

SOME SANITARY ASPECTS OF BREAD MAKING.

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It is necessary, if one would understand the sanitary aspects of bread making, to fully comprehend the present theory held by scientists of germs and the part played by them in disease. The theory of disease germs is merely the name given to the knowledge had of those germs by medical men, a knowledge which is the result of innumerable experiments. Being this, the old term of a "theory" has become a misnomer. A germ of a disease is a plant, so small that I do not know how to express intelligibly to the general reader its lack of size. When this germ is introduced into the blood or tissues of the body, its action appears to be analogous to that which takes place when yeast is added to dough. It attacks certain elements of the blood or tissues, and destroys them, at the same time producing new substances.

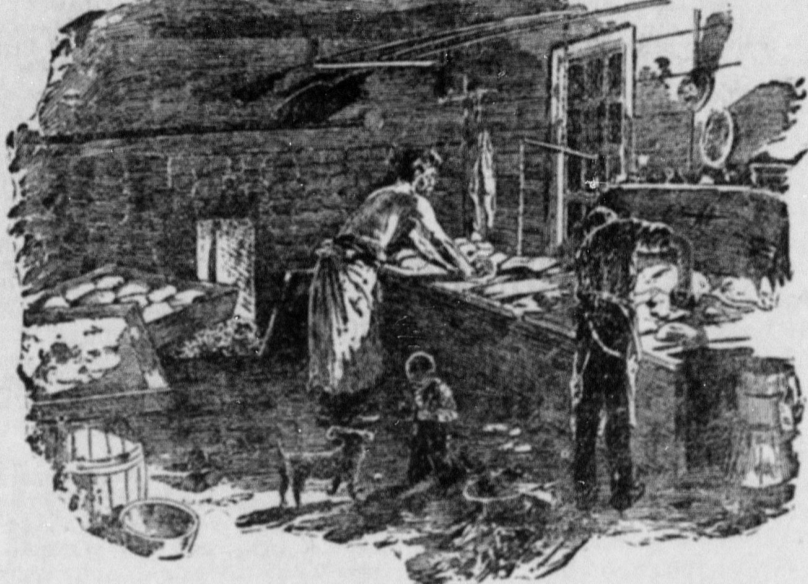
stance to be eaten is exposed to the air, the greater the chance that germs will be deposited on it. Bread raised with yeast is worked down or kneaded twice before being baked and this process may take anywhere from four hours to ten. It has, then, the chance of collecting disease germs during this process of raising and it has two periods of working down or kneading during each of which it may gather the dirt containing the germs from the baker's hands. As no bread save that raised with yeast, goes through this long process of raising and kneading so no bread save that raised with yeast has so good a chance of gathering germs. What is meant by "raising" bread is worth a few words. The introduction of the yeast into the moist dough and the addition of heat when the pan is placed near the fire produces an enormous growth of the yeast fungi—the yeast "germ," in other words. These fungi effect a destructive fermentation of a portion of the starchy matter of the flour—one of the most valuable nutrient elements in the flour.

produce carbonic acid gas, and having done this, disappear. Its leavening strength has been found superior to other baking powders, and as far as I know, it is the only powder which will raise large bread perfectly. Its use avoids the long period during which the yeast made dough must stand in order that the starch may ferment and there is also no kneading necessary. The two materials used in the Royal, cream of tartar and soda, are perfectly harmless, even when eaten. But they are combined in exact compensating weights, so that when chemical action begins between them they practically disappear, the substance of both having been taken up to form the carbonic acid gas. More than this, the proper method of using the powder insures the most thorough mixing with the flour. The proper quantity being taken, it is mixed with the flour and stirred around in it. The mixture is then sifted several times and this insures that in every part of the flour there shall be a few particles of the powder. The salt and milk or water being added, the dough is made up as quickly as possible and moulded into the loaves.

These are placed in the oven and baked. But the very moment the warmth and moisture attack the mixture of cream of tartar and soda, these two ingredients chemically combine and carbonic acid or leavening gas is evolved. The consequence may be seen at a glance, the bread is raised during the time it is baking in the oven, and this is the most perfect of all conceivable methods of raising it. Here, then, there is no chance for germs of disease to get into the dough and thence into the stomach, more than that the bread is necessarily as sweet as possible, there having been no time during which it could sour. This involves the fact that the bread so made will keep longer, as it is less likely to be contaminated by the germs that affect the souring process.

