The Farmer's Advocate and Home Magazine

"Persevere and Succeed."

Established 1866.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

Vol. XLIII. LONDON, ONTARIO, JUNE 4, 1908. No. 819.

EDITORIAL

BACTERIA: INSIDIOUS, INNUMERABLE, DEADLY

Probably no word is more frequently on the lips of scientific lecturers, or in the pages of the scientific and scientifically agricultural publications, than the word "bacteria," and yet the number of people who have but the vaguest possible idea of what the term means is simply astounding. Too many, it would seem, have not enough imagination to realize anything they cannot see. Were bacteria as big as maggots, it would be a different matter. Then, what a gathering of the clans there would be to rout them out of existence! What! Maggots in our milk! Maggots in our wells! Maggots in the very water that percolates through the ground—maggots from cemeteries, and slops thrown on the ground, and from stables and privy pits! Horrors! Let us hold meetings—let us have solemn conclaves—let us up and at them, and exterminate them from our land!

But—to fight against things we can't see! What are you talking about? Let us sleep on! . . . . . And yet there was never anything in this world more true than that ill-cared-for milk and water—in fact, anything exposed to wrong conditions—is swarming, literally swarming, with organisms which may be injurious, malignant, carrying disease or death wherever they go, and all the more insidious because invisible.

It would be a good thing for people who are accustomed to leaving bacteria out of their calculations to look even once at these organisms through a microscope. There they may be seen, of all shapes and sizes, some oval, some rod-like, some spiral, twisting, twining, whirling, infinite in variety—plant-growths, it is claimed, yet wonderfully animal-like in their movements—truly an object-lesson sufficient to impress the reality of bacteria upon the incredulous forever. When it is known that most varieties double their numbers every twenty minutes, the wonder deepens. When the assurance comes that as many as 300,000 have been found upon the legs of a single house-fly, 800,000 upon the legs of a stable-fly, and 1,500,000 upon those of a single fly disporting itself about an unclean garbage pail, the necessity for action wherever bacteria are disposed to congregate must surely be apparent.

The conclusion is not to be jumped at, of course, that all bacteria are harmful. Some are beneficial, as, for example, the species that gives the good flavor to butter; the kind that causes the formation of vinegar, and that other which inhabits the nodules on the roots of legumes, and entraps the nitrogen from the air, to be built up into plant tissues. Others, again, such as disease "germs," are invariably pernicious, carrying death and destruction wherever they go. Yet others may be bad or good, according to the extent to which they are permitted to develop. For instance, if it were not for the species that causes putrefaction, dead animals would lie just as they fell from age to age; logs, also, would never decompose, nor leaves, nor refuse of any kind. Nothing would crumble down and become finally resolved into soft, rich mold, forming a seed-bed from which things of beauty might arise again to clothe the earth with perennial youth. Earth would, in fact, soon become a chaos, hideous, unlivable, smothering itself beneath its own debris. In so far, the germ of putrefaction is beneficial. It is only to be objected to when it gains entrance into places where it should not be; when it causes our milk to sour too soon, and our meat and butter, and eggs, which have not been used soon enough, to smell like a leak from a sulphuretted-hydrogen jar. Fifty years ago, how to prevent such catastrophes was a real problem. To-day, owing to scientific investigation into the nature of bacteria, we have the matter, or may have it, if we are careful, better in hand.

In the first place, it is necessary for us to know that bacteria develop most quickly in the dark, and in a moist, warm substance. When the cold is intense, they do not develop at all, a fact which has been taken advantage of in the use of ice for refrigerators, etc. In the bright sunshine they quickly die, hence it is necessary to admit as much sunshine as possible into our homes, and to expose milk vessels, etc., when not in use, to the full beams of the sun. In filth of any kind they luxuriate, and so, perfect cleanliness everywhere is absolutely necessary. It is not sufficient to make milk vessels, etc., look clean by washing them with an indifferently-clean dish cloth. They must be thoroughly washed, then sterilized by scalding, which invariably kills bacteria. Otherwise, enough organisms might be left in the seams of a milk can to pollute every drop of milk put into it.

Other preventives will suggest themselves; e.g., dust should not be permitted to accumulate; decaying masses of vegetables or leaves should never be tolerated either in cellar or yard; pure air should be kept circulating everywhere.

