,	3
Archangel,	4
Reval,	4
Government of Tobolsk,	4
Town of Tobolsk, from 1768 to 1778,	3
..... from 1779 to 1783,	5
..... in 1783,	6

M. Herman observes, that the fruitfulness of marriages in Russia, does not exceed that of other countries, though the mortality is much less; as appears from the following proportions, drawn from a rough calculation of the number of inhabitants in each government:

In Peterburgh,	1 in 28 dies annually.
In the government of Moscow,	1 — 32

^a Vol. ii. b. iii. p. 162.

^b Id. p. 145.

District of Moscow,	1 in 74 dies annually.
Tver,	1 — 75
Novogorod,	1 — $68\frac{6}{7}$
Pskovsk,	1 — $70\frac{1}{2}$
Refan,	1 — 50
Veronesch,	1 — 79
Vologda,	1 — 65
Kostroma,	1 — 59
Archangel,	1 — $28\frac{1}{2}$
Reval,	1 — 29
Government of Tobolsk,	1 — 44
Town of Tobolsk,	1 — 32
..... in 1783,	1 — $22\frac{1}{4}$

It may be concluded, M. Herman says, that in the greatest number of the Russian provinces, the yearly mortality is 1 in 60^a.

This average number is so high, and some of the proportions in the particular provinces are so extraordinary, that it is almost impossible to believe them accurate. They have been nearly confirmed, however, by subsequent lists, which, according to Mr. Tooke, make the general mortality in all Russia, 1 in 58^b. But Mr. Tooke himself seems to doubt the accuracy of this particular department of the registers; and I have since heard from good authority, that there is reason to believe, that the omissions in the burials are in all the provinces much greater than the omissions in the births, and consequently, that the very great excess of births, and very small mortality, are more apparent than real. It is supposed that many children, particularly in the Ukraine, are privately interred by their fathers without information to the priest. The numerous and repeated levies of recruits take off great numbers whose deaths are not recorded. From the

^a Nova Acta Academiae, tom. iv.

^b View of the Russian Empire, vol. ii. b. iii. p. 148.

frequent

frequent emigrations of whole families to different parts of the empire, and the transportation of malefactors to Siberia, great numbers necessarily die on journies, or in parts where no regular lists are kept; and some omissions are attributed to the neglect of the parish priests who have an interest in recording the births, but not the deaths.

To these reasons I should add, that the population of each province, is probably estimated by the number of boors belonging to each estate in it; but it is well known that a great part of them has leave to reside in the towns. Their births, therefore, appear in the province, but their deaths do not. The apparent mortality of the towns is not proportionably increased by this emigration, because it is estimated according to actual enumeration. The bills of mortality in the towns express correctly the numbers dying out of a certain number known to be actually present in these towns; but the bills of mortality in the provinces, purporting to express the numbers dying out of the estimated population of the province, do really only express the numbers dying out of a much smaller population, because a considerable part of the estimated population is absent.

In Petersburg, it appeared by an enumeration in 1784, that the number of males was 126,827, and of females only 65,619^a. The proportion of males was therefore very nearly double, arising from the numbers who came to the town, to earn their capitation tax, leaving their families in the country, and from the custom among the lords, of retaining a prodigious number of their boors as household servants, in Petersburg and Moscow.

The number of births in proportion to the whole population in Russia, is not different from a common average in other countries, being about 1 in 26^b.

According to the paper of M. Herman, already quoted, the proportion of boys dying within the first year, is, at Petersburg, $\frac{1}{7}$. In

^a Memoire par W. L. Krafft, Nova Acta Academiae, tom. iv.

^b Tooke's View of Russian Empire, vol. ii. b. iii. p. 147.

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the government of Tobolsk $\frac{1}{10}$. In the town of Tobolsk $\frac{1}{5}$. In Vologda $\frac{1}{10}$. In Novogorod $\frac{1}{10}$. In Veronesch $\frac{1}{10}$. In Archangel $\frac{1}{10}$. The very small mortality of infants in some of these provinces, particularly, as the calculation does not seem to be liable to much error, makes the smallness of the general mortality more credible. In Sweden, throughout the whole country, the proportion of infants which dies within the first year, is $\frac{1}{5}$ or more^a.

The proportion of yearly marriages in Russia to the whole population, is, according to M. Herman, in the towns, about 1 in 100, and in the provinces about 1 in 70 or 80. According to Mr. Tooke, in the fifteen governments of which he had lists, the proportion was 1 in 92^b. This is not very different from other countries. In Peterburgh, indeed, the proportion was 1 in 140^c; but this is clearly accounted for, by what has already been said of the extraordinary number of the males in comparison of the females.

The registers for the city of Peterburgh are supposed to be such as can be entirely depended upon; and these tend to prove the general salubrity of the climate. But there is one fact recorded in them, which is directly contrary to what has been observed in all other countries. This is a much greater mortality of female children than of male. In the period from 1781 to 1785, of 1000 boys born, 147 only, died within the first year, but of the same number of girls 310^d. The proportion is as 10 to 21, which is inconceivable, and must indeed have been, in some measure, accidental, as, in the preceding periods, the proportion was only as 10 to 14; but even this is very extraordinary, as it has been generally remarked, that, in every stage of life, except during the period of childbearing, the mortality among females is less than among males. The climate of Sweden does not appear to be very different from that of Russia; and M. War-

^a Memoires Abrégés de l'Academie de Stockholm, p. 28.
Emp. vol. ii. b. iii. p. 146.

^b View of Russ.

^c Memoire par W. L. Krafft, Nova Acta Academiae, tom. iv.

^d Id. tom. iv.

gentin

gentin observes, with respect to the Swedish tables, that it appears from them, that the smaller mortality of females, is not merely owing to a more regular and less laborious life, but is a natural law which operates constantly from infancy to old age^a.

According to M. Krafft^b, the half of all that are born in Peterburgh, live to 25; which shews a degree of healthiness in early life very unusual for so large a town; but after twenty, a mortality, much greater than in any other town in Europe, takes place, which is justly attributed to the immoderate use of brandy^c. The mortality between 10 and 15 is so small, that only 1 in 47 males, and 1 in 29 females, die. From 20 to 25, the mortality is so great, that 1 in 9 males, and 1 in 13 females, die. The tables shew, that this extraordinary mortality is occasioned principally by pleuresies, high fevers, and consumptions. Pleuresies destroy $\frac{1}{5}$, high fevers $\frac{1}{5}$, and consumptions $\frac{1}{5}$, of the whole population. The three together take off $\frac{3}{5}$ of all that die.

The general mortality during the period from 1781 to 1785, was, according to M. Krafft, 1 in 37. In a former period, it has been 1 in 35, and in a subsequent period, when epidemick diseases prevailed, 1 in 29^d. This average mortality is small for a large town; but there is reason to think, from a passage in M. Krafft's memoir^e, that the deaths in the hospitals, the prisons, and in the *maison des Enfants trouvés*, are either entirely omitted, or not given with correctness; and undoubtedly, the insertion of these deaths might make a great difference in the apparent healthiness of the town.

In the *maison des Enfants trouvés* alone, the mortality is prodigious. No regular lists are published, and verbal communications are always liable to some uncertainty. I cannot, therefore, rely upon the information which I collected on the subject; but, from the most

^a Memoires Abrégés de l'Academie de Stockholm, p. 28.

^b Nova Acta Academiae, tom. iv.

^c Tooke's View of the Russian Empire, vol. ii. b. iii. p. 155.

^d Id. p. 151.

^e See a Note in Tooke's View of Russ. Emp. vol. ii. b. iii. p. 150.

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careful

careful inquiries which I could make of the attendants at the house in Peterburgh, I understood that 100 a month was the common average. In the preceding winter, which was the winter of 1788, it had not been uncommon to bury 18 a day. The average number received in the day, is about 10; and though they are all sent into the country to be nursed three days after they have been in the house, yet, as many of them are brought in a dying state, the mortality must necessarily be great. The number said to be received, appears, indeed, almost incredible; but, from what I saw myself, I should be inclined to believe, that both this and the mortality before mentioned, might not be far from the truth. I was at the house about noon, and four children had been just received, one of which was evidently dying, and another did not seem as if it would long survive.

A part of the house is destined to the purpose of a lying-in hospital, where every woman that comes is received, and no questions are asked. The children which are thus born, are brought up by nurses in the house, and are not sent into the country like the others. A mother, if she chuse it, may perform the office of nurse to her own child, in the house, but is not permitted to take it away with her. A child brought to the house, may at any time be reclaimed by its parents, if they can prove themselves able to support it; and all the children are marked and numbered on being received, that they may be known and produced to the parents, when required, who, if they cannot reclaim them, are permitted to visit them.

The country nurses receive only two roubles a month, which, as the current paper rouble is seldom worth more than half a crown, is only about fifteen pence a week; yet, the general expences are said to be 100,000 roubles a month. The regular revenues belonging to the institution are not nearly equal to this sum; but the government takes on itself the management of the whole affair, and consequently bears all the additional expences. As the children are

received without any limit, it is absolutely necessary, that the expences should also be unlimited. It is evident that the most dreadful evils must result from an unlimited reception of children, and only a limited fund to support them. Such institutions, therefore, if managed properly, that is, if the extraordinary mortality do not prevent the rapid accumulation of expence, cannot exist long except under the protection of a very rich government; and even under such protection there must ultimately be a limit.

At six or seven years old the children who have been sent into the country, return to the house, where they are taught all sorts of trades, and manual operations. The common hours of working are, from 6 to 12, and from 2 till 4. The girls leave the house at 18, and the boys at 20 or 21. When the house is too full, some of those which have been sent into the country are not brought back.

The principal mortality, of course, takes place among the infants who are just received, and the children which are brought up in the house; but there is a considerable mortality among those which are returned from the country, and are in the firmest stages of life. I was, in some degree, surpris'd at hearing this, after having been particularly struck with the extraordinary degree of neatness, cleanliness, and sweetness, which appeared to prevail in every department. The house itself had been a palace, and all the rooms were large, airy, and even elegant. I was present while 180 boys were dining. They were all dressed very neatly; the table-cloth was clean, and each had a separate napkin to himself. The provisions appeared to be extremely good, and there was not the smallest disagreeable smell in the room. In the dormitories there was a separate bed for each child; the bedsteads were of iron without tester or curtains, and the coverlids and sheets particularly clean.

This degree of neatness, almost inconceivable in a large institution, was to be attributed principally to the present empress dowager, who interest'd herself in all the details of the management; and, when at Peterburgh, seldom pass'd a week without in-

specting them in person. The mortality which takes place in spite of all these attentions, is a clear proof, that the constitution, in early youth, cannot support confinement and work for 8 hours in the day. The children had all rather a pale and sickly countenance, and if a judgment had been formed of the national beauty from the girls and boys in this establishment, it would have been most unfavourable.

It is evident, that if the deaths belonging to this institution be omitted, the bills of mortality for Petersburg cannot give a representation, in any degree near the truth, of the real state of the city, with respect to healthiness. At the same time, it should be recollected, that some of the observations which attest its healthiness, such as the number dying in a thousand, &c. are not influenced by this circumstance; unless indeed we say, what is perhaps true, that nearly all those who would find any difficulty in rearing their children, send them to the foundling hospital, and the mortality among the children of those who are in easy circumstances, and live in comfortable houses, and airy situations, will of course be much less than a general average taken from all that are born.

The *maison des Enfants trouvés*, at Moscow, is conducted exactly upon the same principles as that at Petersburg; and Mr. Tooke gives an account of the surprising loss of children which it had sustained in twenty years, from the time of its first establishment to the year 1786. On this occasion, he observes, that if we knew precisely the number of those who died immediately after reception, or who brought in with them the germ of dissolution, a small part only of the mortality would probably appear to be fairly attributable to the foundling-hospital; as none would be so unreasonable, as to lay the loss of these certain victims to death to the account of a philanthropical institution, which enriches the country from year to year with an ever-increasing number of healthy, active, and industrious burghers.

* View of the Russian Empire, vol. ii. b. iii. p. 201.

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It appears to me, however, that the greatest part of this premature mortality is clearly to be attributed to these institutions, mis-called philanthropical. If any reliance can be placed on the accounts which are given of the infant mortality in the Russian towns and provinces, it would appear to be unusually small. The greatness of it, therefore, at the foundling hospitals, may justly be laid to the account of institutions which encourage a mother to desert her child, at the very time, when of all others, it stands most in need of her fostering care. The frail tenure by which an infant holds its life, will not allow of a remitted attention, even for a few hours.

The surprising mortality which takes place at these two foundling hospitals of Petersburg and Moscow, which are managed in the best possible manner, as all who have seen them, with one consent, assert, appears to me incontrovertibly to prove, that the nature of these institutions is not calculated to answer the immediate end that they have in view, which I conceive to be, the preservation of a certain number of citizens to the state, which might otherwise, perhaps, perish from poverty or false shame. It is not to be doubted, that if the children received into these hospitals, had been left to the management of their parents, taking the chance of all the difficulties in which they might be involved, a much greater proportion of them would have reached the age of manhood, and have become useful members of the state.

When we look a little deeper into this subject, it will appear, that these institutions not only fail in their immediate object, but by encouraging, in the most marked manner, habits of licentiousness, discourage marriage, and thus weaken the main spring of population. All the well-informed men with whom I conversed on this subject, at Petersburg, agreed invariably, that the institution had produced this effect in a surprising degree. To have a child, was considered as one of the most trifling faults which a girl could commit. An English merchant at Petersburg told me, that a Russian girl, living in his family, under a mistress, who was considered as

very strict, had sent six children to the foundling hospital without the loss of her place.

It should be observed, however, that generally speaking, six children are not common in this kind of intercourse. Where habits of licentiousness prevail, the births are never in the same proportion to the number of people, as in the married state; and therefore the discouragement to marriage, arising from this licentiousness, and the diminished number of births which is the consequence of it, will much more than counterbalance any encouragement to marriage, from the prospect held out to parents of disposing of the children which they cannot support.

Considering the extraordinary mortality which occurs in these institutions, and the habits of licentiousness which they have an evident tendency to create, it may be said, perhaps, with truth, that if a person wished to check population, and were not solicitous about the means, he could not propose a more effectual measure, than the establishment of a sufficient number of foundling hospitals, unlimited in their reception of children. And with regard to the moral feelings of a nation, it is difficult to conceive that they must not be very sensibly impaired by encouraging mothers to desert their offspring, and endeavouring to teach them, that their love for their new-born infants is a prejudice, which it is the interest of their country to eradicate. An occasional child-murder, from false shame, is saved at a very high price, if it can only be done by the sacrifice of some of the best and most useful feelings of the human heart in a great part of the nation.

On the supposition that foundling hospitals attained their proposed end, the state of slavery in Russia would, perhaps, render them more justifiable in that country than in any other; because, every child brought up at the foundling hospitals becomes a free citizen, and in this capacity is likely to be more useful to the state, than if it had merely increased the number of slaves belonging to an individual proprietor. But in countries not similarly circumstanced, the
most

most complete success in institutions of this kind would be a glaring injustice to other parts of the society. The true encouragement to marriage is, the high price of labour, and an increase of employments, which require to be supplied with proper hands; but if the principal part of these employments, apprenticeships, &c. be filled up by foundlings, the demand for labour among the legitimate part of the society must be proportionally diminished, the difficulty of supporting a family be increased, and the best encouragement to marriage removed.

Russia has great natural resources. Its produce is, in its present state, above its consumption, and it wants nothing but greater freedom of industrious exertion, and an adequate vent for its commodities in the interior parts of the country, to occasion an increase of population astonishingly rapid. The principal obstacle to this, is, the vassalage, or rather slavery, of the peasants, and the ignorance and indolence, which almost necessarily accompany such a state. The fortune of a Russian nobleman is measured by the number of boors that he possesses, which in general are saleable, like cattle, and not *adscripti glebæ*. His revenue arises from a capitation tax on all the males. When the boors upon an estate are increasing, new divisions of land are made at certain intervals, and either more is taken into cultivation, or the old shares are subdivided. Each family is awarded such a portion of land as it can properly cultivate, and will enable it to pay the tax. It is evidently the interest of the boor not to improve his lands much, and appear to get considerably more than is necessary to support his family and pay the poll-tax; because the natural consequence will be, that in the next division that takes place, the farm, which he before possessed, will be considered as capable of supporting two families, and he will be deprived of the half of it. The indolent cultivation that such a state of things must produce, is easily conceivable. When a boor is deprived of much of the land which he had before used, he makes complaints of inability to pay
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his tax, and demands permission for himself, or his sons, to go and earn it in the towns. This permission is in general eagerly sought after, and is granted without much difficulty by the seigneurs, in consideration of a small increase of the poll-tax. The consequence is, that the lands in the country are left half cultivated, and the genuine spring of population impaired in its source.

A Russian nobleman at Petersburg, of whom I asked some questions, respecting the management of his estate, told me, that he never troubled himself to inquire whether it was properly cultivated or not, which he seemed to consider as a matter in which he was not in the smallest degree concerned. *Cela m'est egal*, says he, *cela me fait ni bien ni mal*. He gave his boors permission to earn their tax how and where they liked, and as long as he received it, he was satisfied. But it is evident, that, by this kind of conduct, he sacrificed the future population of his estate, and the consequent future increase of his revenues, to considerations of indolence and present convenience.