It will be strange if the crowds of visitors to the World's Fair do not greatly increase the number of contagious diseases, which we will have to treat. Under these circumstances it is not folly of follies to open a single channel through which these germs may reach us? Is it not the part of wisdom to watch with the greatest care all that we eat and drink, and to see that none but the safest and best methods are employed in the preparation of our food? To me it seems as though there could be but one answer to questions like these.

I have shown the danger of using the yeast raised bread, and with this I have shown how that danger may be avoided. The ounce of prevention which in this case is neither difficult nor expensive is certainly worth many pounds of cure, and the best thing about it is that it may be relied on almost absolutely. Those who eat bread or biscuits or rolls made at home with Royal baking powder may be sure they



"DISEASE GERMS FOUND THEIR WAY INTO THE YEAST BREAD."

But the germs of the greater part of the germ diseases, that is, of the infectious and contagious diseases, will develop or increase in number without being in the body of a human being, provided always you give them the proper conditions. These conditions are to be found in dough which is being raised with yeast. They are warmth, moisture and the organic matter of the flour on which the germs, after certain changes, feed.

It is necessary to remember at this point that yeast is germ growth, and when introduced into a mixture of glucose or starch, in the presence of warmth and moisture sets up a fermentation. If the mixture be a starchy dough the yeast first changes a portion of the starch into glucose and then decomposes the glucose by changing it into two new substances, viz., carbonic acid gas and alcohol.

Now the gluten, which is also a constituent of dough and moist starch, affords, with the latter, an excellent nidus for the development of germs of disease as well as for the yeast germs. The germs of cholera, as of typhoid fever, would, if introduced into dough, find very favorable conditions for their growth.

I do not wish to "pose" as an alarmist, nor am I willing to say there is very much chance of the germs of typhus and of cholera reaching the stomachs of the people who eat bread which has been raised with yeast. But I have not the slightest cause to doubt that other diseases have been and will be carried about in the bread.

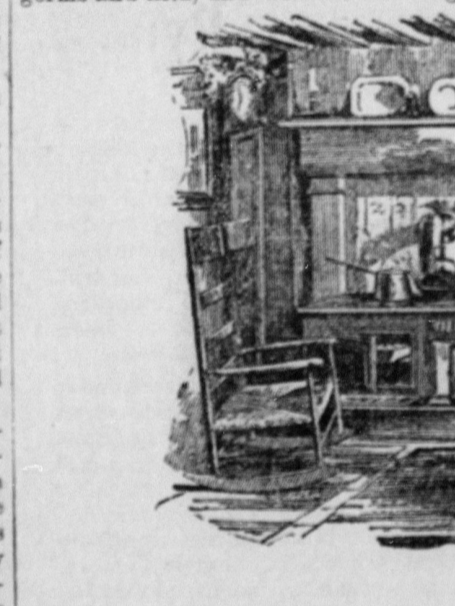
I have met journeyman bakers, suffering from cutaneous diseases, working the dough in the bread trough with naked hands and arms. I have no reason to suppose bakers are less liable to cutaneous diseases than any other men, and I know, as every housewife knows, yeast-raised bread must be worked a long time. This is an exceedingly objectionable thing from the standpoint of a physician for the reason that the germs of disease which are in the air and dust and on stairways and straps in street cars, are most often collected on the hands. Any person who has ever kneaded dough understands the way in which the dough cleans the hands. This is equivalent to saying that we must rely on heat to kill these germs, because it is almost certain that they will be there. Now, underdone or doughy bread is a form which every man and woman has seen.

It is a belief as old as the hills that underdone bread is unhealthy. This reputation has been earned for it by the experience of countless generations, and no careful mother will wish her children to eat bread that has not been thoroughly cooked. The reason given for this recognized unhealthfulness has been that the uncooked yeast dough is very difficult to digest. No one but a physician would be apt to think of disease germs which have not been killed during the process of baking as a cause of the sickness following the use of uncooked yeast bread. Yet this result from this cause is more than probable. I have not the slightest doubt that could we trace back some of the cases of illness which we meet in our practice we would find that germs collected by the baker have found their way into the yeast bread, that the heat has not been sufficient to destroy them, that the uncooked yeast bread has been eaten and with it the colonies of germs, that they have found their way into the blood and that the call for our services which followed, has rounded off this sequence of events.

