

CHAPTER X

“MULTIPLY AND REPLENISH THE EARTH”

I HAVE spoken in these chapters of new lands to which man may go to support increased population. Let us see if these lands will suffice. One of the funniest stories of these times of ours is that written by Ellis Parker Butler, entitled *Pigs is Pigs*. It relates to the troubles of a rural expressman, who kept all the rules of the company as to taking care of a crate of prolific guinea-pigs, while unraveling the red tape of a dispute over the rate.

Long before the correspondence was ended, the office, the freight house, the platform and the surrounding city blocks were full of guinea-pigs. There was famine in all the things eaten by guinea-pigs. And the young pigs were arriving by Nature's own express line, in hourly consignments, each greater

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than the original one. In another month of such increase the guinea-pigs would have been knee-deep in the streets.

This humorous story illustrates strikingly the most wonderful, the most momentous fact about living things—embarked on our air-ship *Earth*—their tendency to multiply. In view of the fact that *we* are living things, that *we* have this same tendency to multiply, and that deck room is already very valuable, let us consider the so-called command, “Multiply and replenish the earth.”

The first plants and the first animals were one-celled little bags of protoplasm. The long-shaped ones pinched themselves in two in the middle, and each became two, and so on. The round ones shoved out arms like snails' horns, and these horns pinched off near the parent, and went off as independent organisms, and thus multiplied. Some threw out buds, which separated from the parent, or dropped off and lived on. Many peculiar ways of multiplication were developed—but

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the living things did what no non-living things had ever done—they multiplied. The most beautiful and most dreadful operation of life was set going.

When the higher plants developed they multiplied by fruits and seeds. They developed ways for these fruits and seeds to live over winter when the parent died, and to be scattered, and for the plant to persist by a thousand ways. And among these higher plants, the crucial fact of all facts—*sex*—developed. The young plant was made up of the union of the mother-cell and the father-cell—a new individual organism made of the union of cells from two parent individual organisms. Another fateful step!

The multiplication of the lower animals was accomplished—and still is—by ways quite similar in simplicity—splitting, budding and the like. And with animals as with plants, as soon as evolution produced species a little advanced above the lowest, the fact of sex developed—the greatest fact of life.

Among animals as well as among plants,

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save in the lowest forms, the new individual organisms is made up of the union of cells from two parent organisms. In this fact lies more of the mystery of life—heredity, variation, love—material, paternal, conjugal, platonic—jealousy, poetry, religion, the family, the clan, the state, the nation—a thousand million great things—than in any other fact in the universe.

The problems of sex should be studied, not sneered at; looked at reverently, not giggled at; faced soberly and respectfully, not blinked and hidden and dodged. For in the problems of sex lie the great riddles confronting all the passengers on the good ship *Earth*.

All animals and all plants multiply—or tend to do so—to the very limits of the capacity of the earth to give them food and space. Just now, I am not discussing this tendency in man—if it exists—I shall come to that later. But all other animals do, and all plants.

The smaller and simpler species multiply faster than do the larger and more complex. The elephant is thirty years old before it

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brings forth its first solitary young, while animalcules so small as to be microscopic are able to multiply from a single pair to the number of 170,000,000,000 in four days. Yet the elephant and the animalcule alike obey the imperative command to “multiply and replenish the earth”—just as fast and just as far as the earth’s conditions will permit. The oak tree is found almost all over the earth—though it increases more slowly than many other plants, it lives a thousand years. The smaller wheat plant, if given space and plant food, would spread all over the surface of the earth while the oak was getting ready to bear its first acorn—but the wheat plant does not occupy more of the decks of the good ship *Earth* than the oak, for all that—or would not if left unaided in the struggle. Both increase to the limits which their food and their enemies will allow.

That green rash which breaks out all over the decks of our good ship *Earth*, called vegetation, is then, composed of an innumerable host of warring plant-forms. Each tries

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to crowd the other out. The fittest survive. Some produce innumerable seeds, and trust to chance for the planting thereof. Some live by thorns. Some stick their seeds fast to animals. Some produce good fruit with hard seeds inside so that birds and animals will scatter them. The ones with the most successful tricks survive.

So with animals. Each multiplies to the limits allowed by its food-supply, and its diseases and its enemies.