It is certain, however, that of late years many noblemen have attended more to the improvement and population of their estates, instigated, principally, by the precepts and examples of the empress Catherine, who made the greatest exertions to advance the cultivation of the country. Her immense importations of German settlers, not only contributed to people her state with free citizens, instead of slaves, but what was perhaps of still more importance, to set an example of industry, and of modes of directing that industry, totally unknown before to the Russian peasants.

These exertions have been crowned, upon the whole, with great success; and it is not to be doubted, that, during the reign of the late empress, and since, a very considerable increase of cultivation and of population has been going forward, in almost every part of the Russian empire.

In the year 1763, an enumeration of the people, estimated by the poll-tax, gave a population of 14,726,696; and the same kind of enumeration in 1783, gave a population of 25,677,000, which, if correct, shews a very extraordinary increase; but it is supposed, that the enumeration in 1783, was more correct and complete than the one in 1763. Including the provinces not subject to the poll-tax, the general calculation for 1763, was 20,000,000, and for 1796, 36,000,000^a.

^a Tooke's View of the Russian Empire, vol. ii. book iii. sect. i. p. 126, et seq.

C H A P. IV.

On the fruitfulness of Marriages.

NOTWITHSTANDING the extraordinary proportions of births to deaths in Russia, which have been noticed in the last chapter, and the confirmation of these proportions, in a considerable degree, by actual enumerations, which establish a very rapid increase, it appears, that, in most of the provinces, each marriage yields only three children.

But if we reflect a moment, it will be clear, that to prevent the population of a country from regularly decreasing, it is absolutely necessary that each marriage, on an average, should yield a marriage, that is, yield two children who live to be married. If the result fall short of this, the number of marriages must be gradually diminishing, and the number of children to each marriage remaining the same, the population, of course, will continue decreasing. If each marriage yield accurately two marrying children, the number of marriages, and the number of children, being the same in every generation, the population can be neither retrograde nor progressive, but must remain exactly stationary.

Supposing each marriage to produce three children, as appears to be the case, according to the lists in some of the provinces of Russia, it will be granted, that one, out of three, is but a small proportion to allow for all who die in infancy and celibacy. But admitting this proportion, which may perhaps be true in the present instance, though it is very rarely so in other situations, it will follow that
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exactly two children, and no more, from every marriage; live to form a fresh union; in which case, from what has been, before observed, no increase is possible. And yet in these same provinces, the proportion of the births to the deaths is given as 26 to 10; 22 to 10; 21 to 10; 20 to 10, &c: which implies a very rapid increase. The lists therefore involve a most complete contradiction. Yet there is no reason to suspect the accuracy of the statements respecting the births and marriages; and, allowing for some omissions in the burials, the excess of births will still be great, and indeed, the increasing state of the population has been ascertained by the enumerations, mentioned in the last chapter.

Contradictory as these lists appear, they do not involve a greater contradiction than the lists of other countries, which purport to express the number of births which each marriage yields. And it may perhaps contribute to the better understanding of the tables, which I shall have occasion to notice in the next chapter, if I endeavour to explain a very important error into which all the writers in political arithmetic, that I have ever met with, have fallen, relative to this subject.

These lists are, in reality, enumerations of the annual marriages and the annual births; and the proportion between them, of course, accurately expresses the proportion of births to marriages which takes place in the year; but this proportion has been assumed to express the number of births which each individual marriage in the course of its duration yields. On what grounds this assumption has been made, will appear from the following considerations.

If, in a country where there were no exports or imports of people, we could obtain the number of births and of marriages that had taken place in the course of a very long period, it is evident, that double the number of marriages, or, which is the same thing, the number of married people, would express accurately the proportion of the born which had lived to be married; and the difference between this number and the number of births, would also express
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accurately, the proportion of the born which had died in infancy and celibacy. But the whole numbers of births and marriages, during this period, are evidently nothing more than the sum of the annual births, and the sum of the annual marriages. If, therefore, in any country, an average proportion can be obtained between the annual births and annual marriages, this proportion will manifestly express the same thing as the whole numbers; that is, the number of persons annually married, compared with the number of annual births, will accurately express the proportion of the born which lives to be married; and the difference between them, the proportion of the born which dies in infancy and celibacy. For instance, if the average proportion of annual marriages to annual births, in any country, be as 1 to 4, this will imply, that, out of four children born, two of them live to marry, and the other two die in infancy and celibacy. This is a most important and interesting piece of information, from which the most useful inferences are to be drawn; but it is totally different from the number of births which each individual marriage yields in the course of its duration; so much so, that on the supposition which has been just made, that half of the born live to be married, which is a very usual proportion, the annual marriages would be to the annual births as 1 to 4, whether each individual marriage yielded 4 births, 2 births, or 100 births. If the latter number be taken, then, according to the present supposition, 50 would live to be married; and out of every 100 births there would be 25 marriages, and the marriages would still be to the births as 1 to 4. The same proportion would evidently hold good in the case of two births yielded by each marriage, as this proportion is not in the smallest degree affected by the number of children which a marriage in the course of its duration may yield, but merely relates to the number of these children who live to be married, or the number of births from which one marriage results.

The only case in which the proportion of annual births to annual marriages, is the same, as the proportion of births which each individual

vidual marriage yields, is, when the births and deaths are exactly equal; and the reason of their being the same in this case is, that, in order to make the births and deaths exactly equal, we must assume, that each marriage yields exactly another marriage, and that, whatever be the number of children born from each union, they all die in infancy and celibacy, except one pair. Thus, if each marriage yield five children, two of which only live to form a fresh union, the proportion of annual marriages, to annual births, will be as 1 to 5, which is the same as the number of births yielded by each individual marriage, by hypothesis. But whenever each marriage yields either more or less than one marrying pair, that is, whenever the population is either increasing or decreasing, then the proportion of annual births to annual marriages, can never be the same, as the proportion of births yielded by each individual marriage in the course of its duration.

Hence it follows, that whenever we assume them to be the same, any increase of population is impossible. Thus, if the foregoing reasoning be admitted, and it be granted that the proportion of persons yearly married, to the number of children yearly born, truly expresses the proportion of the born which lives to be married; then, assuming at the same time, what is assumed by those who produce these lists, that they express the number of births yielded by each individual marriage, it is evident, that all such lists prove that the population is stationary; whereas, perhaps, from other accounts, it is known with certainty, that a rapid increase is going forwards. Thus, in Sweden, if we allow that the proportion of yearly marriages to yearly births, which is as 1 to 4 and $\frac{1}{5}$, expresses, what it really does, that out of 4 and $\frac{1}{5}$ births, one pair lives to marry; and suppose, at the same time, according to Wargentín, Sufmilch, Crome, Price, and others, that each marriage, in the course of its duration, yields only $4\frac{1}{5}$ births, it would follow, that, out of $4\frac{1}{5}$ births, 2 and $\frac{1}{5}$ die in infancy and celibacy, and only two children from each marriage live to form a fresh union, in which case no increase would be possible, though, from

the excess of births above the deaths, and even from actual enumerations, it might be completely ascertained, that the progress of the population was considerable.

Dr. Price had considered this subject sufficiently to see, that, in countries where an increase or decrease of population was taking place, these lists did not accurately express the number of births yielded by each marriage; but that he was very far from coming at what I conceive to be the just conclusion on this point, appears, from his observing that, on the supposition that half of the born live to marry, if the prolificness of marriages were to increase, the births would rise above quadruple the weddings^a; whereas, in fact, as long as exactly half of the born live to be married, the annual births will always be exactly quadruple the annual weddings, let the prolificness of marriages vary in any conceivable degree^b.

As a further proof that Dr. Price did not understand this subject, though he has a long and elaborate note on it, he often mentions the lists of the yearly births and marriages, as expressing the number of children born to each marriage, and particularly notices the proportion in Sweden, as shewing the degree of prolificness in the marriages of that country^c. He merely thought that the lists of annual births and marriages, did not, in all cases, express accurately the prolificness of marriages; but he does not seem to have been in the smallest degree aware, that they had absolutely nothing to do with it; and that, so far from being merely inaccurate, it would be impossi-

^a Observations on Reverf. Paym. vol. i. p. 270, note.

^b That is, when a sufficient time has elapsed, to let the births affect the marriages. Before this period, indeed, Dr. Price's observation would be just; but, practically, it seldom happens that the women of a country become all at once more prolific than usual; and in the general tables of mortality from which the deductions are made, if they be not such, as for the births to affect the marriages, they cannot express a just average of any kind, and are in every point of view almost entirely useless.

^c Observations on Reverf. Paym. vol. i. p. 275.

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ble, from such lists, unaccompanied by other information, to tell with certainty, whether the prolificness in the marriages of any country were such as to yield 2 births, or 100 births in the course of their duration.

Such lists, therefore, considered as expressing the prolificness of marriages, must be rejected as perfectly useless; but considered as expressing the proportion of the born which lives to be married, should be preserved as highly valuable, and as giving a most interesting and desirable piece of information.

The late empress Catherine, in her instructions for a new code of laws in Russia, says, "our peasants have for the most part twelve, fifteen, and even as far as twenty children from one marriage^a." This is certainly an exaggeration; but the probability is, that the assertion was founded on a knowledge that the Russian women were generally prolific; and yet, according to the lists which have been produced, it would appear that in most of the provinces, one marriage yields only three children, which is perfectly irreconcilable with the assertions of the empress. But, according to the foregoing reasonings, these lists merely express that, out of three children born, two live to be married, which agrees with the extraordinary healthiness in early life noticed in some of the provinces. The probability is, that each marriage in these provinces, yields about 6 births, 4 of which live to marry; and this supposition, which retains the proper proportion of the births to the marriages, according to the lists, will account for the excess of the births above the deaths, and the rapid increase of the population.

In those provinces where the annual births are to the annual marriages as 4 to 1, there, according to the principles laid down, only 2 out of 4, instead of 2 out of 3, live to be married; and to produce the excess of births, observed in some of these provinces, even after

^a Chap. xii. p. 188. 4to. 1770. Peterburgh.

making

making great allowances for omissions in the burials^a, it will be necessary to suppose, that there were full as many as 8 births to each marriage in the course of its duration.

Taking the general proportion of annual births to marriages for the whole country, as given by Mr. Tooke, then it would appear, that, out of 362 births, 200 lived to marry^b; and to produce a proportion of births to deaths, as 2 to 1, instead of $2\frac{1}{2}$ to 1, as given by Mr. Tooke, that is, allowing the $\frac{1}{2}$ for the omissions in the burials, it will be necessary to suppose 7 or $7\frac{1}{2}$ births to each marriage, which may in some degree justify the assertions of the empiric^c.

These are rough calculations, formed by constructing tables on the plan of one produced by Wallace, in his Dissertation on the Numbers of Mankind, and observing the proportions of births to deaths, which result from different suppositions respecting the number of children born, and the number which live to be married. As this dissertation is not in every person's hands, I insert the table, in order that the reader may see the grounds on which I have gone in these calculations.

It sets out with a single pair, but of course it is the same thing, whether we begin with 2 people or 2 millions of people. There are 8 columns, the contents of which are explained at the top of each.

^a I am inclined to believe, that where only half of the born live to be married, the proportion of the births to the deaths can never rise quite so high as 2 to 1, whatever may be the number of children to a marriage. The lists, therefore, such as those of Veronesch, which imply that only half of the born live to be married, at the same time that the births are to the deaths in the proportion of above 2 to 1, can only be accounted for by great omissions in the deaths, and by emigrations.

^b Tooke's View of Russian Empire, vol. ii. b. iii. p. 147.

^c On the supposition that I have not assumed the proper proportions of births to deaths, which, from not knowing how to estimate the acknowledged omissions in the burials, is very probable, the results of course will be changed, and therefore too much stress should not be laid on them.

TABLE

TABLE I.

Periods of the scheme.	Years of the scheme.	Born since the last period.	Of whom died since last period.	And remain in life to propagate.	Died since the last period at an advanced age.	The sum of all who are alive at the respective period.	The sum of the last column collected.
Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.	Col. 6.	Col. 7.	Col. 8.
0	1	0	0	0	0	2	2
1	$33\frac{1}{2}$	6	2	4	0	2+4	6
2	$66\frac{1}{2}$	12	4	8	2	6+8-2	12
3	100	24	8	16	4	12+16-4	24
4	$133\frac{1}{2}$	48	16	32	8	24+32-8	48
5	$166\frac{1}{2}$	96	32	64	16	48+64-16	96
6	200	192	64	128	32	96+128-32	192

The object of Mr. Wallace, in this table, was merely to shew the progress of population from a single pair, and the period of doubling; but, if no essential fault be found with the construction of it, it may be applied more extensively and usefully.

The periods are taken at $33\frac{1}{2}$ years; but the real period of a generation will, of course, vary in different countries, according to the average age of marriage. Each marriage is supposed to yield 6 children, 2 of whom, or one third, die in infancy or celibacy; and 4, or two thirds, forming two marriages, are left alive to breed.

If we examine the numbers in the second period, we shall find 12, in the 3d column, which expresses the births; 4, in the 4th column, which expresses the deaths in infancy and celibacy; and 2, in the 6th column, which expresses the deaths of the parents. Consequently the births are to the deaths, in the same period, as 12 to 4+2, as 12 to 6, or 2 to 1, and the proportions continue the same in all the other periods.

periods. From which, I think, we may safely infer, that, if in any country the births be to the deaths as 2 to 1, and two thirds of the born live to marry, that each marriage must yield exactly 6 children.

If we examine the births and marriages in any of the contemporaneous periods, we shall find, in the second period, 12 births, and 8 marrying persons, or the proportion of 12 births to 4 marriages; in the third period, 24 births and 16 marrying persons, or the proportion of 24 births to 8 marriages; and so on always in the proportion of 3 to 1. But the proportion of the sum of births to the sum of marriages, during these periods, must be the same, as any correct annual average; and consequently, the annual births are to the annual marriages as 3 to 1; from which, according to the usual mode of calculation, it would be inferred, that each marriage yielded 3 children, though we set out with the supposition of 6 children to each marriage; a contradiction, which strongly confirms the reasonings of the foregoing part of this chapter, and shews, that the proportion of annual births to annual marriages does not express the number of children to each marriage, but a very different thing, namely, the number of the born which live to marry.

If, instead of two thirds, as in the present instance, we suppose that only half of the born live to marry, which is a more common proportion; then, for the second period, we shall have in the third column, expressing the births, the number 9, and in the fifth column, expressing the marrying persons $4\frac{1}{2}$: consequently, the marriages will be to the births as 1 to 4, which is the most usual average of Europe; though, in the present instance, we still suppose, that each marriage yields six children in the course of its duration. On the same supposition, the births will be to the deaths, as 9 to $4\frac{1}{2} + 2$, as 18 to 13, or about $13\frac{1}{3}$ to 10; and consequently it may be inferred, that, when the births are to the deaths as $13\frac{1}{3}$ to 10, or 138 to 100, and half of the born live to marry, each marriage must yield six births.

If we suppose five births to a marriage, and that half of the born live to marry, then, according to the table, the births will be to the deaths,

deaths, as, about $12\frac{1}{3}$ to 10; and consequently we may infer, in the same manner, that when the births are to the deaths as $12\frac{1}{3}$ to 10, and half of the born live to marry, that each marriage must yield 5 children.

Upon these principles, if we can obtain, in any country, the proportion of births to deaths, and of births to marriages, we may calculate pretty nearly the number of children born to each marriage^a. This number will indeed turn out to be very different from the results of the old mode of calculation; but this circumstance is rather in favour of its correctness; because the known facts respecting population, cannot possibly be accounted for, according to the usual mode of estimating the number of births to a marriage, which gives less than four, for the general average of Europe.

Buffon has inserted in his work some tables of mortality, which he means should be considered as applicable to the whole human race. By these, it appears, that half of the born die under eight years and one month old^b. If we apply the average of four children to a marriage, to Buffon's estimate of mortality, it would appear, that the population of Europe, instead of having a strong tendency to increase, is in danger of being extinct in the course of some years. Instead of increasing in a geometrical ratio, it would be decreasing in a geometrical ratio. If two, out of the four children allowed to each marriage, were to die under 8 years and a month old, the utmost that we could possibly expect, is, that $1\frac{1}{2}$ should survive, to form a fresh union, or that four present marriages should yield three in the next generation; a ratio of decrease, which would, in no very long period, unpeopled Europe.

But the truth is, that both the calculations are incorrect. Buffon's tables were taken from the registers of Paris, and its neighbouring

^a That is, upon the supposition, that there is no incorrectness in the construction of the table, or in the inferences which I think may be drawn from it. At present I do not see any.

^b Histoire Naturelle de l'Homme, tom. iv. p. 420. 12mo. 1752.

villages, and can by no means be considered as generally applicable. The source of the other error has been attempted to be pointed out in this chapter.

It is only in unhealthy towns, or villages very peculiarly circumstanced, that half of the born die under 8 or 9 years of age. Taking an average throughout Europe, I have little doubt, that not only above half of the born live beyond the age of puberty, but that each marriage yields considerably above four births, I should think, more than five. The poverty which checks population, tends much more powerfully to increase the number of deaths, than to diminish the number of births.

In forming conclusions respecting the proportion of the born which lives to be married from the lists of annual births and annual marriages, which, according to the principles laid down, is the only point of view in which they are useful; there is one circumstance, which, if not particularly attended to, may lead to considerable error.