I have already pointed out that the germs of disease are to be found in the air and dust. The longer any sub-

The fermentation produces carbonic acid gas, and this, having its origin in every little particle of the starch which is itself everywhere in the flour, pushes aside the particles of the dough to give itself room. This is what is called "raising the bread."

It needs but a glance to see that it is, in its effects on the dough, purely mechanical. The dough, which was before a close-grained mass, is now full of little holes, and when cooked in this condition is what we ordinarily call light. This porous quality of bread enables the stomach to rapidly and easily digest it, for the gastric juices quickly soak into and attack it from all sides. The fermentation of the dough, however, uses up a portion of the nutrient elements of the loaf. If it is possible, therefore, to produce a light porous loaf without this destruction and without the "kneading" process, which fills the dough with germs and filth, and without the long



BREAD WITHOUT YEAST—"THE MOST PERFECT OF ALL CONCEIVABLE WAYS OF RAISING IT."

period during which the raising process goes on, the gain in food and the gain in the avoidance of the germs is exceedingly plain.

But while we can easily see the dangers which attend the use of yeast it is certain that the vesiculating effect produced by it on the dough is to the last degree perfect. It is apparent that if we are to substitute any other system of bread making we must have one which will give us, first, mechanical results equally as good, that is, that will produce minute bubbles of carbonic acid gas throughout the mass of dough. Now it is in no way difficult to produce carbonic acid gas chemically, but when we are working at bread we must use such chemicals as are perfectly healthful. Fortunately these are not hard to find.

The evils which attend the yeast-made bread are obviated by the use of a properly made, pure and wholesome baking powder in lieu of yeast. Baking powders are composed of an acid and an alkali which, if properly combined, should when they unite at once destroy themselves and produce carbonic acid gas. A good baking powder does its work while the loaf is in the oven, and having done it, disappears. But care is imperative in selecting the brand of baking powder to be certain that it is composed of non-injurious chemicals. Powders containing alum or those which are compounded from impure ingredients, or those which are not combined in proper proportion or carefully mixed and which will leave either an acid or an alkali in the bread, must not be used.

It is well to sound a note of warning in this direction or the change from the objectionable yeast to an impure baking powder will be a case of jumping from the frying pan into the fire. The best baking powder made is, as shown by analysis, the "Royal." It contains absolutely nothing but cream of tartar and soda, refined to a chemical purity, which when combined under the influence of heat and moisture



THE MOST PERFECT OF ALL CONCEIVABLE WAYS OF RAISING IT.

have absolutely stopped one channel through which disease may reach them.

NOTE.—Housekeepers desiring information in regard to the preparation of the bread which, for sanitary reasons, Dr. Edson so strongly urges for general use, should write to the Royal Baking Powder Company, New York.

Russia's Vast Area.

One only gets an idea of the stupendous extent of Russian territory, and especially of Siberia, by comparisons. General Zabolotnik, chief of the engineering arm of the Russian navy, said, through his interpreter: "I am only stopping over to see the Exposition while on my way to inspect fortifications at Vladivostok, in Eastern Siberia, one of our outposts. I am making the trip by way of San Francisco and Yokohama. No, it is not a roundabout way. By taking this route I enjoy all the facilities of comfortable travel, with only a few days of discomfort from Yokohama. Should I attempt to go by the way of Russian territory, I could not make the return to St. Petersburg before next December. By the American route I see your Exposition, coming and going, and reach St. Petersburg in September."—Chicago Tribune.

A North Carolina Diamond.

A young lady near Weldon picked up what she thought to be a pretty little pebble near the Warren line. Captain Willis Cheek, of that place, saw the stone and purchased it. He sent it on to an expert in New York, and the jeweler there notified him that it was a genuine diamond of the first water. The captain paid the young lady full value for it in the rough, and then had it cut and set in a ring. His little daughter, Miss Ella, is now the proud owner of a diamond ring made of a gem picked up of North Carolina soil, in the old County of Halifax.—Raleigh (N. C.) News.