There are always other animals whose existence and multiplication are at the expense of any animal in question. There are pests and parasites. And there is the question of getting food. If food is plenty, and enemies are scarce, and diseases and pests are absent, the animal increases—whether it be giraffe or dodo or sparrow. If the food is scarce, or the enemies successful, or the diseases and pests bad, the race decreases. There is always a tide in the affairs of animals and plants as in those of men—it either ebbs or flows. Sometimes it ebbs until a race is wiped out—like

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the fossil animals we read of and see in the museums: the dodo just spoken of, and the passenger pigeon which many people now living have seen, but which is no more. This ebbing and flowing of the racial tide is called a "moving equilibrium." It is like the tug of war when two sides pull at a rope—each side is always losing—or gaining—until one definitely wins.

Enemies keep the race from increasing—that is war.

Pests and diseases prey on the race and keep down its numbers—that is pestilence.

Food supply grows too small for the multiplied hosts and they starve—that is famine.

War, pestilence, famine! These are the genii with which Nature keeps her balance even between the warring species of both plants and animals. Without war, pestilence and famine, there is not one species which would not eventually ruthlessly crowd everything else off the earth, driven as they all are by the irresistible urge to multiply.

But man is an animal—is he exempt from

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the rule? Did God place him on this huge round *Zeppelin* of the skies, and decree that he, too, must multiply until the good ship *Earth* can no longer nourish him, and therefore unless he is decimated by war, he shall fall by the sickle of pestilence, and if he escapes war and pestilence, that poverty must destroy him by famine?

“Is this the thing the Lord God made, and
gave
To have dominion over land and sea?”

And is this the sort of “dominion” He gave?

War, pestilence and famine—these three are essential to the keeping in check of the multiplication of all plants and animals. War with the plants and animals which struggle with them for food and space and which prey upon them—for there are plants that prey upon other plants, and even on animals. Pestilence—which is merely the inroads of other plants and animals too small to be seen, and of weaknesses of constitution and their effects. Famine—which is the failure of a part of the species to get food.

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These three check all organisms in their conquering march to possess the earth. They *must* in the nature of things. For if war fail, and pestilence withhold its stroke, the myriads will grow so great that famine will come as a matter of course.

It is a law of nature. It applies to all living things, unless man be the solitary exception.

There have been those, like Malthus, Spencer and their school, who have insisted upon war, pestilence and famine among men as a part of the natural order owing to the tendency of human beings to multiply beyond the resources of the earth to afford them means of living.

There are many others who, lacking the fortitude to look the predicament of man squarely in the face, have said: "Oh! There's a way, and always will be a way for all men to live. Why, the state of Texas would support the entire population of the world, if it had to! Let's be optimistic!"

Others there have been, and of these Henry

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George is the best example, who, looking the case fairly in the face, have denied the tendency of the human race to multiply beyond the limits of subsistence, and Mr. George has even suggested that it does not increase in numbers in the long run at all. He denies that density of population has ever in the world up to this time necessarily produced poverty. And until it does so produce poverty he refuses to admit the inherent inevitability of the sweeping off of redundant population by either war or pestilence.

Men of the George school have made the strongest case which has been made against the argument that man, an animal, like all other living beings, tends to multiply, if given a chance, to the limits of subsistence. And their appeal to Divine justice, and their defense of God against His alleged detractors has been perhaps the most impressive of their appeals to the world.

“Has God,” they say, “more inhuman than the cruelest ship-owner, placed on the ship *Earth* a potential population which the sup-

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plies are inadequate to feed? Has He so arranged matters that if these human beings escape pestilence, and in obedience to the precepts of love refrain from killing one another, they must die of want? No blackguard on the water-front would do such a thing! God has not done it!"

In spite of the tremendous force of this argument, let us look at it. For there is tremendous force in the principle of multiplication, too. Let us first ask ourselves, Does the race tend to increase? And does it actually increase?

It has been pointed out that in the old nations—Egypt, Assyria, Babylon, Medo-Persia—there were immense populations. There were; but we have no means of determining what they were. There is no reason to believe, though, that they were as great as our populations of to-day—or that the increase the world over was ever so rapid as now. Within the past century, the world has come under observation to an unprecedented degree, and we

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know as never before what the roster of the passengers amounts to.

Gibbon calculates the population of the Roman Empire at its height at 120,000,000. The regions then included in the Roman Empire are now more than twice as populous. Five hundred years ago, Europe had probably about 50,000,000 people; she now has 380,000,000. North America has a population of 100,000,000 drawn from Europe and natural increase, in the main, which she has gained in a hundred years, save about 5,000,000.