In country parishes, from which there are emigrations, the proportion which lives to be married will be given too small, and in towns which receive continually an accession of strangers, this proportion will be given much too great. The proportion of annual births to annual marriages, is in general higher, in the country, than in towns; but if there were no changing of inhabitants, the proportion in the towns would be much the highest. If, in a country parish, the births be to the weddings, as 4, or $4\frac{1}{2}$, to 1, this implies, that, out of 4 or $4\frac{1}{2}$ births, in that place, 2 lived to be married in that place; but many probably emigrated and married in other places, and therefore we cannot positively infer, from this proportion, that only 2 out of the 4, or $4\frac{1}{2}$, lived to be married.

In towns, the proportion of births to marriages is very often only 3, and $3\frac{1}{2}$, to 1, which would seem to imply that, out of 3, or $3\frac{1}{2}$ children, 2 lived to be married; but in these towns, it is known perhaps from the bills of mortality, that much above half of the born die under the age of puberty. The proportion which has been mentioned,

mentioned, therefore, cannot possibly express the real proportion of the children born in the town, which lives to be married, but is caused by the accession of strangers, whose marriages appear in the registers, though not their births. In towns, where there is a great mortality in early life, if no marriages were registered but of those who were born in the place, the proportion of annual births to annual marriages, would be greater than the proportion of children born to each marriage, in the course of its duration, and would amount, perhaps, to 6 or 7 to 1, instead of 3, or $3\frac{1}{2}$, to 1.

In Leipzig, the proportion of births to weddings, is only 2 and $\frac{8}{10}$ to 1^a; and Susmilch, supposing this to imply that there were only 2 and $\frac{8}{10}$ children born to each marriage, puzzles himself to account for this extraordinary unfruitfulness; but this appearance in the registers, without doubt, arises, either from a great accession of strangers, or from a custom among the inhabitants of the neighbouring country, of celebrating their marriages in the town.

At Geneva, where the registers are supposed to be kept with considerable care, the number of marriages, from the year 1701 to 1760, was 21,493, and the number of births in the same period, 42,076; from which it is inferred, that each marriage had yielded, on an average, less than two children. The author of a valuable paper in the *Bibliothèque Britannique*, who mentions these numbers^b, naturally expresses some surprise at the result, but still adopts it as the measure of the fruitfulness of the Geneva women. The circumstance, however, arises undoubtedly from the constant influx of new settlers, whose marriages appear in the registers but not their births. If the number of children from each individual mother were traced with care in the bills of mortality at Geneva, I am confident that the result would be very different.

In Paris the proportion of annual births to annual marriages, is about $4\frac{1}{2}$ to 1^c, and the women have, in consequence, been

^a Susmilch's *Gottliche Ordnung*, vol. i. c. v. f. lxxxiii. p. 171. ^b *Tom. iv. p. 38. note.*

^c Susmilch's *Gottliche Ordnung*, vol. i. c. v. f. lxxxv. p. 174.

considered as more prolifick than usual for a large town; but no such inference can properly be drawn from this proportion, which is probably caused, merely by the infrequency of marriages among persons not born in the town, and the custom of celebrating marriages in the neighbouring villages. The small number of weddings which takes place in Paris, in proportion to the whole population^a, and the more than usual number in the villages round Paris, seem to confirm this supposition.

The rapidity of the increase in population depends upon the number of children born to each marriage, and the proportion of that number which lives to form a fresh union. The measure of this rapidity is the proportion, which the excess of the births above the deaths, bears to the whole population.

That the reader may see at once the tendency to increase, and the period of doubling, which would result from any observed proportion of births to deaths, and of these to the whole population, I subjoin two tables from Sufmilch, calculated by Euler, which I believe are very correct. The first is confined to the supposition of a mortality of 1 in 36, and therefore can only be applied to countries where such a mortality is known to take place. The other is general, depending solely upon the proportion, which the excess of the births above the burials, bears to the whole population, and therefore may be applied universally to all countries, whatever may be the degree of their mortality.

It will be observed, that when the proportion between the births and burials is given, the period of doubling will be shorter, the

^a In Paris the proportion of annual marriages to the whole population, is, according to Sufmilch, 1 to 137; according to Crome, 1 to 160. In Geneva, it is as 1 to 64; and this extraordinary proportion of marriages, is certainly owing principally to the great influx of foreign settlers. In places, where the proportion of annual births to annual marriages is much influenced by new settlers, or emigrations, few accurate inferences can be drawn from them, in any way. They neither express the fruitfulness of marriages, nor the proportion of the born which lives to be married.

greater

greater the mortality; because the births, as well as deaths, are increased by this supposition, and they both bear a greater proportion to the whole population, than if the mortality were smaller, and there were a greater number of people in advanced life.

The general mortality of Russia, according to Mr. Tooke, as has before been stated, is 1 in 58, and the proportion of births 1 in 26. Allowing something for the omissions in the burials, if we assume the mortality to be 1 in 52, then the births will be to the deaths as 2 to 1, and the proportion, which the excess of births bears to the whole population, will be $\frac{1}{52}$. According to Table III. the period of doubling will, in this case, be about 36 years. But if we were to keep the proportion of births to deaths as 2 to 1, and suppose a mortality of 1 in 36, as in Table II. the excess of births above the burials would be $\frac{1}{36}$ of the whole population, and the period of doubling would be only 25 years.

It is evident, that in countries which are very healthy, and where, in consequence, the number of grown up people is great, the births can never bear the same proportion to the whole population, as where the number of grown people is smaller; and therefore the excess of births above the deaths, cannot, in so short a time, produce a number equal to the former population.

TABLE

TABLE II.

When in any country there are 100,000 persons living and the mortality is 1 in 36.

If the proportion of deaths to births be as	Then the excess of the births will be	The proportion of the excess of the births, to the whole population, will be	And therefore the period of doubling will be
10 :	11	$\frac{1}{361}$	250 years.
	12	$\frac{1}{355}$	125
	13	$\frac{1}{333}$	$83\frac{1}{2}$
	14	$\frac{1}{310}$	$62\frac{1}{2}$
	15	$\frac{1}{288}$	$50\frac{1}{2}$
	16	$\frac{1}{266}$	42
	17	$\frac{1}{243}$	$35\frac{1}{2}$
	18	$\frac{1}{221}$	$31\frac{1}{2}$
	19	$\frac{1}{200}$	28
	20	$\frac{1}{177}$	$25\frac{1}{10}$
	22	$\frac{1}{132}$	$21\frac{1}{8}$
	25	$\frac{1}{72}$	17
30	$\frac{1}{36}$	$12\frac{1}{2}$	

TABLE III.

The proportion of the excess of births above the deaths, to the whole of the living.	Periods of doubling in years, and ten thousandth parts.	The proportion of the excess of births above the deaths, to the whole of the living.	Periods of doubling in years, and ten thousandth parts.
1 :	10	1 :	21
	11		22
	12		23
	13		24
	14		25
	15		26
	16		27
	17		28
	18		29
	19		30
	20		

The proportion of the excess of births above the deaths, to the whole of the living.	Periods of doubling in years, and ten thousandth parts.	The proportion of the excess of births above the deaths, to the whole of the living.	Periods of doubling in years, and ten thousandth parts.
1 :	32	1 :	210
	34		220
	36		230
	38		240
	40		250
	42		260
	44		270
	46		280
	48		290
	50		300
	1 :		55
60		320	
65		330	
70		340	
75		350	
80		360	
85		370	
90		380	
95		390	
100		400	
1 :		110	1 :
	120	420	
	130	430	
	140	440	
	150	450	
	160	460	
	170	470	
	180	480	
	190	490	
	200	500	
		1 : 1000	

C H A P. V.

Of the Checks to Population in the middle parts of Europe.

I HAVE dwelt longer on the northern states of Europe, than their relative importance might, to some, appear to demand, because their internal economy is, in many respects, essentially different from our own; and a personal, though slight, acquaintance with these countries, has enabled me to mention a few particulars which have not yet been before the publick. In the middle parts of Europe, the division of labour, the distribution of employments, and the proportion of the inhabitants of towns to the inhabitants of the country, differ so little from what is observable in England, that it would be in vain to seek for the checks to their population in any peculiarity of habits and manners sufficiently marked to admit of description. I shall, therefore, endeavour to direct the reader's attention, principally, to some inferences drawn from the lists of births, marriages, and deaths in different countries; and these data will, in many important points, give us more information respecting their internal economy than we could receive from the most observing traveller.

One of the most curious and instructive points of view in which we can consider lists of this kind, appears to me to be, in the dependence of the marriages on the deaths. It has been justly observed by Montesquieu, that wherever there is a place for two persons to live comfortably, a marriage will certainly ensue^a: but in most of the countries in Europe, in the present state of their population, ex-

^a *Esprit des Loix*, liv. xxiii. c. x.

perience will not allow us to expect any sudden and great increase in the means of supporting a family. The place, therefore, for the new marriage must, in general, be made by the dissolution of an old one; and we find, in consequence, that, except after some great mortality, from whatever cause it may have proceeded, or some sudden change of policy peculiarly favourable to cultivation and trade, the number of annual marriages is regulated principally by the number of annual deaths. They reciprocally influence each other. There are few countries in which the common people have so much foresight, as to defer marriage, till they have a fair prospect of being able to support properly all their children. Some of the mortality, therefore, in almost every country, is forced by the too great frequency of marriage; and in every country, a great mortality, whether arising principally from this cause, or occasioned by the number of great towns and manufactories, and the natural unhealthiness of the situation, will necessarily produce a great frequency of marriage.

A most striking exemplification of this observation occurs in the case of some villages in Holland. Sufmilch has calculated the mean proportion of annual marriages, compared with the number of inhabitants, as between 1 in 107, and 1 in 113, in countries which have not been thinned by plagues or wars, or in which there is no sudden increase in the means of subsistence^a. And Crome, a later statistical writer, taking a mean between 1 in 92 and 1 in 122, estimates the average proportion of marriages to inhabitants as 1 to 108^b. But in the registers of 22 Dutch villages the accuracy of which, according to Sufmilch, there is no reason to doubt, it appears that out of 64 persons there is 1 annual marriage^c. This is a most extraordinary deviation from the mean proportion. When I first saw this number mentioned, not having then adverted to the mortality in these

^a Sufmilch, *Gottliche Ordnung*, vol. i. c. iv. sect. lvi. p. 126.^b Crome, *uber die Größe und Bevölkerung der Europ. Staaten*, p. 88. Leipf. 1785.^c Sufmilch, *Gottliche Ordnung*, vol. i. c. iv. sect. lviii. p. 127.

villages, I was much astonished, and very little satisfied with Susmilch's attempt to account for it, by talking of the great number of trades, and the various means of getting a livelihood, in Holland; as it is evident, that, the country having been long in the same state, there would be no reason to expect any great yearly accession of new trades and new means of subsistence, and the old ones would of course all be full. But the difficulty was immediately solved, when it appeared that the mortality was between 1 in 22, and 1 in 23^b, instead of being 1 in 36, as is usual when the marriages are in the proportion of 1 to 108. The births and deaths were nearly equal. The extraordinary number of marriages was not caused by the opening of any new sources of subsistence, and therefore produced no increase of population. It was merely occasioned by the rapid dissolution of the old marriages by death, and the consequent vacancy of some employment by which a family might be supported.

It might be a question, in this case, whether the too great frequency of marriage, that is, the pressure of the population too hard against the limits of subsistence, contributed most to produce the mortality, or the mortality, occasioned naturally by the employments of the people and unhealthiness of the country, the frequency of marriage. In the present instance, I should, without doubt, incline to the latter supposition, particularly, as it seems to be generally agreed, that the common people in Holland are, upon the whole, well off. The great mortality probably arises, partly from the natural marshiness of the soil, and the number of canals; and partly from the very great proportion of the people, which is engaged in sedentary occupations, and the very small number in the healthy employments of agriculture.

A very curious and striking contrast to these Dutch villages, tending to illustrate the present subject, will be recollected in what was

^a Susmilch, Gottliche Ordnung, vol. i. c. iv. sect. lviii. p. 128.

^b Id. c. ii. sect. xxxvi. p. 92.

said

said respecting the state of Norway. In Norway, the mortality is 1 in 48, and the marriages 1 in 130. In the Dutch villages, the mortality 1 in 23, and the marriages 1 in 64. The difference both in the marriages and deaths is above double. They maintain their relative proportions in a very exact manner, and shew how much the deaths and marriages mutually depend upon each other, and that, except where some sudden start in the agriculture of a country enlarges the means of subsistence, an increase of marriages will only produce an increase of mortality, and *vice versa*.

In Russia, this sudden start in agriculture has, in great measure, taken place; and consequently, though the mortality is very small, yet, the proportion of marriages is not so. But in the progress of the population of Russia, if the proportion of marriages remain the same as at present, the mortality will inevitably increase, or if the mortality remain nearly the same, the proportion of marriages will diminish.

Susmilch has produced some striking instances of this gradual decrease in the proportional number of marriages, in the progress of a country to a fuller population, and a more complete occupation of all the means of gaining a livelihood.

In the town of Halle, in the year 1700, the number of annual marriages was to the whole population as 1 to 77. - During the course of the 55 following years, this proportion changed gradually, according to Susmilch's calculation, to 1 in 167^a. This is a most extraordinary difference, and, if the calculation were quite accurate, would prove to what a degree the preventive check to population had operated, and how completely it had measured itself to the means of subsistence. As, however, the number of people is estimated by calculation, and not taken from enumerations, this very great difference in the proportions may not be perfectly correct, or may be occasioned in part by other causes.

^a Susmilch, Gottliche Ordnung, vol. i. c. iv. sect. lxii. p. 132.

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In the town of Leipfic, in the year 1620, the annual marriages were to the population as 1 to 82; from the year 1741 to 1756, they were as 1 to 120.^a

In Augsburgh, in 1510, the proportion of marriages to the population was as 1 to 86; in 1750, as 1 to 123.^b

In Dantzic, in the year 1705, the proportion was as 1 to 89; in 1745 as 1 to 118.^c

In the dukedom of Magdeburgh in 1700, the proportion was as 1 to 87; from 1752 to 1755, as 1 to 125.

In the principality of Halberstadt, in 1690, the proportion was as 1 to 88; in 1756, as 1 to 112.

In the dukedom of Cleves, in 1705, the proportion was 1 to 83; in 1755, 1 to 100.

In the Churmark of Brandenburg, in 1700, the proportion was 1 to 76; in 1755, 1 to 108.^d

More instances of this kind might be produced; but these are sufficient to shew that, in countries where, from a sudden increase in the means of subsistence, arising either from a great previous mortality, or from improving cultivation and trade, room has been made for a number of marriages much beyond those dissolved by death; this additional number will annually decrease, in proportion as all the new employments are filled up, and there is no further room for an increasing population.

But in countries which have long been fully peopled, and in which no new sources of subsistence are opening, the marriages being regulated principally by the deaths, will generally bear nearly the same proportion to the whole population, at one period as at another. And the same constancy will take place, even in countries where there is an annual increase in the means of subsistence, provided this increase be uniform and permanent. Supposing it to be

^a Sufmilch, Gottliche Ordnung, vol. i. c. iv. sect. lxxiii. p. 134.

^b Id. sect. lxxiv. p. 134.

^c Id. sect. lxxv. p. 135.

^d Id. sect. lxxvi. p. 140.

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fuch, as for half a century, to allow every year of a fixed number of marriages beyond those dissolved by death, the population would then be increasing, and perhaps rapidly; but it is evident, that the proportion of marriages to the whole population, would remain the same during the whole period.

This proportion Sufmilch has endeavoured to ascertain in different countries and different situations. In the villages of the Churmark of Brandenburg, 1 marriage out of 109 persons takes place annually^a; and the general proportion for agricultural villages, he thinks, may be taken at between 1 in 108, and 1 in 115.^b In the small towns of the Churmark where the mortality is greater, the proportion is 1 to 98^c; in the Dutch villages mentioned before, 1 to 64; in Berlin 1 to 110^d; in Paris 1 to 137^e; according to Crome in the *unmarrying* cities of Paris and Rome, the proportion is only 1 to 160.^f

All general proportions, however, of every kind, should be applied with considerable caution, as it seldom happens that the increase of food and of population is uniform; and when the circumstances of a country are varying, either from this cause, or from any change in the habits of the people with respect to prudence and cleanliness, it is evident, that a proportion which is true at one period, will not be so at another.

Nothing is more difficult than to lay down rules on these subjects that do not admit of exceptions. Generally speaking, it might be taken for granted, that an increased facility in the means of gaining a livelihood, either from a great previous mortality, or from improving cultivation and trade, would produce a greater proportion of annual marriages; but this effect might not perhaps follow. Sup-

^a Sufmilch, Gottliche Ordnung, vol. i. c. iv. sect. lvi. p. 125.

^b Id. sect. lxxv. p. 147.

^c Id. sect. lx. p. 129.

^d Ibid.

^e Id. sect. lxxix. p. 137.

^f Crome, uber die Grösse und Bevölkerung der Europäischen Staaten, p. 89.

posing

posing the people to have been before in a very depressed state, and much of the mortality to have arisen from the want of foresight which usually accompanies such a state, it is possible, that the sudden improvement of their condition, might give them more of a decent and proper pride; and the consequence would be, that the proportional number of marriages might remain nearly the same, but they would all rear more of their children, and the additional population that was wanted, would be supplied by a diminished mortality, instead of an increased number of births.

In the same manner, if the population of any country had been long stationary, and would not easily admit of an increase, it is possible that a change in the habits of the people, from improved education, or any other cause, might diminish the proportional number of marriages; but as fewer children would be lost in infancy, from the diseases consequent on poverty, the diminution in the number of marriages would be balanced by the diminished mortality, and the population would be kept up to its proper level by a smaller number of births.