Russia produces 111,649 barrels of petroleum daily.

REV. DR. TALMAGE.

THE BROOKLYN DIVINE'S SUNDAY SERMON.

Subject: "Fireside Musing."

TEXT: "While I was musing the fire burned."—Psalm xxxix., 3.

Here is David, the psalmist, with the forefinger of his right hand against his temple, the door shut against the world, engaged in contemplation. And it would be well for us to take the same posture, closing the door against the world while we sit down in sweet solitude to contemplate. In a small island off the coast I once passed a Sabbath in delightful solitude, for I had resolved that I would do one day of entire quiet before I went upon autumnal work. I thought to have spent the day in laying out plans for Christian work, but instead of that it became a day of tender reminiscence. I reviewed my pastorate. I shook hands with an old departed friend, who had died in the night of the previous evening. The days of my boyhood came back, and I was 10 years of age, and I was 8, and I was 6. There was but one house on the island, and yet from Sabbath daybreak, when the quietude fell upon the evening twilight, into the bay, from shore to shore there were 10,000 memories, and the groves were a hum with voices that had long ago ceased.

Youth is apt too much to spend all its time in looking forward. Old age is apt too much to spend all its time in looking backward. People in middle age and on the apex look both ways. It would be well for us, I think, however, to spend more time in reminiscence. By the constitution of our nature we spend most of the time looking forward. You do not see the majority of people live not so much in the present as in the future. I find that you mean to make a reputation. You mean to establish yourself, and the advantages that you expect to achieve absorb a great deal of your time. But I see no harm in this if it does not make you discontented with the present or disqualify you for existing duties.

It is a useful thing sometimes to look back and to see the dangers we have escaped, and to see the sorrows we have suffered, and the trials and wearies of our earlier pilgrimage, and to sum up our enjoyments. I mean to-day, so far as God may help me, to stir up your memory of the past, so that in the review you may be encouraged and humbled and urged to pray. I was in Florence with a fresco by Guido. It was covered up with two inches of stucco until our American and European artists went there and after long toil removed the covering and retraced the fresco. And I am aware that the more we know of the past, the more we are able to do for the future with many of us, is all covered up with 10,000 obliterations, and I propose this morning, so far as the Lord may help me, to take away the covering, that the old picture may shine out again.

Let me show you a sheet all your past advantages and I want to bind in another sheet all your past adversities. It is a precious harvest, and I must be cautious how I swing the scythe.

Among the greatest advantages of your past life was an early home and its surroundings. The had men of the day, for the most part, dip their heated passions out of the boiling spring of an unhappy home. We are not surprised that Byron's heart was a concentration of sin when we hear that his mother was an angry woman and that she made sport of his infirmity and often called him "the lame brat." He who has vicious parents has to fight every inch of his way if he would maintain his integrity and at last reach the home of the good in heaven. Perhaps your early home was in the city. It may have been in the days when Canal street, New York, was far up town. That old house in the city may have been demolished or changed into stores, and it seemed like a sacrilege to you, for there was more in it than in the plain house, in that small house, than there is in a granite mansion or a turfed cathedral. Looking back this morning, you see it as though it were yesterday—the sitting room, where the loved ones sat by the plain lamp, the mother at the evening stand, the brothers and sisters, perhaps long ago gathered into the skies, then plotting mischief on the floor or under the table; your father with a firm voice commanding silence, that lasted half a minute.

Oh, those were good days! If you had your foot hurt, your mother always had a soothing salve to heal it. If you were wronged in the street, your father was always ready to protect you. The year was one round of frolic and mirth. Your earliest troubles were an April shower, more sunshine than shower. The heart had not been ransacked by troubles, nor had sickness broken it, and no lamb had a warmer shepherd than the home in which your childhood nestled.

Perhaps you were brought up in the country. You stand now to-day in memory under the old tree. You eluded it for fruit that was not quite ripe because you could not wait any longer. You hear the brook rumbling along over the pebbles. You step again into the river where your father in his shirt sleeves shouted to the lazy oxen. You frighten the swallows from the rafters of the barn and take just one egg and silence your conscience by saying they will not miss it. You take a drink again out of the very bucket that the oxen fetched up. You go for the cow at night and find them wagging their heads through the bars. Oftentimes in the dusty and busy streets you wish you were home again on that cool grass or in the hall of the farmhouse, through which there was the breath of new mown hay or the blossom of black-buck.