Whatever may have been the state of knowledge in the past, there is now no lack of proof that the tendency of population is to increase. We can see a startling increase in our day.

This is an age in which famines are much less frequent than of old, and wars, while frequent, do not destroy such large populations as formerly. In the civilized nations sanitation and scientific progress are reducing disease to the point of greatly weakening the factor of pestilence in checking increase.

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In 1882, the total population of the world, according to statistics which while not exact, are reasonably so, was in round numbers 1,433,000,000. In 1907 it had increased to 1,606,000,000. The increase, in exacter figures, in the twenty-five years was 172,738,000.

Thus in twenty-five years, we passengers on the good ship *Earth* increased by more than the whole population of the western hemisphere! We grew in numbers by as many people as twice the population of the United States at the beginning of the period.

If it were really a ship, and the passenger list were growing at that rate, would you not feel anxious if you were on board and could not get off? And yet, that is the situation.

At this rate in twenty years from now, there will be 1,767,000,000 on board; in forty-five years, 1,943,000,000; in seventy years, 2,138,000,000; in five hundred years 10,000,000,000; and in six hundred years, we shall be making a growth in the number of people every quarter of a century, equal to the whole population of the globe in the year 1900!

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Some of you may have smiled at the idea I have developed that the warming of the climate of the earth by the carbonic acid gas in the air may, and probably will, bring into use as good farming countries millions of square miles now too cold. But if this increase keeps on, shall we not need it? And shall we not need to save the phosphorus and potash and nitrogen of the soil, and haul on all we can find, and save the washing of the soil, and conserve the forests, and look after the nitrates and the coal?

Does it not look as if the Malthusians and Spencerians are right? Are not war, pestilence and famine necessary? If they do not check this multiplication, what will?

After all, is not God mocked?

These things demand further consideration.

Increase of population is usually regarded as a good thing. We Americans are especially prone to think of a growing population as a great thing for the country. We strive to attract people to our states, our cities, our towns. We stuff local census

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figures sometimes to show growth even when we have had none. We hide our heads in shame when the statistics show a loss of population, or a gain supposed to be too small.

This excessive esteem for mere numerical increase arises from the fact that our deck room on the good ship *Earth* a hundred years ago was poor in people and rich in space which hungered for them. There were few passengers and much deck room. Life on board was poor and starved because there were so few people that they could not well help one another, nor build up a full and complete life. It is much better in most ways in America with a hundred millions than it was with five.

And it really has been in some way discreditable to an American state or city or town not to grow. It meant that the soil was poor, or the government was bad, or the people disagreeable. So shame is the proper feeling in the one case and regret in the other at the failure of population to increase.

But we must not get into the habit of thinking because the ship once had too few passen-

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gers on a part of the decks shut off from the others by water, and that a hundred years ago, that the steady increase of numbers on the part of the human race—the passengers on the great terrestrial air-ship *Earth*—is good, or a salutary thing, no matter what any one may say.

In the quarter of a century succeeding 1882 the population of the *Earth* increased one-eighth. At this rate, in five hundred years there will be ten billions of us. In six hundred years our increase every twenty-five years will be more than the whole number of us in 1882!

And there is every reason to believe that never in history were the passengers multiplying as fast as now.

It behooves us to consider what happens when populations get too dense.

Statistics show that Belgium is more thickly peopled than any other nation, but such statistics mean nothing. Belgium is mainly a cluster of cities, and a city is not self-sustaining. It is one end only of the equation, one

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member of the proportion. Belgium, Holland, Manhattan and the island of Great Britain are places where people are gathered together to do certain things; and those on farms, in ships, in railway cars, in wildernesses, and on sheep ranges and cattle ranches, and in forests, who are coworkers with these city dwellers to make up a complete industrial community, should be taken into account when density of population is reckoned.

Cheyenne, Wyoming, is densely populated, but the Cheyenne territory is sparse of settlers. When the crew of a ship gathers to furl the sails, the yards are thickly populated; but the ship may be undermanned. So, while Belgium, Holland, Great Britain, Manhattan and Cheyenne may some of them be overpopulated, they are not all so, and may none of them be. For they are the places where the passengers—who are also the crew—of the good ship *Earth* are gathered to work the vessel—for mutual aid and cooperation.