Such changes, therefore, in the habits of a people should evidently be taken into consideration.

The most general rule that can be laid down on this subject is, perhaps, that any *direct* encouragements to marriage must be accompanied by an increased mortality. The natural tendency to marriage is, in every country, so great, that, without any encouragements whatever, a proper place for a marriage will always be filled up. Such encouragements, therefore, must be either perfectly futile, or produce a marriage where there is not a proper place for one, and the consequence must necessarily be, increased poverty and mortality. Montesquieu, in his *Lettres Persanes*, says, that in the past wars of France, the fear of being inrolled in the militia, tempted a great number of young men to marry, without the proper means of supporting a family, and the effect was, the birth of a crowd of children,

dren, "que l'on cherche encore en France, et que la misère la fa- mine et les maladies en ont fait disparaître".

After so striking an illustration of the necessary effects, of direct encouragements to marriage, it is perfectly astonishing, that in his *Esprit des Loix*, he should say that Europe is still in a state to require laws which favour the propagation of the human species^b.

Susmilch adopts the same ideas, and though he contemplates the case of the number of marriages coming necessarily to a stand, when the food is not capable of further increase, and examines some countries, in which, the number of contracted marriages is exactly measured by the number dissolved by death, yet he still thinks that it is one of the principal duties of government to attend the number of marriages. He cites the examples of Augustus and Trajan, and thinks that a prince or a statesman would really merit the name of father of his people, if, from the proportion of 1 to 120 or 125, he could increase the marriages to the proportion of 1 to 80 or 90^c. But as it clearly appears, from the instances which he himself produces, that in countries which have been long tolerably well peopled, death is the most powerful of all the encouragements to marriage, the prince or statesman who should succeed in thus greatly increasing the number of marriages, might, perhaps, deserve much more justly the title of destroyer, than father, of his people.

The proportion of yearly births to the whole population, must evidently depend principally upon the proportion of the people marrying annually; and, therefore, in countries which will not admit of a great increase of population, must, like the marriages, depend principally on the deaths. Where an actual decrease of population is not taking place, the births will always supply the vacancies made by death, and exactly so much more, as the increasing agriculture and trade of the country will admit. In almost every part of Europe

^a Lettre cxxii.^b *Esprit des Loix*, liv. xxiii. c. xxvi.^c Susmilch, *Gottliche Ordnung*, vol. i. c. iv. sect. lxxviii. p. 151.

during the intervals of the great plagues, epidemics, or unusually destructive wars, with which it is occasionally visited; the births exceed the deaths; but as the mortality varies very much in different countries and situations, the births will be found to vary in the same manner, though from the excess of births above deaths, which most countries can admit, not in the same degree.

In 39 villages of Holland, where the deaths are about 1 in 23, the births are also about 1 in 23^a. In 15 villages round Paris, the births bear the same, or even a greater proportion to the whole population, on account of a still greater mortality. The births are 1 in 22^b, and the deaths the same^b. In the small towns of Brandenburg, which are in an increasing state, the mortality is 1 in 29, and the births 1 in 24^c. In Sweden, where the mortality is about 1 in 35, the births are 1 in 28^d. In 1056 villages of Brandenburg, in which the mortality is about 1 in 39 or 40, the births are about 1 in 30^e. In Norway, where the mortality is 1 in 48, the births are 1 in 34^f. In all these instances, the births are evidently measured by the deaths, after making a proper allowance for the excess of births which the state of each country will admit. In Russia this allowance must be great, as, although the mortality may perhaps be taken as only 1 in 48 or 50, the births are as high as 1 in 26, owing to the present rapid increase of the population.

Statistical writers have endeavoured to obtain a general measure of mortality for all countries taken together; but, if such a measure could be obtained, I do not see what good purpose it could answer. It would be but of little use in ascertaining the population of Europe, or of the world; and it is evident, that, in applying it to particular countries or particular places, we might be led into the grossest errors. When the mortality of the human race, in different coun-

^a Sufmilch, *Göttliche Ordnung*, vol. i. c. vi. f. cxvi. p. 225.

^b *Ibid.* and c. ii. f. xxxvii. p. 93.

^c *Id.* c. ii. f. xxviii. p. 80. and c. vi.

f. cxvi. p. 225.

^d *Id.* c. vi. f. cxvi. p. 225.

^e *Ibid.*

^f Thaarup's *Statistik*, vol. ii. p. 4.

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tries, and different situations, varies so much as from 1 in 20, to 1 in 60, no general average could be used with safety in a particular case, without such a knowledge of the circumstances of the country, with respect to the number of towns, the habits of the people, and the healthiness of the situation, as would probably supersede the necessity of resorting to any general proportion, by the knowledge of the particular proportion suited to the country.

There is one leading circumstance, however, affecting the mortality of countries, which may be considered as very general, and which is, at the same time, completely open to observation. This is the number of towns in any state, which has been before alluded to, and the proportion of town to country inhabitants. The unfavourable effects of close habitations and sedentary employments on the health are universal; and therefore, on the number of people living in this manner, compared with the number employed in agriculture, will much depend the general mortality of the state. Upon this principle it has been calculated, that when the proportion of the people in the towns, to those in the country, is as 1 to 3, then the mortality is about 1 in 36, which rises to 1 in 35, or 1 in 33, when the proportion of townsmen to villagers is 2 to 5, or 3 to 7; and falls below 1 in 36, when this proportion is 2 to 7, or 1 to 4. On these grounds the mortality in Prussia is 1 in 38; in Pomerania, 1 in 37 $\frac{1}{2}$; in the Neumark, 1 in 37; in the Churmark, 1 in 35; according to the lists for 1756^a.

The nearest average measure of mortality for all countries, taking towns and villages together, is, according to Sufmilch, 1 in 36^b. But Crome thinks that this measure, though it might possibly have suited the time at which Sufmilch wrote, is not correct at present, when in most of the states of Europe both the number and the size of towns have increased^c. He seems to be of opinion, indeed, that

^a Sufmilch, *Göttliche Ordnung*, vol. iii. p. 60.

^b Vol. i. c. ii. f. xxxv. p. 91.

^c Crome, *uber die Größe und Bevölkerung der Europäischen Staaten*, p. 116.

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this mortality was rather below the truth in Sufmilch's time, and that now 1 in 30 would be found to be nearer the average measure. It is not improbable that Sufmilch's proportion is too small, as he had a little tendency, with many other statistical writers, to throw out of his calculations epidemick years; but Crome has not advanced proofs sufficient to establish a general measure of mortality in opposition to that proposed by Sufmilch. He quotes Busching, who states the mortality of the whole Prussian monarchy to be 1 in 30^a. But it appears that this inference was drawn from lists for only three years, a period much too short to determine any general average. This proportion for the Prussian monarchy is, indeed, completely contradicted by subsequent observations mentioned by Crome. According to lists for five years, ending in 1784, the mortality was only 1 in 37^b. During the same period the births were to the deaths as 131 to 100. In Silesia the mortality from 1781 to 1784, was 1 in 30; and the births to deaths as 128 to 100. In Gelderland, the mortality from 1776 to 1781 was 1 in 27, and the births 1 in 26. These are the two provinces of the monarchy in which the mortality is the greatest. In some others it is very small. From 1781 to 1784, the average mortality in Neuffchatel and Ballengin, was only 1 in 44, and the births 1 in 31. In the principality of Halberstadt, from 1778 to 1784, the mortality was still less, being only 1 in 45 or 46, and the proportion of births to deaths 137 to 100^c.

The general conclusion that Crome draws, is, that the states of Europe may be divided into three classes, to which a different measure of mortality ought to be applied. In the richest and most populous states, where the inhabitants of towns are to the inhabitants of the country, in so high a proportion as 1 to 3, the mortality may be taken as 1 in 30. In those countries, which are in a middle state, with regard to population and cultivation, the mortality

^a Crome, *uber die Bevölkerung der Europaisch. Staat.* p. 118.

^b *Id.* p. 120.

^c *Id.* p. 122.

may

may be considered as 1 in 32. And in the thinly-peopled northern states, Sufmilch's proportion of 1 in 36 may be applied^a.

These proportions seem to make the general mortality rather too great, even after allowing epidemick years to have their full effect in the calculations.

^a Crome's *Europaischen Staaten*, p. 127.

C H A P. VI.

Effects of Epidemics on Tables of Mortality.

It appears clearly, from the very valuable tables of mortality which Sufmilch has collected, and which include periods of 50 or 60 years, that all the countries of Europe are subject to periodical sickly seasons, which check their increase; and very few are exempt from those great and wasting plagues, which, once or twice, perhaps, in a century, sweep off the third or fourth part of their inhabitants. The way in which these periods of mortality affect all the general proportions of births, deaths, and marriages, is strikingly illustrated in the tables for Prussia and Lithuania, from the year 1692 to the year 1757^a.

^a Sufmilch, Gottliche Ordnung, vol. i. table xxi. p. 83, of the tables.

TABLE

TABLE IV.

Annual average.	Marriages.	Births.	Deaths.	Proportion of births to marriages.	Proportion of deaths to births.
5 y ^{rs} to 1697	5747	19715	14862	10 : 34	100 : 132
5 y ^{rs} — 1702	6070	24112	14474	10 : 39	100 : 165
6 y ^{rs} — 1708	6082	26896	16430	10 : 44	100 : 163
In 1709 and 1710	a plague	number destroyed in 2 years.	247733		
In 1711	12028	32522	10131	10 : 27	100 : 320
In 1712	6267	22970	10445	10 : 36	100 : 220
5 y ^{rs} to 1716	4968	21603	11984	10 : 43	100 : 180
5 y ^{rs} — 1721	4324	21396	12039	10 : 49	100 : 177
5 y ^{rs} — 1726	4719	21452	12863	10 : 45	100 : 166
5 y ^{rs} — 1731	4808	29554	12825	10 : 42	100 : 160
4 y ^{rs} — 1735	5424	22692	15475	10 : 41	100 : 146
In 1736	5280	21859	26371	Epidemic years.	
In 1737	5765	18930	24480		
5 y ^{rs} to 1742	5582	22099	15255	10 : 39	100 : 144
4 y ^{rs} — 1746	5469	25275	15117	10 : 46	100 : 167
5 y ^{rs} — 1751	6423	28235	17272	10 : 43	100 : 163
5 y ^{rs} — 1756	5599	28392	19154	10 : 50	100 : 148
In the 16 y ^{rs} before the plague	95585	380516	245763	10 : 39	100 : 154
In 46 y ^{rs} after the plague	248777	1083872	690324	10 : 43	100 : 157
In 62 good years	344361	1464388 936087	936087	10 : 43	100 : 156
More born than died		528301			
In the 2 plague y ^{rs}	5477	23977	247733		
In all the 64 y ^{rs} including the plague	340838	1488365 1183820	1183820	10 : 42	100 : 125
More born than died		304745			

The table, from which this is copied, contains the marriages, births, and deaths, for every particular year during the whole period; but to bring it into a smaller compass, I have retained only the general average drawn from the shorter periods of five and four years, except where the numbers for the individual years presented any fact worthy of particular observation. The year 1711, immediately succeeding the great plague, is not included by Susmilch in any general average; but he has given the particular numbers, and if they be accurate, they shew the very sudden and prodigious effect of a great mortality on the number of marriages.

Susmilch calculates that above one third of the people was destroyed by the plague; and yet, notwithstanding this great diminution of the population, it will appear, by a reference to the table, that the number of marriages in the year 1711, was very nearly double the average of the six years preceding the plague^a. To produce this effect, we must suppose, that almost all who were at the age of puberty were induced, from the demand for labour, and the number of vacant employments, immediately to marry. This immense number of marriages in the year, could not possibly be accompanied by a great proportional number of births, because we cannot suppose that the new marriages could each yield more than one birth in the year, and the rest must come from the marriages which had continued unbroken through the plague. We cannot, therefore, be surprised, that the proportion of births to marriages in this year should be only 2 and $\frac{7}{10}$ to 1, or 27 to 10. But though the proportion of

^a The number of people before the plague, according to Susmilch's calculation, (vol. i. ch. ix. sect. 173.) was 570,000; from which, if we subtract 247,733, the number dying in the plague, the remainder 322,267 will be the population after the plague; which, divided by the number of marriages and the number of births for the year 1711, makes the marriages about one twenty-sixth part of the population, and the births about one tenth part. Such extraordinary proportions could only occur, in any country, in an individual year. If they were to continue, they would double the population in less than ten years.

births

births to marriages could not be great; yet, on account of the extraordinary number of marriages, the absolute number of births must be great; and as the number of deaths would naturally be small, the proportion of births to deaths is prodigious, being 320 to 100; an excess of births, as great, perhaps, as has ever been known in America.

In the next year, 1712, the number of marriages must of course diminish exceedingly, because, nearly all who were at the age of puberty having married the year before, the marriages of this year would be supplied principally by those who had arrived at this age, subsequent to the plague. Still, however, as *all* who were marriageable had not probably married the year before, the number of marriages, in the year 1712, is great in proportion to the population; and, though not much more than half of the number which took place during the preceding year, is greater than the average number in the last period before the plague. The proportion of births to marriages in 1712, though greater than in the preceding year, on account of the smaller comparative number of marriages, is, with reference to other countries, not great, being, as $3\frac{6}{10}$ to 1, or 36 to 10. But the proportion of births to deaths, though less than in the preceding year, when so very large a proportion of the people married, is, with reference to other countries, still unusually great, being as 220 to 100; an excess of births which, calculated on a mortality of 1 in 36, would double the population of a country (according to Table II. page 238) in $21\frac{1}{2}$ years.

From this period the number of annual marriages begins to be regulated by the diminished population, and of course to sink considerably below the average number of marriages before the plague, depending principally on the number of persons rising annually to a marriageable state. In the year 1720, about nine or ten years after the plague, the number of annual marriages, either from accident, or the beginning operation of the preventive check, is the smallest; and it is at this time, as might be expected, that the proportion

proportion of births to marriages rises very high. In the period from 1717 to 1721 the proportion, as appears by the Table, is 49 to 10; and, in the particular years 1719 and 1720, it is 50 to 10, and 55 to 10.

Susmilch draws the attention of his readers to the fruitfulness of marriages in Prussia after the plague, and mentions the proportion of 50 annual births to 10 annual marriages as a proof of it. There are the best reasons for supposing that the marriages in Prussia at this time, were very fruitful; but certainly this proportion by itself is no proof of it, being evidently caused by the smaller number of marriages taking place in the year, and not by the greater number of births*. In the two years immediately succeeding the plague, when the excess of births above the deaths was so astonishing, the births bore a small proportion to the marriages, and, according to the usual mode of calculating, it would have followed, that each marriage yielded only $2\frac{7}{10}$, or $3\frac{6}{10}$ children. In the last period of the table, from 1752 to 1756, the births are to the marriages as 5 to 1, and in the individual year 1756, as $6\frac{1}{10}$ to 1; and yet, during this period, the births are to the deaths only as 148 to 100; which could not have been the case, if the high proportion of births to marriages, had indicated a greater number of births than usual, instead of a smaller number of marriages.

The variations in the proportion of births to deaths in the different periods of the 64 years included in the table, deserve particular attention. If we were to take an average of the four years immediately succeeding the plague, the births would be to the deaths, in the proportion of above 22 to 10, which, supposing the mortality to be 1 in 36, would double the population in less than 21 years. If we take the 20 years from 1711 to 1731, the average proportion of the births to deaths will appear to be about 17 to 10; a proportion which (according to Table II. page 238) would double the population in about 35 years. But if, instead of 20 years, we

* Susmilch, Gottliche Ordnung, vol. i. c. v. f. lxxxvi. p. 175.

were

were to take the whole period of 64 years, the average proportion of births to deaths turns out to be but a little more than 12 to 10; a proportion which would not double the population in less than 125 years. If we were to include the mortality of the plague, or even of the epidemick years 1736 and 1737, in too short a period, the deaths might exceed the births, and the population would appear to be decreasing.

Susmilch thinks that instead of 1 in 36, the mortality in Prussia after the plague might be 1 in 38; and it may appear perhaps to some of my readers, that the plenty, occasioned by such an event, ought to make a still greater difference. Dr. Short has particularly remarked, that an extraordinary healthiness generally succeeds any very great mortality; and I have no doubt that the observation is just, comparing similar ages together. But under the most favourable circumstances, infants under three years, are more subject to death than at other ages; and the extraordinary proportion of children which usually follows a very great mortality, counterbalances the natural healthiness of the period, and prevents it from making much difference in the general mortality.

If we divide the population of Prussia, after the plague, by the number of deaths in the year 1711, it will appear that the mortality was nearly 1 in 31, and was therefore increased, rather than diminished, owing to the prodigious number of children born in that year. And, in general, we shall observe, that, from this cause, a great previous mortality produces a much more sensible effect on the births than on the deaths. By referring to the table, it will appear that the number of annual deaths regularly increases with the increasing population, and nearly keeps up the same relative proportion all the way through. But the number of annual births is not very different during the whole period, though, in this time, the population had more than doubled itself; and therefore the *proportion* of

* History of air, seasons, &c. vol. ii. p. 344.

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births

births to the whole population, at first, and at last, must have changed in an extraordinary degree.