You may have in your windows now beautiful plants and flowers brought from across the seas, but not one of them stirs in your soul so much charm and memory as the old ivy on the wall, the snowflakes, the stone sentinels along the garden walk and the forget-me-nots playing hide and seek mid the long grass. The father, who used to come in sunburned from the fields and sit down on the doormat and wipe the sweat from his brow, may have gone to his everlasting rest. The mother who used to sit at the door a little bent over, cap and spectacles on, her face mellowing with the vicissitudes of many years, may have put down her gray head on the pillow in the valley, but forget that home you never will.

Have you thanked God for it? Have you rehearsed all these blessed reminiscences? Oh, thank God for a Christian father. Thank God for a Christian mother. Thank God for an early Christian altar at which you were taught to kneel. Thank God for an early Christian home.

I bring to mind another passage in the history of your life. The day came when you set up your own household. The days passed along in quiet happiness. You went out in the table morning and night and talked over your plans for the future. The most significant affair in your life became the subject of mutual consultation and advisement. You were so happy you felt you never could be any happier. One day a dark cloud hovered over your dwelling, and it got darker and darker. But out of that cloud the shining messenger of God descended to incarnate an immortal spirit. Two little feet started on an eternal journey, and you were to lead them. A gem to flash in heaven's coronet, and you to polish it. Eternal ages of light and darkness watching the starting out of a newly created being. You rejoiced and you trembled at the responsibility that in your possession an immortal treasure was placed. You prayed and rejoiced, and wept and wondered, and prayed and rejoiced, and wept and wondered. You were earnest in supplication that you might lead it through life into the kingdom of God. There was a tremor in your earnestness. There was a double interest about that home. There was an additional interest why you should stay there and be faithful, and when in a few months your house was filled with the music of the child's laughter, you were taught to kneel, right before you had a stupendous mission.

Is your home as much to you as it used to be? Have those anticipations been gratified? God help you to-day in your solemn reminiscence. How long have you fall upon your soul if your kindness has been ill requited? I have mercy on the parent on the wrinkles of whose face is written the story of a child's sin! God have mercy on the mother who in addition to her own pangs has the pang of a child's iniquity. Oh, there are many, many sad sounds in this sad world, but the saddest sound that is ever heard is the breaking of a mother's heart! Are there any here who remember that in that home they were unfathered? Are there those who wandered off from that early home and left the mother to die with a broken heart? Oh, I stir that reminiscence to-day!

I find another point in your life history. You find one day you were in the wrong road; you could not sleep at night. There was just one word that seemed to sob through your banking house, or through your office, or your shop, or your bedroom, and that word was "eternity." You said: "I am not mad. O God, have mercy on me." The Lord heard. Peace came to your heart. You remember how your hand trembled as you took the cup of the holy communion. You remember the old minister who consecrated it, and you remember the thanksgiving that followed it through the aisle. You remember the old people who at the close of the service took you in their arms in congratulating sympathy, as much as to say, "Welcome home, you lost prodigal, and tonight those hands have all withered away; that communion Sabbath is resurrected to-day. It is resurrected with all its prayers and songs and tears and sermons and transfiguration. Have you kept those vows? Have you been a backslider? God help you! But these reminiscences reach out their arms for heaven. Start to-day as you started then. I rouse your soul by that reminiscence.

But I must not spend any more of my time in going over your room, and addressing his attention on St. Helena beside Mrs. Judson's dying reminiscence in the harbor of St. Helena—20 years after Napoleon's dying reminiscence was one of delirium as he exclaimed, "Head of the army!" Mrs. Judson's dying reminiscence is as she came home from her missionary toil and her life of self-sacrifice for God, dying in the cabin of the ship in the harbor of St. Helena, was, "I always did love the Lord Jesus Christ." And then, the historian says she fell into a sound sleep for an hour and woke amid the songs of angels.