To find the places where the *Earth* is really over-populated, one must go to the Orient—to

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China, Japan, Korea and India. And here, where the population presses on subsistence, we find what we shall one day find in these dear states of ours, if the universal law of multiplication goes on unchecked. We find squalor unspeakable, misery indescribable, fear in the heart of every man, and four-fifths of the thoughts of every mind and of the utterances of every mouth related to food!

Extremes meet. When animal life began, it began in the ameba, an animal which was all stomach. And in the twentieth century, where human life has followed the line of animal increase to the very limit, man gravitates back to the point of losing “the upward looking and the light,” and becoming again a creature, eighty per cent. of whose intellectual activities are monopolized by the demands of his hunger. He has again become for all human purposes, an embodied stomach. In all the list of tragedies there is none so awful.

In these crowded spaces, meat is scarcely ever eaten, not because of any belief in veg-

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etarianism, but from the fact that more than five times as many people can be fed from the land with vegetable food as with meats. Flesh and blood are so cheap that they drive out steam and steel in such work as sinking piles and carrying burdens. Animals can not be used in tillage where men are so plentiful. A man will carry a ton of canal mud for fertilizer five hundred feet for three and a half cents. For this he can buy only eight eggs, or five ounces of pork—so it is clear that his life can not be supported on animal food at such wages. The three and a half cents will therefore be spent for ten ounces of potatoes, or six pounds of clover to be cooked and eaten, or two and a half pounds of beans, or a pound and a half of peanuts, or three pounds of shelled corn, or a pound of bean curd, or, as is, of course, usually the case, for a mixture of these.

“Incredibly small,” says Doctor Ross, “are the portions prepared for sale by the huckster. Two cubic inches of bean curd, four walnuts, five peanuts, fifteen roasted chestnuts, twenty

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melon seeds—make a portion.” No wonder that in six weeks he saw only one man reading—and *he* had fallen asleep over his book. No wonder that instead of asking a chance-met person how he makes his living, the Chinese asks, “How do you get through the day!”

No wonder that girl babies are exposed and allowed to die. Who shall say that this is not the truest mercy? No wonder that the chief magistrate of a Chinese city on being told that the infection of bubonic plague could be kept out, asked why it *should* be kept out, in view of the fact that there are too many people! The Chinese, their multiplication unchecked by the wars they have found out how to avoid, may be excused if they choose pestilence rather than famine.

I know that many readers will say that this poverty must come from the fact that the people are robbed by the aristocracy, or by the monopolies, or by the government, or that they do not make the best use of their resources—or that there is some other reason for this supremely dreadful condition of affairs than

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mere pressure of numbers on the possibilities of food production. If God is not to be accused of the supreme cruelty of placing more passengers on this good ship *Earth* than she can carry, then some other reason must be found for this poverty, you say?

That question—which carries us to the greatest of all human questions—must be glanced at hereafter. Just now it is well to remember that increase of population is the greatest evil by which the world is threatened.

Let us assume a pair of guinea-pigs in the Ark, and her voyage so long as to bring into play the forces that filled with young guinea-pigs the life and the vicinity of the hero of *Pigs is Pigs*.

This would have presented a puzzling problem to our grandsire Noah, would it not? We can imagine the venerable prophet troubled at the growing scourge of guinea-pigs. The provisions would have been inadequate for them.

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But suppose the Noah family themselves had so multiplied? Would the case have been any better than if the famine had come from guinea-pigs, lions, tigers or serpents? Would it not have been the worst case possible, if the increase had been in human beings? For guinea-pigs, lions, tigers or serpents could have been killed and thrown overboard—or eaten; while against the thinning out of the redundant passengers, there was set the commandment, “Thou shalt not kill.”

I have been trying to get some light on the very problem I have imagined as confronting the Noah family. For our good ship *Earth* seems to be in some of her decks already overpopulated—not with properly killable brute beasts, but with men and women and children. This over-population, I have suggested, is the cause of the poverty of the masses in China, Japan and other Oriental parts. Many readers protest, saying: “If poverty comes from the irresistible forces of nature urging living beings to multiply—forces which rule man as imperiously as brutes and plants, then why

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try to justify the ways of God to man, or to cure poverty? Why not let loose the dogs of war, and close the medical research laboratories and the health bureaus? Is it not better to keep the passengers thinned out by war, than for them to perish by pestilence? And is not quick decimation by pestilence better than that slow killing of the soul as well as the body which comes from poverty?"