On an average of the 46 years after the plague, the proportion of annual births to annual marriages is as 43 to 10, that is, according to the principles laid down in the fourth chapter of this book, out of 43 children born, 20 of them live to be married. The average proportion of births to deaths during this period is 157 to 100. But to produce such an increase, on the supposition that only 20 children out of 43, or 2 out of 4 $\frac{1}{2}$ live to be married, each marriage, I am persuaded, for the reasons given in that chapter, must have yielded 8 births.

Crome observes, that when the marriages of a country yield less than 4 births, the population is in a very precarious state^a; and, like the other writers on this subject, he estimates the number of children from each marriage by the proportion of yearly births to yearly marriages. But I should say, on the contrary, that the population was in a more precarious state, when the yearly marriages in these lists appeared to give more than four children. If less than half of the born live to be married, which would then be the case, an extraordinary number of children to each marriage is necessary to produce any considerable increase. In Prussia, the marriages were so fruitful, as to allow of a considerable mortality among the children, without stopping the increase; but this mortality in itself cannot be considered as a favourable sign; and, in other countries in which a rapid increase is going on, the proportion of yearly births to yearly marriages is generally not so high as 4 to 1, or, according to the common mode of calculating, each marriage yields less than 4 children.

In the Churmark of Brandenburg, for 15 years after 1694, the proportion of births to deaths was nearly 17 to 10, which, if it had continued, would have doubled the population in 35 years; yet the

^a *Über die Bevölkerung der Europäischen Staat.* p. 91.

proportion

proportion of yearly births to yearly marriages was only 37 to 10. In the whole period from 1692 to 1756, in which the population had actually more than doubled itself, notwithstanding many epidemic years, this proportion was nearly the same, or about 37 $\frac{1}{2}$ to 10^b.

In the dutchy of Pomerania from 1694 to 1756, the population had doubled itself, and the average proportion of yearly births to yearly marriages was 38 to 10^b.

In the Newmark of Brandenburg from 1694 to 1756, there were some periods of rapid increase, though it was checked more frequently and effectually by epidemics. In 30 years, to 1726, the average proportion of births to deaths was 148 to 100, and the proportion of annual births to annual marriages 38 to 10. In the whole period, the births were to the deaths as 136 to 100, and the proportion of births to marriages the same as in the period of thirty years^c.

In Russia, we know that a very rapid increase is going forwards, though the proportion of annual births to annual marriages is only about 36 to 10. And, if we had lists for America, where the progress of population is still more rapid, I should expect to find that the proportion of annual births to annual marriages was less than 4 to 1^d.

Or

^a *Sufmilch, Göttliche Ordnung,* vol. i. table xxii. p. 88. of the tables.

^b *Id.* table xxiii. p. 91.

^c *Id.* table xxv. p. 99.

^d From a paper in the *Transactions of the Society at Philadelphia* (vol. iii. N^o vii. p. 25.) by Mr. Barton, entitled, *Observations on the probability of life in the United States,* which I have seen since this was written, I am not sure that I might not be disappointed in the expectation here expressed. If, indeed, Mr. Barton's calculations were to be considered as true for the United States in general, it would appear that half of the born die under 13 or 14; and therefore half of the born could not live to marry. But the fact is, that Mr. Barton's calculations, which he applies generally, are merely taken from the town of Philadelphia, and one or two small towns or villages which are certainly not healthy. Our largest European towns are, of course, not so healthy as Philadelphia, where it appears that half of the born die under 12 $\frac{1}{2}$, but many of our moderate towns are

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much

On the contrary, in Silesia, where the proportion of births to deaths is only 13 to 10, and where consequently the progress of the population is not rapid, the proportion of yearly births to yearly marriages is $4\frac{1}{6}$ to 1, or 41 to 10^a. And in France, this proportion before the revolution, was $4\frac{1}{2}$ to 1, though the progress of population was slower than in Silesia. In Corsica, the births are said to be to the marriages as 5 to 1, though the population of Corsica cannot possibly be in a continued state of rapid increase. The proportion of births to deaths in Norway, is greater than in Sweden, though in Norway the annual births are to the annual marriages as 38 to 10, and in Sweden, as 41 to 10.

It cannot therefore be said, that the population of a country is in a precarious state when the proportion of yearly births to yearly marriages is less than 4 to 1. Such a proportion is, on the contrary, favourable to population, and is found to exist in many countries, where the increase of people is very rapid. A proportion greater than 4 to 1 is in itself unfavourable to the progress of population, and though it may occasionally exist in countries which are increas-

much more healthy. Mr. Barton's calculations of a mortality of 1 in 45, at Philadelphia, and 1 in 47 at Salem, certainly contradict his other estimates, and can therefore only have been taken for short periods, and rejecting epidemick years; indeed, he acknowledges the having made this kind of rejection in one or two instances, and of course his calculations are not to be relied on. He mentions $6\frac{1}{2}$ births to a marriage, but his numbers give only $4\frac{1}{2}$: and, supposing this to be the true proportion of children to a marriage, if, at the same time we were to suppose that half of the born die under 14, all increase in the population of America would be impossible. On the whole, though we cannot imagine that the calculations in this paper are applicable to the United States in general, and that half of the born die under 14, instead of living to 25 or 30 and above, as in Europe; yet, if we suppose, that they imply a considerable mortality under puberty, we must believe that each marriage yields full as many as 7 or 8 births, to account for the rapid progress of population which we know for a certainty is going forwards in America. Dr. Franklin supposes 8 births to a marriage in America, and that half of the born live to marry, which probably is not far from the truth. (Miscell. p. 3.)

^a Sufmilch, *Gottliche Ordnung*, vol. i. table xx. p. 81.

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ing rapidly, owing to an extraordinary fruitfulness of the marriages, yet it will be found more frequently in countries where the progress of population is slow.

I take every opportunity that occurs of illustrating this subject, because so many respectable writers have fallen into the error of estimating the number of children produced by each marriage in the course of its duration, by the proportion of yearly births to yearly marriages, and I am willing to give ample reasons to the reader for differing from such united authority. All these writers themselves express their surprize at the results that the lists, which they thus make use of, give. Sufmilch and Crome particularly remark, that the average of 4 or $4\frac{1}{2}$ children to a marriage, contradicts the experience we have of the fruitfulness of particular women, many of whom bear above 12 children^a, though a considerable part of them may die in the rearing. And Wargentini takes notice of the smallness of this number, in reference to the reputed fecundity of the Northern women^b.

I feel strongly persuaded, that it has been principally owing to this error in the mode of estimating the fruitfulness of marriages, that Dr. Price, and almost all the writers in political arithmetick, have so totally misapprehended the principle of population. If indeed this mode of calculation were just, the fears of depopulation would really be well founded.

When it appears, from the lists of any country, that the annual births are to the annual marriages in a higher proportion than 4 to 1, that is, according to the principles laid down, when less than half of the born live to be married, it cannot be determined from such a proportion alone, whether this effect arises from a number of persons above the age of puberty dying unmarried, the operation of the preventive check; or from a considerable mortality among children, the operation of the

^a *Gottliche Ordnung*, vol. i. c. v. f. lxxxiii. p. 169. Crome, p. 91.

^b Sufmilch, vol. i. c. v. f. lxxxv. p. 173.

positive

positive check. But the proportion of deaths and births will generally ascertain, to which class it ought to be referred. In Prussia, it is undoubtedly occasioned principally by the mortality among children; and it does not seem improbable, that where so many children are born to each marriage, many should perish for want of sufficient attention, though there might be no want of food. I think it is generally to be observed, that when the women in the lower classes of life marry very young, they not only have more children, but lose a greater proportion of them, than when they marry later, and from having a smaller number, are able to take better care of them. It appears, from a table given by Sufmilch, that in Prussia, during this period, half of the born died under 24^a. And as not much less than half of the born lived to be married, the marriages must have been early, and the preventive check could not have operated much.

In Sweden, half of the born live to 33^b, and as about half, or rather less, live to be married, the preventive check would operate much more than in Prussia, though still not to a great degree. In France, where a smaller proportion of the born lives to be married, the operation of the preventive check is probably not very different from what it is in Sweden, though I should think that it was certainly rather less. According to Necker^c, the proportion of marriages to the population in France is as 1 to 113^d.

The operation of the preventive check is best measured by the proportion which the whole population bears to the yearly marriages^d; but though this proportion be obtained by multiplying the number of annual births in proportion to each annual marriage, by the number of inhabitants in proportion to each annual birth; yet it does not follow that it will be small, because less than half of the born

^a Gottliche, Ordnung, vol. iii. tab. xxi. p. 29. ^b Price's Observ. on Revers. Paym. tab. xliii. p. 132. ^c De l'Administration des Finances, tom. i. c. ix. p. 255. 12mo. 1785. ^d Even from this measure, the inferences are not entirely to be depended upon, as it is liable to be influenced by the fruitfulness of marriages, and the proportion of the population

born live to be married, or be great, because more than half of the born live to be married. In that part of the Prussian dominions included in the table that has been given, and during the period there mentioned, less than half of the born lived to be married, yet the proportion of annual marriages to the whole population was as high as 1 to 92^e. In Norway, where more than half of the born live to be married, the proportion of annual marriages to the whole population is as low as 1 to 130. The reason is, that the proportion of the population to annual births, which is the multiplier, is, in the two cases, extremely different.

In Norway, it is probable, that half of the born live to forty-three, forty-four, or above; and therefore, though rather more than half of the born live to be married, there will necessarily be many persons between the ages of 20 and 44 living unmarried, that is, the preventive check will prevail to a considerable degree. In a part of the Pays de Vaud in Switzerland, half of the born live to 45;

population which is under the age of puberty. If all the marriages which take place in a country, be they few or many, take place young, and be consequently prolifick, it is evident that to produce the same proportion of births, a smaller proportion of marriages will be necessary; or with the same proportion of marriages a greater proportion of births will be produced. This latter case seems to be applicable to France, where both the births and deaths are greater than in Sweden, though the proportion of marriages is nearly the same, or rather less. And when in two countries compared, one of them has a much greater proportion of its population under the age of puberty, than the other, it is evident, that any general proportion of annual marriages to the whole population, will not imply the same operation of the preventive check among those of a marriageable age. It is, in part, the small proportion of the population in towns under the age of puberty, as well as the influx of strangers, which makes it appear in the registers, that the preventive check operates less in towns than in the country; whereas there can be little doubt, that the number of unmarried persons of a marriageable age is the greatest in towns. The converse of this will of course be true, and consequently, in such a country as America, where above half of the population is under sixteen, the proportion of yearly marriages to the whole population will not accurately express, how little the preventive check really operates. The subject is intricate, and requires some attention.

^e Sufmilch, Gottliche Ordnung, vol. i. c. iv. f. lxxi. p. 141.

and therefore if none married before 40, and all married when they reached that age, more than half of the born would live to be married; yet all being unmarried under 40, the preventive check might be said to prevail to a very great degree.

It is evident, therefore, that we cannot infer the absence of the preventive check, because a considerable proportion of the born lives to be married. And it is equally evident, that we cannot infer the contrary.

In Holland, it would appear from the registers, that more than half of the born live to be married^a; yet, from the proportion of annual marriages, to the whole population in the Dutch villages, mentioned before, it is clear, that the preventive check cannot operate much. In the Churmark of Brandenburg, from 1694 to 1756, more than half of the born lived to be married. But it appears from a table given by Sufmilch, that, in the Churmark, half of the born die under 22^b. The marriages, therefore, must have been very early indeed. And, from the proportion of the marriages, for the Churmark, which he has given in one place, it appears that it was greater in comparison of the whole population, than in any other country, which he has mentioned, except Holland^c. Still, however, if it be true, that half of the born die under 22, it is rather difficult to conceive that more than half should live to be married.

^a Sufmilch, *Gottliche Ordnung*, vol. i. table xvii. p. 51.

^b Id. vol. iii. table xxii. p. 35.

^c Sufmilch's proportions and calculations for the same countries, appear now and then a little to contradict each other. This arises from their being formed at different periods. The proportion of marriages to the population for the Churmark of Brandenburg, from 1700 to 1755, (vol. i. ch. iv. sec. lxxi. p. 141.) appears to be 1 in 90, and up to the year 1722, 1 in 87. But in another calculation, which includes only the period from 1738 to 1748, the proportion for the villages of the Churmark is 1 in 109, and for the small towns, 1 in 98, (sec. lx. p. 129).

The table, which makes half of the born in the Churmark die under 22, was not formed from the period when the increase was so rapid, and when the lists appeared to shew that above half of the born lived to be married.

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There is one circumstance not yet noticed, which may contribute to smooth this difficulty, and which should be attended to in all cases. This is the number of second and third marriages. In the dukedom of Pomerania, it was observed, during a period of seven years, from 1748 to 1754, that out of 23,324 marriages, that were contracted, 6170 of them were between persons, one of which had been married before, and 1214, between persons, both of which had been married before. The whole of the latter number, therefore, and half of the former, ought to be subtracted, in order to find the number of the born which lived to be married. And, from this cause, all the lists will give the proportion of the born which lives to be married, greater than the truth. In the present instance, probably, full as many as half of the born died unmarried; and this correction, I am persuaded, ought to be applied to the Dutch villages, in particular, where the proportion of marriages is so great, as it is difficult to conceive, that a mortality of 1 in 23, should not destroy more than half of the born before they reach the age of twenty. In addition to this, I have little doubt that many of the marriages in the Dutch villages, are, as in towns, between persons not born in the place. There is a constant influx of strangers into all parts of Holland. It has been called the church-yard of Germany.

For the periodical, though irregular, returns of sickly seasons, I refer the reader to the valuable tables of mortality which Sufmilch has collected. The common epidemical years that are interspersed throughout these tables, will not, of course, have the same effects on the marriages and births, as the great plague in the table for Prussia; but in proportion to their magnitude, their operation will in general be found to be similar. From the registers of many other countries, and particularly of towns, it appears, that the visitations of the plague were frequent at the latter end of the 17th, and the beginning of the 18th centuries.

^a Sufmilch, *Gottliche Ordnung*, vol. i. c. v. f. xc. p. 183.

In contemplating the plagues, and sickly seasons which occur in these tables, after a period of rapid increase, it is impossible not to be impressed with the idea that the number of inhabitants had, in these instances, exceeded the food and the accommodations necessary to preserve them in health. The mass of the people would, upon this supposition, be obliged to live more hardly, and a greater number of them would be crowded together in one house; and these natural causes would evidently contribute to produce sickness, even though the country, absolutely considered, might not be crowded and populous. In a country, even thinly inhabited, if an increase of population take place, before more food is raised, and more houses are built, the inhabitants must be distressed for room and subsistence. If, in the Highlands of Scotland, for the next ten or twelve years, the marriages were to be either more frequent, or more prolific, and no emigration were to take place, instead of five to a cottage, there might be seven, and this, added to the necessity of worse living, would evidently have a most unfavourable effect on the health of the common people.

C H A P. VII.

Of the Checks to Population in Switzerland.

THE situation of Switzerland, is, in many respects, so different from the other states of Europe; and some of the facts that have been collected respecting it, are so curious, and tend so strongly to illustrate the general principles of this work, that it seems to merit a separate consideration.

About 35 or 40 years ago, a great and sudden alarm appears to have prevailed in Switzerland, respecting the depopulation of the country; and the transactions of the Economical Society of Berne, which had been established some years before, were crowded with papers deploring the decay of industry, arts, agriculture, and manufactures, and the imminent danger of a total want of people. The greater part of these writers considered the depopulation of the country as a fact so obvious as not to require proof. They employed themselves therefore chiefly in proposing remedies, and among others, the importation of midwives, the establishment of foundling hospitals, the portioning of young virgins, the prevention of emigration, and the encouragement of foreign settlers^a.

A paper, containing very valuable materials, was, however, about this time published, by a Mons. Muret, minister of Vevey, who, before he proceeded to point out remedies, thought it necessary to substantiate the existence of the evil. He made a very laborious and careful research into the registers of different parishes up to the time

^a See the different Memoirs for the year 1766.

of their first establishment, and compared the number of births which had taken place during three different periods of 70 years each, the first ending in 1620, the second in 1690, and the third in 1760^a. Finding, upon this comparison, that the number of births was rather less in the second than in the first period, (and by the help of supposing some omissions in the second period, and some redundances in the third,) that the number of births in the third was also less than in the second, he considered the evidence for a continued depopulation of the country from the year 1550, as incontrovertible.

Admitting all the premises, the conclusion is not perhaps so certain as he imagined it to be, and, from other facts which appear in his memoir, I am strongly disposed to believe, that Switzerland, during this period, came under the case supposed in page 246, and that the improving habits of the people, with respect to prudence, cleanliness, &c. had added gradually to the general healthiness of the country, and by enabling them to rear up to manhood a greater proportion of their children, had furnished the requisite increase of population with a smaller number of births. Of course, the proportion of annual births to the whole population, in the latter period, would be less than in the former.

From accurate calculations of M. Muret, it appears, that, during the last period, the mortality was extraordinarily small, and the proportion of children reared from infancy to puberty, extraordinarily great^b. In the former periods, this could not have been the case in the same degree. M. Muret himself, observes, that, "The ancient depopulation of the country was to be attributed to the frequent plagues which in former times desolated it;" and adds, "if it could support itself, notwithstanding the frequency of so dreadful

^a *Memoires, &c. par la Societ  Economique de Berne. Ann e 1766, premiere partie, p. 15. et seq. octavo. Berne.*

^b *Id. table xiii. p. 120. Ann e 1766.*

" an evil, it is a proof of the goodness of the climate, and of the certain resources which the country could furnish, for a prompt recovery of its population^a." He neglects to apply this observation as he ought, and forgets that such a prompt re-peopling could not take place without an unusual increase of births, and that, to enable a country to support itself against such a source of destruction, a greater proportion of births to the whole population would be necessary than at other times.