I place the dying reminiscence of Augustus Caesar against the dying reminiscence of the Apostle Paul. The dying reminiscence of Augustus Caesar was, addressing his attendants, "Have I played my part well on the stage of life?" and they answered in the affirmative, and he said: "Why, then, don't you applaud me?" The dying reminiscence of Paul the Apostle was: "I have fought a good fight, I have finished my course, I have kept the faith. Henceforth there is laid up for me a crown of righteousness, which the Lord, the righteous Judge, will give me in that day, and not to me only, but to all them that love His appearing."

Augustus Caesar died amid pomp and great surroundings. Paul uttered his dying reminiscence looking up through the roof of a dungeon. God grant that our dying pillow may be the closing of a useful life and the opening of a glorious eternity. You went to your room, and you said: "God save my child! God, save my child!" The world seemed going out in darkness. You said, "I cannot bear it, I cannot bear it!" You felt as if you could not put the lashes over the bright eyes never to see them again sparkle. Oh, if you could have had the hand of the Lord in your arms and with it heaped into the grave, how gladly you would have done it! Oh, if you could let your property go, your houses, your land and your storehouse go, how gladly you would have allowed them to depart if you could have kept that one treasure!

But one day there arose from the heavens a child blast that swept over the bedroom, and instantly all the light went out, and there was darkness—dark, murky, impenetrable, shuddering darkness. But God did give you there. Mercy spoke. As you were about to put that cup to your lips God said, "Let it pass," and forthwith as by the hand of angels, another cup was put into your hands. It was the cup of God's consolation. And as you have sometimes lifted the head of a wounded soldier and poured wine into his lips, so God puts His left arm under your head, and with His right hand He pours into your lips the wine of His comfort and His consolation, and you looked at the empty cradle and looked at your own heart and you looked at the Lord's chastisement, and you said, "Even so, Father, for so it seemeth good in Thy sight."

Ah, it is your first trouble. How did you get over it? God comforted you. You have been a better man ever since. In the jar of the closing gate of the sepulcher you heard the changing of the opening gate of heaven and you felt an irresistible drawing heavenward. You have been purer and holier of heart since that night when the little one for the last time put its arms around your neck and said: "Good night, papa. Good night, mamma. Meet me in heaven."

But I must come on down to your later sorrow. What was it? Perhaps it was the tick of the watch on the stand disturbs you. Through the long, weary days you counted the figures on the carpet or the flowers in the wall paper. Oh, the weariness and exhaustion! Oh, the burning pang of your heart and you were morning, would God it were night, were your frequent cry. But you are better—perhaps even well. Have you thanked God that to-day you can come out in the fresh air; that you are in this place to hear God's name, and to sing God's praise, and to implore God's help, and to ask God's forgiveness? Bless the Lord who healeth all our diseases and redeemeth our lives from destruction.

Perhaps your last sorrow was a financial embarrassment. I congratulate some of you on your lucrative profession or occupation, on ornate apparel, on a commodious residence—everything you put your hand to seems to turn to gold. But there are others of you who are like the ship on which Paul sailed, where two seas met, and you were buffeted by the violence of the waves. By an unadvised indorsement, or by a conjunction of unforeseen events, or by fire or storm, or a senseless panic, you have been sunk headlong, and where you once dispensed great charities now you have hard work to make the two ends meet.

Have you forgotten to thank God for your days of prosperity, and that through your trials some of you have made investments in this world has exploded, and the silver and gold are molten in fires of a burning world? Have you, amid all your losses and discouragements, forgot that there was bread on your table this morning and that there shall be a shelter for your head from the storm; that there is air for your lungs and blood for your heart and light for your eye and a glad and glorious and triumphant religion for your soul?

Perhaps your last trouble was bereavement. That heart which in childhood was your refuge, the parental heart, and which has been a source of the quickest sympathy ever since, has suddenly become silent forever. And now sometimes when ever in sudden annoyance and without deliberation you say, "I will go and tell mother," the thought flashes on you, "I have no mother." Or the father, with voice less tender, but at heart as earnest and loving—watchful of all your ways, exultant over your success without saying much, thoughtful the old people do over by themselves—is taken away forever.

People looked down, and they saw it was only a few feet deep and a few feet wide, but to you it was a chasm down which went all your hopes and all your expectations. But cheer up in the name of the Lord Jesus Christ, the comforter. He is not going to forsake you. Did the Lord take that child out of your arms? Why, He is going to shelter it better than you could. He is going to array it in a white robe and give it palm-branch and have it all ready to greet you at your coming home. Blessed the broken heart that Jesus heals. Blessed the impotent cry that Jesus compassions. Blessed the weeping eye from which the soft hand of Jesus wipes away the tear.