In regard to disease germs and their transmission, every year brings revelations. It is now known that water is one of the most active agencies in transmitting disease. Bacteria simply cannot be thoroughly filtered out of it, even by many miles of percolation through the soil; hence the greatest care should be taken everywhere to prevent excretions of any kind from entering it. Filth should always be burned, never thrown upon the ground, to be soaked into it by rains.

It has been customary to think that such diseases as typhoid fever are more common to the city than to the country, but no less an authority than Dr. Woods Hutchinson is responsible for the statement that the very contrary is now true. This he attributes to the fact that sanitary inspection is now exceedingly strict in all of the larger cities, whereas, in the rural districts, the shallow well and the vault privy—than which "a more ingenious combination for the dissemination of typhoid could hardly have been devised,"—are still common. . . . This danger may surely be lessened by the use of deep wells and dry-earth closets. "The cause of typhoid," Dr. Hutchinson continues, "is simplicity itself, merely drinking the excreta of someone else. The demon may be exorcised by an incantation of one sentence: Keep human excreta out of the drinking water."

Another prolific source of the spread of disease is the common house-fly. Flies revel in filth of any kind. Crawling over it, their hairy legs become laden with particles fairly reeking with pernicious bacteria. The next move is to fly into the house and walk over exposed food materials, leaving filthy bacteria with their terrible power of reproduction at every point of contact.

Now, approaching the beginning of the "fly season," is surely the time to begin a campaign against this danger by removing or turning manure in which flies may hatch out their larvæ; by keeping food vessels covered; by exercising scrupulous cleanliness everywhere; and by placing screen doors and windows at all openings. . . . Ceaseless vigilance is the price of immunity against bacteria and their agents.

FORAGE AND FODDER CROPS.

There are times in most districts of the country in which, from various causes, a shortage of summer food for farm stock, in the form of pasturage or fodder, or both, is experienced, more or less seriously reducing the financial returns from the product in the form of meat and milk, and also retarding the growth and development of young stock. Last year, owing to severe drouth in some sections, and to a sort of blight affecting the oat crop in others, the supply of stored fodder was from necessity early drawn upon, leaving hay for winter feeding very scarce, while all sorts of feed were so high in price that many farmers were constrained to part with much of their stock at less than half its usual value, in many instances practically giving them away. The general failure of the clover catch in these and other districts last year will tend to shorten the hay crop this year, and, owing to stock being turned out earlier than usual this spring because of the shortage of supplies in the barns, the pastures, unless favored with more than the average rainfall, will continue short throughout the summer, while, if a prolonged drouth should occur, the consequences may be serious. For the reasons here assigned, and to provide against such contingencies, which are liable to occur in any year, "The Farmer's Advocate" has persistently advised the culture, on a larger scale than usual, of corn, as the surest and most profitable substitute for the standard crops of hay and other fodder crops for summer feeding, and also for storing, in the form of ensilage or the dried and cured product for winter feeding. No other crop will produce nearly so large a bulk of palatable and nutritious stock food at the same cost, where it can be grown nearly to maturity; and when stored in the silo, it will keep in good condition indefinitely, so that, in case all that is stored be not needed for winter feeding, it may be drawn upon for summer feeding in a time of drouth, thus preventing a shrinkage in the milk flow of the dairy herd, or the loss of flesh in any class of cattle. Corn is, therefore, recommended as the most suitable crop for the supply in the case of a deficiency in other fodder crops, as well as a regular stand-by for cattle feeding, while it may also, to a very considerable extent, be utilized for other stock. For these reasons, we counsel the sowing of more and yet more corn.

Many farmers, while seeing the necessity of providing for the possible, and even probable contingency of a shortage of pasture and hay, may not have available land in suitable condition, or that can be made in suitable condition, this spring for growing a reasonably good crop of corn. There may, however, be a field on which the clover catch has failed to such an extent that it is hardly worth leaving for pasturage or for hay, but which might be utilized for growing a catch crop for forage—that is, for pasture—or, it may be, for soiling, by which is meant cutting and carrying, to be fed in the stable; or it may be for fodder, being cut and cured, by drying, for winter feeding. It is, perhaps, rather late in the season for sowing mixed grains for this purpose, though, with a good preparation of the seed-bed and favorable weather conditions, a seeding of mixed oats and peas, in the proportion of one of oats and two of peas, may produce a lot of good fodder, to be fed green, or cured for winter feeding. This mixture has given excellent results on many farms, as also have millet and Hungarian grass, a hot-weather class of fodder plants which may be sown to advantage any time in June or the early days of July on well-prepared land, and to be cut and cured as hay.