In one of his tables, he gives a list of all the plagues that had prevailed in Switzerland, from which it appears, that this dreadful scourge desolated the country, at short intervals, during the whole of the first period, and extended its occasional ravages to within 22 years of the termination of the second^b.

It would be contrary to every rule of probability, to suppose, that, during the frequent prevalence of this disorder, the country could be particularly healthy, and the general mortality extremely small. Let us suppose it to have been such, as at present takes place in many other countries which are exempt from this calamity, about 1 in 32, instead of 1 in 45, as in the last period. The births would, of course, keep their relative proportion, and instead of 1 in 36^c, be about 1 in 26. In estimating the population of the country by the births, we should thus have two very different multipliers for the different periods; and though the absolute number of births might be greater in the first period, yet the fact would by no means imply a greater population.

In the present instance, the sum of the births in 17 parishes during the first 70 years, is given as 49,860, which annually would be about 712. This, multiplied by 26, would indicate a population of 18,512. In the last period, the sum of the births is given 43,910^d, which will be about 626 annually. This, multiplied by 36, will

^a *Memoires, &c. par la Societ  Econ. de Berne. Ann e 1766, premiere partie, p. 22.*

^b *Id. table iv. p. 22.*

^c *Id. tabl  i. p. 21.*

^d *Id. p. 16.*

indicate a population of 22,536: and if the multipliers be just, it will thus appear, that, instead of the decrease which was intended to be proved, there had been a considerable increase.

That I have not estimated the mortality too high, during the first period, I have many reasons for supposing, particularly, a calculation respecting the neighbouring town of Geneva, in which it appears, that in the 16th century, the probability of life, or the age to which half of the born live, was only 4.883, rather less than four years and $\frac{2}{3}$ ths; and the mean life 18.511, about 18 years and a half. In the 17th century, the probability of life was 11.607, above 11 years and a half; the mean life 23.358. In the 18th century, the probability of life had increased to 27.183, 27 years and nearly a fifth, and the mean life to 32 years and a fifth^a.

It is highly probable, that a diminution of mortality, of the same kind, though, perhaps, not in the same degree, should have taken place in Switzerland; and we know from the registers of other countries, which have been already noticed, and most particularly from that of Prussia, that the period of the greater mortality naturally produces a greater proportion of births.

Of this dependence of the births on the deaths, M. Muret himself produces many instances; but not being aware of the true principle of population, they only serve to astonish him, and he does not apply them.

Speaking of the want of fruitfulness in the Swiss women, he says, that Prussia, Brandenburg, Sweden, France, and indeed every country, the registers of which he had seen, give a greater proportion of baptisms to the number of inhabitants, than the Pays de Vaud, where this proportion is only as 1 to 36^b. He adds, that, from calculations lately made in the Lyonois, it appeared, that in Lyons itself, the proportion of baptisms was 1 in 28; in the small

^a See a paper in the Bibliotheque Britannique, published at Geneva. tom. iv. p. 328.

^b Memoires, &c. par la Societe Econ. de Berne. Année, 1766, premiere partie, p. 47, 48.

towns

towns, 1 in 25; and in the parishes, 1 in 23 or 24. What a prodigious difference, he exclaims, between the Lyonois and the Pays de Vaud, where the most favourable proportion, and that only in two small parishes of extraordinary fecundity, is not above 1 in 26, and in many parishes it is considerably less than 1 in 40^c. The same difference, he remarks, takes place in the mean life. In the Lyonois, it is a little above 25 years, while in the Pays de Vaud, the lowest mean life, and that only in a single marshy and unhealthy parish, is 29 $\frac{1}{2}$ years, and in many places it is above 45 years^b.

“But whence comes it,” he says, “that the country where children escape the best from the dangers of infancy, and where the mean life, in whatever way the calculation is made, is higher than in any other, should be precisely that, in which the fecundity is the smallest? How comes it again, that, of all our parishes, the one which gives the mean life the highest, should also be the one, where the tendency to increase is the smallest?”

“To resolve this question, I will hazard a conjecture, which, however, I give only as such. Is it not, that, in order to maintain in all places the proper equilibrium of population, God has wisely ordered things in such a manner, as that the force of life, in each country, should be in the inverse ratio of its fecundity^c.”

“In effect, experience verifies my conjecture. Leyzin (a village in the Alps) with a population of 400 persons, produces but a little above eight children a year. The Pays de Vaud, in general, in proportion to the same number of inhabitants, produces 11, and the Lyonois 16. But if it happen, that at the age of 20 years, the 8, the 11, and the 16, are reduced to the same number, it will appear, that the force of life gives in one place, what fecundity does in another. And thus the most healthy countries, having less fecundity, will not

^a Memoires, &c. par la Societe Econ. de Berne. Année 1766, premiere partie, p. 48.

^b Ibid. ^c Id. p. 48. et seq.

“over-

“overpeople themselves, and the unhealthy countries, by their extraordinary fecundity, will be able to sustain their population.”

We may judge of the surprise of M. Muret, at finding from the registers, that the most healthy people were the least prolific, by his betaking himself to a miracle in order to account for it. But the *nodus* does not seem in the present instance to be worthy of such an interference^a. The fact may be accounted for, without resorting to so strange a supposition, as that the fruitfulness of women should vary inversely as their health.

There is certainly a considerable difference in the healthiness of different countries, arising partly from the soil and situation, and partly from the habits and employments of the people. When, from these, or any other causes whatever, a great mortality takes place, a proportional number of births immediately ensues, owing both to the greater number of yearly marriages, from the increased demand for labour, and the greater fecundity of each marriage, from being contracted at an earlier, and naturally a more prolific, age.

On the contrary, when, from opposite causes, the healthiness of any country or parish is extraordinarily great; if, from the habits of the people, no vent for an overflowing population be found in emigration, the absolute necessity of the preventive check will be forced so strongly on their attention, that they must adopt it, or starve; and consequently, the marriages being very late, the number annually contracted will not only be small, in proportion to the population, but each individual marriage will naturally be less prolific.

In the parish of Leyzin, noticed by M. Muret, all these circumstances appear to have been combined in a very high degree. Its situation in the Alps, but yet not too high, gave it probably the most pure and salubrious air; and the employments of the people being all pastoral, were consequently of the most healthy nature. From the calculations of M. Muret, the accuracy of which there is

^a Nec deus interfit nisi dignus vindice nodus.

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no reason to doubt, the probability of life in this parish, appeared to be so extraordinarily high as 61 years^a. And the average number of the births, being, for a period of 30 years, almost accurately equal to the number of deaths^b, clearly proved, that the habits of the people had not led them to emigrate, and that the resources of the parish for the support of population had remained nearly stationary. We are warranted, therefore, in concluding, that the pastures were limited, and could not easily be increased, either in quantity or quality. The number of cattle which could be kept upon them, would of course be limited; and, in the same manner, the number of persons required for the care of these cattle.

Under such circumstances, how would it be possible for the young men who had reached the age of puberty, to leave their father's houses, and marry, till an employment of herdsman, dairy-man, or something of the kind, became vacant by death. And as, from the extreme healthiness of the people, this must happen very slowly, it is evident, that the majority of them must wait during a great part of their youth, in their bachelor state, or run the most obvious risk of starving themselves and their families. The case is still stronger than in Norway, and receives a particular precision from the circumstance of the births and deaths being so nearly equal.

If a father had, unfortunately, a larger family than usual, the tendency of it would be rather to decrease, than increase, the number of marriages. He might, perhaps, with economy, be just able to support them all at home, though he could not probably find adequate employment for them on his small property; but it would evidently be long before they could quit him; and the first marriage among the sons would probably be after the death of the father; whereas, if he had had only two children, one of them might perhaps have married without leaving the parental roof, and the other, on the

^a Memoires par la Societé Econ. de Berne. Année 1766, table v. p. 64.

^b Id. table i. p. 15.

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death

death of the father. And, in a general view, it may be said, that the absence or presence of four grown up unmarried people, will make the difference of there being room, or not, for the establishment of another marriage and a fresh family.

As the marriages in this parish would, with few exceptions, be very late, and yet, from the extreme healthiness of the situation, be very slowly dissolved by the death of either of the parties, it is evident, that a very large proportion of the subsisting marriages would be among persons so far advanced in life, that most of the women would have ceased to bear children; and in consequence, the whole number of subsisting marriages, was found to be, to the number of annual births, in the very unusual proportion of 12 to 1. The births were only about a 49th part of the population; and the number of persons above sixteen, was to the number below that age, nearly as 3 to 1^a.

As a contrast to this parish, and a proof how little the number of births can be depended upon, for an estimate of population, M. Muret produces the parish of St. Cergue in the Jura, in which the subsisting marriages were, to the annual births, only in the proportion of 4 to 1, the births were a 26th part of the population, and the number of persons above and below sixteen just equal^b.

Judging of the population of these parishes, from the proportion of their annual births, it would appear, he says, that Leyzin did not exceed St. Cergue by above one fifth at most; whereas, from actual enumeration, the population of the former turned out to be 405, and of the latter, only 171^c.

I have chosen, he observes, the parishes where the contrast is the most striking; but though the difference be not so remarkable in the rest, yet it will always be found true, that, from one place to

^a Memoires, &c. par la Societé Econ. de Berne. Année 1766, p. 11 and 12.

^b Ibid.

^c Id. p. 11.

another,

another, even at very small distances, and in situations apparently similar, the proportions will vary considerably^a.

It is strange, that, after making these observations, and others of the same tendency, which I have not produced, he should rest the whole proof of the depopulation of the Pays de Vaud on the proportion of births. There is no good reason for supposing that this proportion should not be different, at different periods, as well as in different situations. The extraordinary contrast in the fecundity of the two parishes of Leyzin and St. Cergue, depends upon causes within the power of time and circumstances to alter. From the great proportion of infants which was found to grow up to maturity in St. Cergue, it appeared that its natural healthiness was not much inferior to that of Leyzin^b. The proportion of its births to deaths, was 7 to 4^c; but as the whole number of its inhabitants did not exceed 171, it is evident, that this great excess of births could not have been regularly added to the population during the last two centuries. It must have arisen, therefore, either from a sudden increase of late years in the agriculture, or trade, of the parish, or from a habit of emigration. The latter supposition I conceive to be the true one, and it seems to be confirmed by the small proportion of adults which has already been noticed. The parish is situated in the Jura, by the side of the high road from Paris to Geneva, a situation which would evidently tend to facilitate emigration; and in effect, it seems to have acted the part of a breeding parish for the towns and flat countries, and the annual drain of a certain portion of the adults, made room for all the rest to marry, and to rear a numerous offspring.

A habit of emigration in a particular parish, will not only depend on situation, but probably often on accident. I have little doubt that three or four very successful emigrations have frequently given

^a Memoires, &c. par la Societé Econ. de Berne. Année 1766, p. 13.

^b Id. table xiii. p. 120.

^c Id. table i. p. 11.

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a spirit of enterprize to a whole village; and three or four unsuccessful ones, a contrary spirit. If a habit of emigration were introduced into the village of Leyzin, it is not to be doubted that the proportion of births would be immediately changed; and at the end of twenty years, an examination of its registers might give results as different from those at the time of M. Muret's calculations, as they were then, from the contrasted parish of St. Cergue. It will hence appear, that other causes besides a greater mortality, will concur to make an estimate of population, at different periods, from the proportion of births, liable to great uncertainty.

The facts which M. Muret has collected are all valuable, though his inferences cannot always be considered in the same light. He made some calculations at Vevey, of a nature really to ascertain the question, respecting the fecundity of marriages, and to shew the fallacy of the usual mode of estimating it, though without this particular object in view at the time. He found that 375 mothers, had yielded 2093 children, all born alive, from which it followed, that each mother had produced $5\frac{1}{2}$, or nearly six children^a. These, however, were all actually mothers, which every wife is not; but allowing for the usual proportion of barren wives at Vevey, which he had found to be 20 out of 478, it will still appear that the married women, one with another, produced above $5\frac{1}{3}$ children. And yet this was in a town, the inhabitants of which, he seems to accuse of not entering into the marriage state at the period when nature called them, and when married, of not having all the children which they might have^b. The general proportion of the annual marriages to the annual births in the Pays de Vaud is as 1 to 3.9^c, and, of course, according to the common mode of calculation, the marriages would appear to yield 3.9 children each.

In a division of the Pays de Vaud into eight different districts,

^a Memoires, &c. par la Societé Econ. de Berné. Année 1766, p. 29. et seq.

^b Id. p. 32.

^c Id. table i. p. 21.

M. Muret

M. Muret found, that, in seven towns, the mean life was 36 years; and the probability of life, or the age to which half of the born live, 37. In 36 villages, the mean life was 37, and the probability of life 42. In nine parishes of the Alps the mean life was 40, and the probability of life 47. In seven parishes of the Jura, these two proportions were 38 and 42: in 12 corn parishes, 37 and 40: in 18 parishes among the great vineyards, 34 and 37: in 6 parishes of mixed vines and hills, 33 $\frac{1}{2}$ and 36: and in one marshy, 29 and 24^a.

From another table, it appears, that the number of persons dying under the age of puberty, was less than $\frac{1}{3}$ in the extraordinary parish of Leyzin; and less than $\frac{1}{4}$ in many other parishes of the Alps and the Jura. For the whole of the Pays de Vaud it was about $\frac{1}{3}$ ^b.

In some of the largest towns, such as Lausanne and Vevey, on account of the number of strangers above the age of puberty settling in them, the proportion of adults to those under 15, was nearly as great as in the parish of Leyzin, and not far from 3 to 1. In the parishes from which there were not many emigrations, this proportion was about 2 to 1. And in those which furnished inhabitants for other countries, it approached more towards an equality^c.

The whole population of the Pays de Vaud, M. Muret estimated at 113 thousand, of which 76 thousand were adults. The proportion of adults, therefore, to those under the age of puberty, for the whole country, was 2 to 1. Among these 76 thousand adults, there were 19 thousand subsisting marriages, and consequently 38 thousand married persons; and the same number of persons unmarried, though of the latter number nine thousand, according to M. Muret, would probably be widows or widowers^d. With such an average store of persons not in the actual state of marriage, amounting to the half of all the adults, there was little ground for apprehension, that any probable

^a Memoires, &c. par la Societé de Berné. Année 1766, table viii. p. 92. et seq.

^b Id. table xiii. p. 120.

^c Id. table xii.

^d Id. p. 27.

emigrations,

emigrations, or military levies, would affect the number of annual marriages, and check the progress of population.

The proportion of annual marriages to inhabitants in the Pays de Vaud; according to M. Muret's tables, was only 1 to 140^a, which is even less than in Norway.

All these calculations of M. Muret, imply the operation of the preventive check to population in a very considerable degree, throughout the whole of the district which he considered; and there is reason to believe, that the same habits prevail in other parts of Switzerland, though varying considerably from place to place, according as the situation or the employments of the people render them more or less healthy, or the resources of the country make room, or not, for an increase.

In the town of Berne, from the year 1583 to 1654, the sovereign council had admitted into the Bourgeoise 487 families, of which 379 became extinct in the space of two centuries, and in 1783 only 108 of them remained. During the hundred years, from 1684 to 1784, 207 Bernoise families became extinct. From 1624 to 1712, the Bourgeoise was given to 80 families. In 1623, the sovereign council united the members of 112 different families, of which 58 only remain^b.

The proportion of unmarried persons in Berne, including widows and widowers, is considerably above the half of the adults, and the proportion of those below sixteen, to those above, is nearly as 1 to 3^c. These are strong proofs of the powerful operation of the preventive check.

The peasants in the canton of Berne have always had the reputation of being rich, and, without doubt, it is greatly to be attributed to this cause. A law has for some time prevailed, which makes it

^a Mem. Soc. de Berne, Année 1766, tab. i.

^b Statistique de la Suisse, Durand, tom. iv. p. 405. 8vo. 4 vols. Lausanne, 1796.

^c Beschreibung von Bern, vol. ii. tab. i. p. 35. 2 vols. 8vo. Bern, 1796.

necessary

necessary for every peasant to prove himself in possession of the arms and accoutrements necessary for the militia, before he can obtain permission to marry. This at once excludes the very poorest from marriage; and a very favourable turn may be given to the habits of many others, from a knowledge that they cannot accomplish the object of their wishes, without a certain portion of industry and economy. A young man, who, with this end in view, had engaged in service, either at home, or in a foreign country, when he had gained the necessary sum, might feel his pride rather raised, and not be contented merely with what would obtain him permission to marry, but go on till he could obtain something like a provision for a family.

I was much disappointed, when in Switzerland, at not being able to procure any details respecting the smaller cantons, but the disturbed state of the country made it impossible. It is to be presumed, however, that as they are almost entirely in pasture, they must resemble in a great measure, the alpine parishes of the Pays de Vaud, in the extraordinary health of the people, and the absolute necessity of the preventive check; except where these circumstances may have been altered by a more than usual habit of emigration, or by the introduction of manufactures which has taken place in some parts.