Some years ago I was sailing down the St. John river, which is the Rhine and the Hudson commingled in one scene of beauty and grandeur, and while I was on the deck of the steamer a gentleman pointed out to me the places of interest, and he said, "All this is interval land, and it is the richest land in all the provinces of New Brunswick and Nova Scotia."

"What," said I, "do you mean by interval land?" "Well," he said, "the land is submerged for a part of the year. Spring freshets come down, and all these plains are overflowed with the water, and the water leaves a rich deposit, and when the waters are gone the harvest is abundant. It is the richest harvest that was ever reaped." And I instantly thought, "It is not the heights of the church and it is not the heights of this world that are the scenes of the greatest prosperity, but the soul over which the floods of sorrow have gone, the soul over which the freshets of tribulation have torn their way, that yields the greatest fruits of righteousness, and the largest harvest for time, and the richest for eternity." Bless God that your soul is interval land!

But I must not spend any more of my time in going over your room, and addressing his attention on St. Helena beside Mrs. Judson's dying reminiscence in the harbor of St. Helena—20 years after Napoleon's dying reminiscence was one of delirium as he exclaimed, "Head of the army!" Mrs. Judson's dying reminiscence is as she came home from her missionary toil and her life of self-sacrifice for God, dying in the cabin of the ship in the harbor of St. Helena, was, "I always did love the Lord Jesus Christ." And then, the historian says she fell into a sound sleep for an hour and woke amid the songs of angels.

An Emperor at the Plow.

In order to emphasize the importance of the cultivation of the soil and to encourage his subjects to follow agricultural pursuits, the Emperor of China sometimes performs certain rites at the "Emperor's Field" and goes through the form of plowing and other work of the husbandman. One day recently the Emperor set out at daybreak from his palace, with a numerous and magnificent train of courtiers and others. Before breakfast the Emperor arrived at the shrines of the deity presiding over agriculture, and his majesty stopped to offer up his thanksgiving and sacrifices. After changing his dress, the morning repast was served, at the end of which the Emperor proceeded to the field, at the four corners of which were erected four pavilions, where the seeds of wheat and other cereals were placed.

In the center were numbers of magnificently attired courtiers, each holding aloft a many-colored flag, while on the side of the passage were scores of aged and white-haired farmers, each having in his hand some agricultural implement. Placing his left hand on the plow and holding the whip in his right hand the Emperor began the ceremony of the occasion. By prearrangement the officers did their allotted share, some wielding the agricultural implements, while others scattered seeds out of the baskets as if sowing, while the Emperor was busied with the plow, which was hitched to a richly caparisoned bullock draped in yellow and led by two of the Emperor's body guards. On the Emperor finishing his round at the plow the three princes were ordered to go through the performance, and after them nine high courtiers had their turn.—Fall Mail Budget.

Hardships of Life in the Polar Region.

The whole region is one of severe cold, and the sea is frozen for the greater part of the year, land and water becoming almost indistinguishable, but for the incessant movement and drift of the sea ice, says McClure's Magazine. In summer the sea ice breaks up into floes which may drift away by the wind against the shores of continents or islands, leaving lanes of open water which a shift of wind may change and close in an hour. Icebergs launched from the glaciers of the land also drift with the tide, current and wind through the more or less open water. Possibly at some times the pack may open and a clear waterway run through to the pole, and old whalers tell of many a year, when they believed that a few days' steaming would carry them to the end of the world, if they could have seized the opportunity.

At other times routes traversed in safety time after time may be effectively closed for years, and all advance barred. Food in the form of seals or walrus in the open water, reindeer, musk ox, polar bears or birds on the land, may often be procured, but these sources cannot be relied upon. Advance northward may be made by water in a ship, or by dog-sledge, or on foot, over the frozen snow or ice. Each method has great drawbacks. Advance by sea is stopped when the young ice forms in autumn, and land advance is hampered by the long Arctic night which enforces months of inaction, more trying to health and spirits than the severest exertion.