These are questions which can not be evaded, but must be met. I hope to meet them fairly in good time.

The poverty of the masses in the Orient is full of awful interest to us—of awful warning and of a sort of fearful hope. It shows us the dread condition which comes from over-population—which is a matter for fear. It informs us of the long, long road we have to travel before we reach that point—which is food for hope—hope that we may on the journey find some way out of the toils of our own fecundity.

Those who say that such poverty as we Caucasians now suffer from is in no manner caused

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by over-population are right. We have in these United States still more than twenty acres for the sustenance of every person. In Japan there is but a third of an acre. Some Japanese, however, are supported by trade and manufactures, and draw their support from other acres than those of Japan. But in the Shangtung province of China, Doctor King found lands supporting 3,840 people of a strictly rural population to the square mile, or 240 to a forty-acre farm. The island of Chung-ming, with 270 square miles, has 3,700 people to the square mile, and only one large city any part of whose people could draw sustenance from outside the island. It is safe to say, therefore, that until our population doubles once or twice, such poverty as we have must be laid to other doors than that of the increase of population.

Even China and Japan may by collective governmental energy bring into use lands which the very agony of individual struggle for existence has not been able to utilize. Engineering and flood prevention may make room for

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tens of millions more in China. Mining of fertilizing rocks may increase crops, and again bring in exhausted and denuded areas. Japan, if all hillside lands with a slope of fifteen degrees or less are brought under tillage, may add sixty-five per cent. to her farmed acreage, and thus allow an increase of population to a hundred millions. But no discovery of science can, so far as can be seen, take from the soil what is not in it, nor enable agriculture to make food of anything but plants fed from the plant food in the soil. So that poverty is sure to recur, if the present birth-rate of these nations keeps up, no matter if the whole earth were theirs. They are not made poor by their oppressors, but by their birth-rate.

It might be possible to make some show of denial of this as to the Japanese; for they have most of the paraphernalia of industrial robbery and exploitation. But in the Hoang-Ho Valley of China, and especially in such fertile areas as the Chengtu plain, where from three to four thousand people live on each square mile, the law of the pressure of population on

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substance caused by redundancy of population is in stark, plain, full operation.

“Are not these people in some way robbed?” I asked of Professor E. A. Ross. “The percentage of production which goes to the non-producers,” said he, “can not be more than two or three per cent.” Wipe out even that small concession to parasitic hands, and the birth-rate would restore poverty in its original awfulness in a year. In his book, *The Changing Chinese*, he repeats this. “Nor,” says he, “is the lot of the masses due to exploitation. In the cities there is a sprinkling of rich, but out in the provinces one may travel for weeks and see no sign of a wealthy class—no mansion or fine country place, no equipage befitting the rich. There are great stretches of fertile agricultural country where the struggle for existence is stern and yet the cultivator owns his land and implements and pays tribute to no man.”

The long strife with nature for subsistence has stripped off even the parasite from the shoulders of these sober, honest and thrifty

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men. There is no surplus on which the non-worker can live. Farming is so perfect that even the greatest agricultural expert of our time, the late F. H. King, could see no way in which our science can materially help them. Our best agricultural practise seems barbarous compared with theirs. If good farming, good soil, feverish and unremitting industry, practical freedom from taxes, and the enjoyment of practically all the produce of their labor could keep them from poverty, these people would not be poor. Yet they are so poor that eight out of ten of their children die in infancy. The land can not support the increase.

So, while we need not yet lay any of our western poverty to pressure of population, we should remember that this awful evil seems to be approaching. Our population has grown from 38,000,000, in 1870, to 92,000,000; Japan's in the same time from 33,000,000 to 50,000,000; Russia's from 73,000,000 to 160,000,000; Germany's from 41,000,000 to 64,000,000; Great Britain's from 31,000,000 to 45,000,000; Italy's from 26,000,000 to 34,-

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000,000; Austria Hungary's from 35,000,000 to 51,000,000; while even France, whose population increases more slowly than that of any other nation, has grown from 36,000,000 to 39,000,000.

The urge to multiply bears man on to the same goal, apparently, as the sparrow and the worm—to the exhaustion of subsistence. Doctor W J McGee has made calculations that in three hundred years the United States will have acquired a population of a billion—and reached the limit. The limit means conditions like those in Chengtu. Let the passengers on the good ship *Earth* consider these things!