The limits to the population of a country strictly pastoral, are strikingly obvious. There are no grounds less susceptible of improvement than mountainous pastures. They must necessarily be left chiefly to nature; and when they have been adequately stocked with cattle little more can be done. The great difficulty in these parts of Switzerland, as in Norway, is to procure a sufficient quantity of fodder for the winter support of the cattle which have been fed on the mountains in the summer. For this purpose, every bit of grass is collected with the greatest care. In places inaccessible to cattle, the peasant sometimes makes hay with crampons on his feet; grass is cut not three inches high, in some places, three times a year;

year; and in the vallies, the fields are seen shaven as close as a bowling-green, and all the inequalities clipped as with a pair of scissars. In Switzerland, as in Norway, for the same reasons, the art of mowing seems to be carried to its highest pitch of perfection. As, however, the improvement of the lands in the vallies must depend principally upon the manure arising from the stock; it is evident, that the quantity of hay and the number of cattle, will be mutually limited by each other; and as the population will of course be limited by the produce of the stock, it does not seem possible to increase it beyond a certain point, and that, at no great distance. Though the population, therefore, in the flat parts of Switzerland, has increased during the last century, there is reason to believe that it has been stationary, in the mountainous parts. According to M. Muret, it has decreased very considerably in the Alps of the Pays de Vaud; but his proofs of this fact have been noticed as extremely uncertain. It is not probable that the Alps are less stocked with cattle than they were formerly: and if the inhabitants be really rather fewer in number, it is probably owing to the smaller proportion of children, and to the improvement which has taken place in the mode of living.

In some of the smaller cantons, manufactures have been introduced, which, by furnishing a greater quantity of employment, and, at the same time, a greater quantity of exports for the purchase of corn, have, of course, considerably increased their population. But the Swiss writers seem generally to agree, that the districts where they have been established, have, upon the whole, suffered in point of health, morals, and happiness.

It is the nature of pasturage to produce food for a much greater number of people than it can employ. In countries, strictly pastoral, therefore, many persons will be idle, or at most be very inadequately occupied. This state of things naturally disposes to emigration, and has been a chief cause that the Swiss have been so much engaged in foreign service. When a father had more than one son, it would rarely

rarely happen, that some of the rest did not enrol themselves as soldiers, or emigrate in some other way.

It is possible, though not probable, that a more than usual spirit of emigration, operating upon a country, in which, as it has appeared, the preventive check prevailed to a very considerable degree, might have produced a temporary check to increase at the period when there was such a universal cry about depopulation. If this were so, it without doubt contributed to improve the condition of the lower classes of people. All the foreign travellers in Switzerland, soon after this time, invariably take notice of the state of the Swiss peasantry as superior to that of other countries. In a late excursion to Switzerland, I was rather disappointed not to find it so superior as I had been taught to expect. The greatest part of the unfavourable change might justly be attributed to the losses and sufferings of the people during the late troubles; but a part, perhaps, to the ill-directed efforts of the different governments to increase the population, and to the ultimate consequences even of efforts well directed, and for a time, calculated to advance the comforts and happiness of the people.

I was very much struck with an effect of this last kind, in an expedition to the *Lac de Joux* in the Jura. The party had scarcely arrived at a little inn at the end of the lake, when the mistress of the house began to complain of the poverty and misery of all the parishes in the neighbourhood. She said that the country produced little, and yet was full of inhabitants; that boys and girls were marrying who ought still to be at school; and that, while this habit of early marriages continued, they should always be wretched, and distressed for subsistence.

The peasant, who afterwards conducted us to the source of the Orbe, entered more fully into the subject, and appeared to understand the principle of population almost as well as any man I ever met with. He said, that the women were prolific, and the air of the mountains so pure and healthy, that very few children died,

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except from the consequences of absolute want; that the soil, being barren, was inadequate to yield employment and food for the numbers that were yearly growing up to manhood; that the wages of labour were consequently very low, and totally insufficient for the decent support of a family; but that the misery and starving condition of the greater part of the society did not operate properly as a warning to others, who still continued to marry and to produce a numerous offspring which they could not support. This habit of early marriages might really, he said, be called *le vice du pays*; and he was so strongly impressed with the necessary and unavoidable wretchedness that must result from it, that he thought a law ought to be made restricting men from entering into the marriage state before they were forty years of age, and then allowing it only with "*des vieilles filles*," who might bear them two or three children instead of six or eight.

I could not help being diverted with the earnestness of his oratory on this subject, and particularly, with his concluding proposition, which went far beyond even my ideas respecting the necessity of the preventive check. He must have seen and felt the misery arising from redundant population, most forcibly, to have proposed so violent a remedy. I found, upon inquiry, that he had himself married very young.

The only point in which he failed, as to his philosophical knowledge of the subject, was, in confining his reasonings too much to barren and mountainous countries, and not extending them into the plains; in fertile situations, he thought, perhaps, that the plenty of corn and employment might remove the difficulty, and allow of early marriages. Not having lived much in the plains, it was natural for him to fall into this error; particularly, as in such situations, the difficulty is not only more concealed from the extensiveness of the subject; but is in reality less, from the greater mortality, naturally occasioned by low grounds, towns, and manufactories.

On inquiring into the principal cause of what he had named the
predominant

predominant vice of his country, he explained it with great philosophical precision. He said, that a manufacture for the polishing of stones, had been established some years ago, which for a time had been in a very thriving state, and had furnished high wages and employment to all the neighbourhood; that the facility of providing for a family, and of finding early employment for children, had encouraged, to a great degree, early marriages; and that the same habit had continued, when, from a change of fashion, accident, and other causes, the manufacture was almost at an end. Very great emigrations, he said, had of late years taken place, but the breeding system went on so fast, that they were not sufficient to relieve the country of its superabundant mouths, and the effect was such as he had described to me, and as I had in part seen.

In other conversations which I had with the lower classes of people in different parts of Switzerland and Savoy, I found many, who, though not sufficiently skilled in the principle of population, to see its effects on society, like my friend of the *Lac de Joux*, yet saw them clearly enough, as affecting their own individual interests, and were perfectly aware of the evils which they should probably bring upon themselves by marrying before they could have a tolerable prospect of being able to maintain a family. From the general ideas which I found to prevail on these subjects, I should by no means say that it would be a difficult task to make the common people comprehend the principle of population, and its effect in producing low wages and poverty.

Though there is no absolute provision for the poor in Switzerland, yet each parish generally possesses some seignioral rights, and property in land, for the public use, and is expected to maintain its own poor. These funds, however, being limited, will of course often be totally insufficient, and, occasionally, voluntary collections are made for this purpose. But the whole of the supply being comparatively scanty and uncertain, has not the same bad effects as the parish rates of England. Of late years much of the common lands belonging to

parishes, has been parcelled out to individuals, which has, of course, tended to improve the soil and increase the number of people; but, from the manner in which it has been conducted, it has operated perhaps too much as a systematic encouragement of marriage; and has contributed to increase the number of poor. In the neighbourhood of the richest *communes*, I often observed the greatest quantity of beggars.

There is reason to believe, however, that the efforts of the Economical Society of Berne to promote agriculture were crowned with some success, and that the increasing resources of the country have made room for an additional population, and furnished an adequate support for the greatest part, if not the whole, of that increase which has of late taken place.

In 1764, the population of the whole canton of Berne, including the Pays de Vaud, was estimated at 336,689. In 1791, it had increased to 414,420. From 1764 to 1777, its increase proceeded at the rate of 2000 each year; and, from 1778 to 1791, at the rate of 3109 each year^a.

^a Beschreibung von Bern, vol. ii. p. 40.

C H A P. VIII.

Of the Checks to Population in France.

As the tables of mortality in France, before the revolution, were not kept with peculiar care, nor for any great length of time, and as the few, which have been produced, exhibit no very extraordinary results, I should not have made this country the subject of a distinct chapter, but for a circumstance attending the revolution which has excited considerable surprise. This is, the undiminished state of the population, in spite of the losses sustained during so long and destructive a contest.

A great national work, founded on the reports of the Prefects in the different departments, is at present in some state of forwardness at Paris, and, when completed, it may reasonably be expected to form a very valuable accession to the materials of statistical science in general. The returns of all the Prefects are not, however, yet complete; but I was positively assured by the person who has the principal superintendance of them, that enough is already known, to be certain, that the population of the old territory of France has rather increased than diminished during the revolution.

Such an event, if true, very strongly confirms the general principles of this work; and assuming it, for the present, as a fact, it may tend to throw some light on the subject, to trace, a little in detail, the manner in which such an event might happen.

In every country, there is always a considerable body of unmarried persons, formed by the gradual accumulation of the excess of the
number

number rising annually to the age of puberty, above the number of persons annually married. The stop to the further accumulation of this body, is when its number is such, that the yearly mortality equals the yearly accessions that are made to it. In the Pays de Vaud, as appeared in the last chapter, this body, including widows and widowers, persons who are not actually in the state of marriage, equals the whole number of married persons. But in a country like France, where both the mortality, and the tendency to marriage, are much greater than in Switzerland, this body does not bear so large a proportion to the population.

According to a calculation in an *Essai d'une Statistique Generale*, published at Paris in 1800, by M. Peuchet, the number of unmarried males in France between 18 and 50 is estimated at 1,451,063, and the number of males, whether married or not, between the same ages, at 5,000,000^a. It does not appear at what period exactly this calculation was made. The number of unmarried persons seems to be too great for any period after some years of the revolution had elapsed; and rather too small for the period before the revolution. Let us suppose, however, that this number of 1,451,063, expresses the collective body of unmarried males of a military age at the commencement of the revolution.

The population of France, before the beginning of the war, was estimated by the National Assembly, at 26,363,074^b; and there is no reason to believe that this calculation was too high. Necker, though he mentions the number 24,800,000, expresses his firm belief that the yearly births, at that time, amounted to above a million, and consequently, according to his multiplier of $25\frac{1}{4}$, that the whole population was nearly 26 millions^c; and this calculation was made ten years previous to the estimate of the National Assembly.

^a P. 32. 8vo. 78 pages.

^b A. Young's Travels in France, vol. i. c. xvii. p. 466. 4to. 1792.

^c De l'Administration des Finances, tom. i. c. ix. p. 256. 12mo. 1785.

Taking

Taking then the annual births at rather above a million, and estimating that rather above $\frac{1}{4}$ would die under 18, which appears to be the case from some calculations of M. Peuchet^a, it will follow, that 600,000 persons will annually arrive at the age of 18.

The annual marriages, according to Necker, are 213,774^b; but as this number is an average of ten years, taken while the population was increasing, it is probably too low. If we take 220,000, then 440,000 persons will be supposed to marry out of the 600,000 rising to a marriageable age; and consequently, the excess of those rising to the age of 18, above the number wanted to complete the usual proportion of annual marriages, will be 160,000, or 80,000 males. It is evident, therefore, that the accumulated body of 1,451,063, unmarried males, of a military age, and the annual supply of 80,000 youths of 18, might be taken for the service of the state, without affecting, in any degree, the number of annual marriages. But we cannot suppose that the 1,451,063 should be taken all at once, and many soldiers are married, and in a situation not to be entirely useless to the population. Let us suppose 600,000 of the corps of unmarried males to be embodied at once; and this number to be kept up by the annual supply of 150,000 persons, taken partly from the 80,000, rising annually to the age of 18, and not wanted to complete the number of annual marriages, and partly, from the 851,063 remaining of the body of unmarried males which existed at the beginning of the war.

It is evident, that, from these two sources, 150,000 might be supplied each year, for ten years, and yet allow of an increase in the usual number of annual marriages of above 10,000. It is true, that, in the course of the 10 years, many of the original body of unmarried males will have passed the military age; but this will be balanced, and, indeed, much more than balanced, by their utility in the married life. From the beginning, it should be taken into con-

^a Essai, p. 31.

^b De l'Administration des Finances, tom. i. c. ix. p. 255.

sideration,

sideration, that though a man of fifty be generally considered as past the military age, yet if he marry a fruitful subject, he may by no means be useless to the population; and in fact, the supply of 150,000 recruits each year, would be taken principally from the 300,000 males rising annually to 18, and the annual marriages would be supplied, in great measure, from the remaining part of the original body of unmarried persons. Widowers and bachelors of forty and fifty, who, in the common state of things, might have found it difficult to obtain an agreeable partner, would probably see these difficulties removed in such a scarcity of husbands; and the absence of 600,000 persons, would of course make room for a very considerable addition to the number of annual marriages. This addition in all probability took place. Many, among the remaining part of the original body of bachelors, who might otherwise have continued single, would marry under this change of circumstances; and it is known, that a very considerable portion of youths under 18, in order to avoid the military conscriptions, entered prematurely into the married state. This was so much the case, and contributed so much to diminish the number of unmarried persons, that, in the beginning of the year 1798, it was found necessary to repeal the law which had exempted married persons from the conscriptions; and those who married subsequently to this new regulation, were taken indiscriminately with the unmarried. And though after this, the levies fell, in part, upon those who were actually engaged in the peopling of the country; yet the number of marriages untouched by these levies might still remain greater than the usual number of marriages before the revolution; and the marriages which were broken by the removal of the husband to the armies, would not probably have been entirely barren.

Sir Francis D'Ivernois, who had certainly a tendency to exaggerate, and probably has exaggerated considerably, the losses of the French nation, estimates the total loss of the troops of France both

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by land and sea, up to the year 1799, at a million and a half^a. The round numbers which I have allowed, for the sake of illustrating the subject, exceed Sir Francis D'Ivernois's estimate by six hundred thousand. He calculates, however, a loss of a million of persons more, from the other causes of destruction attendant on the revolution; but as this loss fell indiscriminately on all ages and both sexes, it would not affect the population in the same degree, and will be much more than covered by the 600,000 men in the full vigour of life, which remain above Sir Francis's calculation. It should be observed also, that in the latter part of the revolutionary war, the military conscriptions were probably enforced with still more severity in the newly acquired territories, than in the old state; and, as the population of these new acquisitions is estimated at 5 or 6 millions, it would bear a considerable proportion of the million and a half supposed to be destroyed in the armies. And, although the law, which facilitated divorces to so great a degree, be radically bad, both in a moral and political view, yet, under the circumstance of a great scarcity of men, it would operate a little like the custom of polygamy, and increase the number of children in proportion to the number of husbands. In addition to this, the women without husbands do not appear all to have been barren, as the proportion of illegitimate births is now raised to $\frac{1}{7}$ of the whole number of births, from $\frac{1}{17}$ ^b, which it was before the revolution; and though this be a melancholy proof of the depravation of morals, yet it would cer-

^a Tableau des Pertes, &c. c. ii. p. 7. Monf. Garnier, in the notes to his edition of Adam Smith, calculates, that only about a sixtieth part of the French population was destroyed in the armies. He supposes only 500,000 embodied at once, and that this number was supplied by 400,000 more in the course of the war; and allowing for the number which would die naturally, that the additional mortality occasioned by the war, was only about 45,000 each year. Tom. v. note xxx. p. 284. If the actual loss were no more than these statements make it, a small increase of births would have easily repaired it; but I should think that these estimates are probably as much below the truth as Sir F. D'Ivernois's are above.

^b Essai de Peuchet, p. 28.

tainly contribute to increase the number of births; and as the female peasants in France were enabled to earn more than usual during the revolution, on account of the scarcity of hands, it is probable, that a considerable portion of these children would survive.

Under all these circumstances, it cannot appear impossible, and scarcely even improbable, that the population of France should remain undiminished, in spite of all the causes of destruction which have operated upon it during the course of the revolution, provided, that the agriculture of the country has been such, as to continue the means of subsistence unimpaired. And it seems now to be generally acknowledged, that, however severely the manufactures of France may have suffered, her agriculture has increased rather than diminished. At no period of the war, can we suppose, that the number of embodied troops exceeded the number of men employed before the revolution in manufactures. Those who were thrown out of work by the destruction of these manufactures, and who did not go to the armies, would of course betake themselves to the labours of agriculture; and it was always the custom in France for the women to work much in the fields, which custom was probably increased during the revolution. At the same time, the absence of a large portion of the best and most vigorous hands, would raise the price of labour; and as, from the new land brought into cultivation, and the absence of a considerable part of the greatest consumers^a, in foreign countries, the price of provisions did not rise in proportion; this advance in the price of labour would not only operate as a powerful encouragement to marriage, but would enable the peasants to live better, and to rear a greater number of their children.

At all times, the number of small farmers and proprietors in France was great; and though such a state of things be by no means favour-

^a Supposing the increased number of children, at any period, to equal the number of men absent in the armies, yet these children being all very young, could not be supposed to consume a quantity equal to that which would be consumed by the same number of grown up persons.

able

able to the clear surplus produce, or disposable wealth, of a nation; yet, sometimes, it is not unfavourable to the absolute produce, and it has always a most powerful tendency to encourage population. From the sale and division of many of the large domains of the nobles and clergy, the number of landed proprietors has considerably increased during the revolution; and as a part of these domains consisted of parks and chaces, new territory has been given to the plough. It is true, that the land tax has been not only too heavy, but injudiciously imposed. It is probable, however, that this disadvantage has been nearly counter-balanced by the removal of the former oppressions under which the cultivator laboured, and that the sale and division of the great domains, may be considered as a clear advantage on the side of agriculture, or, at any rate, of the gross produce, which is the principal point with regard to mere population.

These considerations make it appear probable, that the means of subsistence have at least remained unimpaired, if they have not increased, during the revolution; and a view of the cultivation of France in its present state, certainly rather tends to confirm this supposition.

We shall not, therefore, be inclined to agree with Sir Francis D'Ivernois, in his conjecture, that the annual births in France have diminished by one seventh during the revolution^a. On the contrary, it is much more probable, that they have increased by this number. The average proportion of births, to the population in all France, before the revolution, was, according to Necker, as 1 to 25 $\frac{1}{2}$ ^b. It has appeared in the reports of some of the Prefects which have been returned, that the proportion in many country places, was raised to 1 to 21, 22, 22 $\frac{1}{2}$, and 23^c; and though these proportions might, in some degree, be caused by the absence of a part of the population in the armies, yet I have little doubt that they are principally to be

^a Tableau des Pertes, &c. c. ii. p. 14.

^b De l'Administration des Finances, tom. i. c. ix. p. 254. ^c Essai de Peuchet, p. 28.

attributed to the birth of a greater number of children than usual. If, when the reports of all the Prefects are put together, it should appear, that the number of births has not increased in proportion to the population, and yet, that the population is undiminished; it will follow, either that Necker's multiplier for the births was too small, which is extremely probable, as from this cause he appears to have calculated the population too low; or that the mortality among those not exposed to violent deaths, has been less than usual, which, from the high price of labour, and the desertion of the towns for the country, is not unlikely.

According to Necker and Moheau, the mortality in France, before the revolution, was 1 in 30 or $30\frac{1}{4}$ ^a. Considering that the proportion of the population which lives in the country, is, to that in the towns, as $3\frac{1}{2}$ to 1^b, this mortality is extraordinarily great, caused, probably, by the misery arising from an excess of population; and from the remarks of Arthur Young on the state of the peasantry in France^c, which are completely sanctioned by Necker^d, this appears to have been really the case. If we suppose, that from the removal of a part of this redundant population, the mortality should have decreased from 1 in 30, to 1 in 35^e, this favourable change would go a considerable way in repairing the breaches made by war on the frontiers.

The probability is, that both the causes mentioned have operated in part. The births have increased, and the deaths of those remaining in the country have diminished; so that, putting the two circumstances together, it will probably appear, when the results of all the

^a De l'Administration des Finances, tom. i. c. ix. p. 255. Essai de Peuchet, p. 29.

^b Young's Travels in France, vol. i. c. xvii. p. 466.

^c See generally, c. xvii. vol. i. and the just observations on these subjects, interspersed in many other parts of his very valuable tour.

^d De l'Administration des Finances, tom. i. c. ix. p. 262. et seq.

^e If it should appear that the mortality among those remaining in the country has not diminished, it will be attributable to the greater proportion of infants, a circumstance noticed in reference to the Prussian table, in c. vi. of this book.

reports

reports of the Prefects are known, that, including those who have fallen in the armies, and by violent means, the deaths have not exceeded the births in the course of the revolution.

The returns of the Prefects are to be given for the year 9 of the republic, and to be compared with the year 1789; but if the proportion of births to the population be given merely for the individual year 9, it will not shew with precision the average proportion of births to the population during the course of the revolution. In the confusion occasioned by this event, it is not probable that any very exact registers should have been kept; but, from theory, I should be inclined to expect, that, soon after the beginning of the war, and at other periods during the course of it, the proportion of births to the whole population would be greater, than in 1800 and 1801. If it should appear by the returns, that the number of annual marriages has not increased during the revolution, the circumstance will be obviously accounted for by the extraordinary increase in the illegitimate births, mentioned before in this chapter, which amount, at present, to one eleventh of all the births, instead of one forty-seventh, according to the calculation of Necker before the revolution^a.

Sir Francis D'Ivernois observes, that "those have yet to learn the first principles of political arithmetick, who imagine that it is in the field of battle and the hospitals, that an account can be taken of the lives which a revolution or a war has cost. The number of men it has killed, is of much less importance than the number of children which it has prevented, and will still prevent, from coming into the world. This is the deepest wound which the population of France has received."—"Supposing," he says, "that, of the whole number of men destroyed, only two millions

^a Essai de Peuchet, p. 28. It is highly probable that this increase of illegitimate births occasioned a more than usual number of children to be exposed in those dreadful receptacles, *Les Hopiteaux des Enfants trouvés*, as noticed by Sir Francis D'Ivernois; but probably this cruel custom was confined to particular districts, and the number exposed, upon the whole, might bear no great proportion to the sum of all the births.

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“ had been united to as many females ; according to the calculation
 “ of Buffon, these two millions of couples ought to bring into the
 “ world twelve millions of children, in order to supply, at the age
 “ of thirty-nine, a number equal to that of their parents. This is
 “ a point of view, in which the consequences of such a destruction
 “ of men becomes almost incalculable ; because they have much
 “ more effect with regard to the twelve millions of children, which
 “ they prevent from coming into existence, than with regard to the
 “ actual loss of the two millions and a half of men, for whom
 “ France mourns. It is not till a future period, that she will be
 “ able to estimate this dreadful breach.”

And yet, if the circumstances on which the foregoing reasonings are founded, should turn out to be true, it will appear, that France has not lost a single birth by the revolution. She has the most just reason to mourn the two millions and a half of individuals which she may have lost, but not their posterity : because, if these individuals had remained in the country, a proportionate number of children, born of other parents, which are now living in France, would not have come into existence. If, in the best governed country in Europe, we were to mourn the posterity which is prevented from coming into being, we should always wear the habit of grief.

It is evident, that the constant tendency of the births, in every country, to supply the vacancies made by death, cannot, in a moral point of view, afford the slightest shadow of excuse for the wanton sacrifice of men. The positive evil that is committed, in this case, the pain, misery, and wide-spreading desolation and sorrow, that are occasioned to the existing inhabitants, can by no means be counterbalanced by the consideration, that the numerical breach in the population will be rapidly repaired. We can have no other right, moral or political, except that of the most urgent necessity, to exchange the

^a Tableau des Pertes, &c. c. ii. p. 13, 14.

lives

lives of beings in the full vigour of their enjoyments, for an equal number of helpless infants.

It should also be remarked, that though the numerical population of France may not have suffered by the revolution ; yet, that if her losses have been in any degree equal to the conjectures on the subject, her military strength cannot be unimpaired. Her population at present must consist of a much greater proportion than usual of women and children ; and the body of unmarried persons of a military age, must be diminished in a very striking manner. This, indeed, is known to be the case, from the returns of the Prefects which have already been received.

It has appeared, that the point at which the drains of men will begin essentially to affect the population of a country, is, when the original body of unmarried persons is exhausted, and the annual demands are greater than the excess of the number of males rising annually to the age of puberty, above the number wanted to complete the usual proportion of annual marriages. France was probably at some distance from this point, at the conclusion of the war ; but, in the present state of her population, with an increased proportion of women and children, and a great diminution of males of a military age, she could not make the same gigantic exertions which were made at one period, without trenching on the sources of her population.

At all times, the number of males of a military age in France, was small in proportion to the population, on account of the tendency to marriage^a, and the great number of children. Necker takes particular notice of this circumstance. He observes, that the effect of the very great misery of the peasantry, is, to produce a dreadful mortality of infants under three or four years of age ; and the consequence is, that the number of young children will always be in too

^a The proportion of marriages to the population in France, according to Necker, is 1 to 113, tom. i. c. ix. p. 255.

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great

great a proportion to the number of grown up people. A million of individuals, he justly observes, will, in this case, neither present the same military force, nor the same capacity of labour, as an equal number of individuals in a country where the people are less miserable^a.

Switzerland, before the revolution, could have brought into the field, or have employed in labour appropriate to grown up persons, one third more in proportion to her population, than France, at the same period.

It will be but of little consequence, if any of the facts or calculations which have been assumed in the course of this chapter, should turn out to be false. The reader will see, that the reasonings are of a general nature, and may be true, though the facts taken to illustrate them may prove to be inapplicable^b.

^a De l'Administration des Finances, tom. i. c. ix. p. 263.

^b Since I wrote this chapter I have had an opportunity of seeing the *Analyse des Procès Verbaux des Conseils Généraux de Département*, which gives a very particular, and highly curious account of the internal state of France for the year 8. With respect to the population, out of 69 departments, the reports from which are given, in 16, the population is supposed to be increased; in 42, diminished; in 9, stationary; and in 2, the active population is said to be diminished, but the numerical to remain the same. It appears, however, that most of these reports are not founded on actual enumerations; and without such positive data, the prevailing opinions on the subject of population, together with the necessary and universally acknowledged fact, of a very considerable diminution in the males of a military age, would naturally dispose people to think that the numbers, upon the whole, must be diminished. Judging merely from appearances, the substitution of a hundred children, for a hundred grown up persons, would certainly not produce the same impression, with regard to population. I should not be surprised, therefore, if, when the enumerations for the year 9 are completed, it should appear, that the population, upon the whole, has not diminished. In some of the reports, *l'aisance générale répandue sur le peuple*, and *la division des grands propriétaires*, are mentioned as the causes of increase; and almost universally, *les mariages prématurés*, and *les mariages multipliés par la crainte des loix militaires*, are particularly noticed.

With respect to the state of agriculture, out of 78 reports, 6 are of opinion that it is improved; 10, that it is deteriorated; 70 demand that it should be encouraged in general; 32 complain *de la multiplicité des défrichements*; and 12 demand *des encouragemens pour les défrichements*.

défrichements. One of the reports mentions, *la quantité prodigieuse de terres vagues mise en culture depuis quelque tems, et les travaux multipliés, au de la de ce peuvent exécuter les bras employés en agriculture*; and others speak of *les défrichements multipliés qui ont eu lieu depuis plusieurs années*, which appeared to be successful at first; but it was soon perceived, that it would be more profitable to cultivate less, and cultivate well. Many of the reports notice the cheapness of corn, and the want of sufficient vent for this commodity; and in the discussion of the question respecting the division of the *biens communaux*, it is observed, that "le partage en opérant le défrichement de ces biens, a sans doute produit une augmentation réelle de denrées, mais d'un autre côté, les vaines pâtures n'existent plus, et les bestiaux font peut-être diminués." On the whole, therefore, I should be inclined to infer, that though the agriculture of the country does not appear to have been conducted judiciously, so as to obtain a large *surplus* produce, yet that the *absolute* produce had by no means been diminished during the revolution, and that the attempt to bring so much new land under cultivation, had contributed to make the scarcity of labourers still more sensible. And if it be allowed, that the food of the country did not decrease during the revolution, the high price of labour, which is very generally noticed, must have operated as a most powerful encouragement to population among the labouring part of the society.

The land tax, or *contribution foncière*, is universally complained of; indeed, it appears to be extremely heavy, and to fall very unequally. It was intended to be only a fifth of the net produce; but, from the unimproved state of agriculture in general, the number of small proprietors, and, particularly, the attempt to cultivate too much surface in proportion to the capital employed, it often amounts to a fourth, a third, or even a half. The state of agriculture in France has never been such, as to yield a surplus produce in proportion to the gross produce, in any respect equal to what it yields in England; and, therefore, a land tax bearing the same relation to the gross produce, would cause a very different degree of pressure in the two countries. And, when property is so much divided, that the rent and profit of a farm must be combined, in order to support a family upon it, a land tax must necessarily greatly impede cultivation; though it has little or no effect of this kind, when farms are large, and let out to tenants, as is most frequently the case in England. Among the impediments to agriculture mentioned in the reports, the two great divisions of lands from the new laws of succession is noticed. The partition of some of the great domains would probably contribute to the improvement of agriculture; but subdivisions of the nature here alluded to, would certainly have a contrary effect, and would tend most particularly to diminish surplus produce, and make a land tax both oppressive and unproductive. If all the land in England were divided into farms of 201. a year, we should probably be more populous than we are at present; but, as a nation, we should be extremely poor. We should be almost without disposable revenue, and should be under a total inability of maintaining the same number of manufactures, or collecting the same taxes, as at present. All the departments demand a diminution of the *contribution foncière* as absolutely necessary to the prosperity of agriculture.

Of the state of the hospitals, and charitable establishments, of the prevalence of beggary,
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and the mortality among the exposed children, a most deplorable picture is drawn in almost all the reports. From which, we should at first be disposed to infer, a greater degree of poverty and misery among all the lower classes of people in general. It appears, however, that the hospitals and charitable establishments lost almost the whole of their revenues during the revolution; and this sudden subtraction of support from a great number of people who had no other reliance, together with the known failure of manufactures in the towns, and the very great increase of illegitimate children, might produce all the distressing appearances described in the reports, without impeaching the great fact of the ameliorated condition of agricultural labourers in general, necessarily arising from the acknowledged high price of labour, and comparative cheapness of corn; and it is from this part of the society that the effective population of a country is principally supplied. If the poor's rates of England were suddenly abolished, there would undoubtedly be the most complicated distress among those who were before supported by them; but I should not expect, that either the condition of the labouring part of the society in general, or the population of the country, would suffer from it. As the proportion of illegitimate children in France has risen so extraordinarily, as from $\frac{1}{47}$ of all the births to $\frac{1}{11}$, it is evident that more might be abandoned in hospitals, and more out of these die than usual, and yet a more than usual number be reared at home, and escape the mortality of these dreadful receptacles. It appears that, from the low state of the funds in the hospitals, the proper nurses could not be paid, and numbers of children died from absolute famine. Some of the hospitals, at last, very properly refused to receive any more.

The reports, upon the whole, do not present a favourable picture of the internal state of France; but something is undoubtedly to be attributed to the nature of these reports, which, consisting as they do of observations explaining the state of the different departments, and of particular demands with a view to obtain assistance or relief from government, it is to be expected that they should lean rather to the unfavourable side. When the question is respecting the imposition of new taxes, or the relief from old ones, people will generally complain of their poverty. On the subject of taxes indeed, it would appear as if the French government must be a little puzzled. For though it very properly recommended to the *conseils generaux* not to indulge in vague complaints, but to mention specific grievances, and propose specific remedies, and particularly not to advise the abolition of one tax, without suggesting another; yet all the taxes, appear to me, to be reprobated, and most frequently in general terms, without the proposal of any substitute. *La contribution fonciere, la taxe mobiliere, les barrieres, les droits de douane*, all excite bitter complaints, and the only new substitute that struck me, was a tax upon game, which, being at present almost extinct in France, cannot be expected to yield a revenue sufficient to balance all the rest. The work, upon the whole, is extremely curious, and as shewing the wish of the government to know the state of each department; and to listen to every observation, and proposal, for its improvement, is highly creditable to the ruling power. It was published for a short time, but the circulation of it was soon stopped, and confined to the

ministers,

ministers, *les conseils generaux*, &c. Indeed the documents are evidently more of a private than of a public nature, and certainly have not the air of being intended for general circulation.

For the state of population in Spain, I refer the reader to the valuable, and entertaining travels of Mr. Townsend, in that country, in which he will often find the principle of population very happily illustrated. I should have made it the subject of a distinct chapter, but was fearful of extending this part of the work too much, and of falling, almost unavoidably, into too many repetitions, from the necessity of drawing the same kind of inference from so many different countries. I could expect, besides, to add very little to what has been so well done by Mr. Townsend.

C H A P. IX.

Of the Checks to Population in England.

THE most cursory view of society in this country, must convince us, that throughout all ranks, the preventive check to population prevails in a considerable degree. Those among the higher classes, who live principally in towns, often want the inclination to marry, from the facility with which they can indulge themselves in an illicit intercourse with the sex. And others are deterred from marrying, by the idea of the expences that they must retrench, and the pleasures of which they must deprive themselves, on the supposition of having a family. When the fortune is large, these considerations are certainly trivial; but a preventive foresight of this kind, has objects of much greater weight for its contemplation as we go lower.

A man of liberal education, with an income only just sufficient to enable him to associate in the rank of gentlemen, must feel absolutely certain, that if he marry, and have a family, he shall be obliged, if he mix in society, to rank himself with farmers and tradesmen. The woman, that a man of education would naturally make the object of his choice, is one brought up in the same habits and sentiments with himself, and used to the familiar intercourse of a society totally different from that to which she must be reduced by marriage. Can a man easily consent to place the object of his affection in a situation so discordant, probably, to her habits and inclinations. Two or three steps of descent in society, particularly at this round of the ladder, where education ends and ignorance begins, will not be considered by the generality of people as a chimerical, but a real evil.

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If society be desirable, it surely must be free, equal, and reciprocal society, where benefits are conferred as well as received, and not such as the dependent finds with his patron, or the poor with the rich.

These considerations certainly prevent a great number in this rank of life, from following the bent of their inclinations in an early attachment. Others, influenced either by a stronger passion, or a weaker judgment, disregard these considerations; and it would be hard indeed, if the gratification of so delightful a passion as virtuous love, did not sometimes more than counterbalance all its attendant evils. But I fear that it must be acknowledged, that the more general consequences of such marriages are rather calculated to justify, than to disappoint, the forebodings of the prudent.

The sons of tradesmen and farmers, are exhorted not to marry, and generally find it necessary to comply with this advice, till they are settled in some business or farm, which may enable them to support a family. These events may not, perhaps, occur till they are far advanced in life. The scarcity of farms is a very general complaint; and the competition in every kind of business is so great, that it is not possible that all should be successful. Among the clerks in counting houses, and the competitors for all kinds of mercantile and professional employment, it is probable, that the preventive check to population prevails more than in any other department of society.

The labourer who earns eighteen-pence or two shillings a day, and lives at his ease as a singleman, will hesitate a little, before he divides that pittance among four or five, which seems to be not more than sufficient for one. Harder fare, and harder labour, he would perhaps be willing to submit to, for the sake of living with the woman that he loves; but he must feel conscious, that, should he have a large family, and any ill fortune whatever, no degree of frugality, no possible exertion of his manual strength, would preserve him from the heart-rending sensation of seeing his children starve, or of being obliged to the parish for their support. The love of independence.

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