# HOW SOAP IS MADE.

Many People May Not Understand the Process of Manufacture of this Article of Everyday Use.

A Visit to the Sunlight Soap Works in Toronto, the Largest in Canada.

Through the Courtesy of Lever Brothers, Limited, Our Reporter is Shown Through the Establishment Where the Soap for Millions of Homes is Made -One of the Greatest Manufacturing Plants on the Continent-Continuous Chemical Tests as Precaution Against Impurity or Imperfection in the making of Sunlight Soap-Every Detail Explained-Meals for Employes are Cooked by Electricity-Other Observations of Interest to our Readers.

and one of the greatest soap manufacturing plants on the continent, has been erected in Toronto on the banks of the Don river by Lever Brothers Limited The enviable tribute to the excellence of the plant is the voluntary statement of an eminent insurance authority, who described the works as "the finest soap factory on the American continent to-day." Some idea of the immensity of the plant may be gathered from the fact that its capacity is about half a million octagon bars of Sunlight Soap a week.

The fact that so little is known about the making of what is the most popular the factory the other day. The numerous buildings which comprise the works appear from the outside in striking contrast to the majority of factories. Instead of a single mass, many stories and over again in the process of manuhigh, there are several buildings, spread facturing. over a considerable area, Lever Brothers Limited, owning 23 acres of ground in the vicinity. The buildings themselves were erected not merely with a view to economy of space, but show little degree of beauty. The office building, which is the most northerly one of the group, is built of cream hy-draulic pressed brick and stone.

# A WONDERFUL ORGANIZATION.

Every Provision for Health and Comfort of Employes.

had explained to me the details of the soap-making art. Before the factory proper was visited a pleasant half hour was spent in what is really a very fine two rows of nimble-fingered women, office building. The manager's office who put them in their cardboard cases. and the other rooms of the countinghouse are large, bright and airy, and are finished in beautifully polished mahogany, while the desks and fittings are in keeping with the general magnificence

apartments, one of which is fitted up as a meeting hall for the employes. Owing to the somewhat isolated position of the works, many of the employes do not go home for their mid-day meal. Two dining-rooms have been provided by the management, one for the office staff and another for the works. Instead of bringing cold lunches, they form a dinner club and have a hot meal each day, the company supplying the cooking utensils and dishes, and also furnishing the electricity for the cooking. To the majority of people cooking by electricity seems as remote as the general use of flying machines, but here the system may be seen in full operation. Pots, grills, kettles and other utensils are connected by electric wires, and the results accomplished by the Sunlight cook are declared to be more satisfactory than can be secured with assistance of a first-class range. The conveniences given free by the management enable the clerks and other help to secure a good daily meal at the trifling cost of 60 cents a week. The day I visited the works the bill-of-fare was: Soup, roast beef, two kinds of vegetables, bread and butter, tea and coffee, and mines pie.

### IN THE FACTORY.

Clean and Pleasant-an Atmosphere of Purity.

The general impression is that the odor of a soap works is about as evil as that from a glue factory, and when we reached the factory proper I was immediately struck with the clean, pleasant smell that pervaded the building. When I mentioned what was in my mind my guide smilingly explained that that was a compliment that all visitors, perhaps unknowingly, pair to Sunlight Soap. Nothing but the purest vegetable Nothing but the purest vegetable oils and edible fats, he explained, were used in the manufacture of Sunlight. The result is that the raw materials are just as wholesome to the nostrils as the octagon bars of Sunlight Soap, which are used in millions of homes i all parts of the world.

How Sunlight Soap is Made.

A climb of three flights of stairs brought us to the top floor of the building, which is known as the boilingroom. A glass roof admits plenty of light, and everything is as clean as the home of a thrifty housewife. Down the middle of the room was a row of immense pans, with a capacity of 60 tons These pans were in active operation at the time of my visit, and as I leaned over the huge crater of boiling, seething soap, I could not detect the slightest offensive odor. The oils and fats are contained in storage tanks located in the basement. These tanks feed the boiling pans by the system of

The largest soap factory in Canada, pipes without the raw ingredients have cardboard boxes, in which the soap is ing to be touched by the hand. In fact, the Sunlight plant is so perfect that the raw material is scarcely touched by an employe until the octagon bars are ready to be wrapped up for

> where I saw the bottom of the pans which come down several feet below the upper floor. Under each boiling pan is another large tank, into which the residue, after making Sunlight Soap, is allowed to flow and settle, the residue being composed of salt and glycerine. This material is taken from here to the glycerine distillery, where after a complicated chemical it is split up into its component parts of glycerine and salt. The glycerine is eventually purified to stand all the tests of the British pharmacopeia. The salt, which has passed through its course in the manufacture of the soap, is taken out again as pure as it originally entered and sent straight back to the boiling-room, where it is used over

We next visited the frame-room, which is covered overhead by long, sloping chutes fitted with little trap-Under each of these doors is a steel case, into which the scap is allowed to flow and cool. One of these cases was opened up, revealing a solid mass of Sunlight, weighing fifteen hun-

dredweight. A machine fitted with a series of wires is run over to the mass and cuts the soap into slabs weighing about seventy pounds each. Another dexterous machine cuts these slabs into octagon bars, which are carried by workdepartments of the establishment. Here I was escorted through the works, and another wonderful machine stamps the octagon bars with the trade mark of Sunlight, and at the same time with

> At this point my guide pointed out to me that from the moment the various substances used in making the soap had been poured into the tanks, on the top floor, Sunlight had moved downward and eastward, without having been carried back a single foot. Now it had only to be moved a few feet farther eastward to the capacious ship. ping-room, where hundreds of boxes stood ready to be sent on the following morning to all parts of the country. In addition to the tiers and tiers of cases containing Sunlight, I noticed many cases of well-known goods manufactured by Lever Brothers, Limited. 'Monkey Brand Scap-Won't Wash Clothes" was a familiar sign, while a huge pile of cases containing Lifebuoy Disinfectant Soap indicated the popularity of that widely-known disinfectant soap. Levers' Dry Soap (a pow-der), and Levers' Y. Z. (wise head) Disinfectant Soap Powder were also in evidence. Two railway sidings have been laid within a few feet of the shipping house doors.

PRINTING DEPARTMENT.

Up-to-date in Everything Beautiful Sunlight Souvenirs Sent Free.

Having followed the course of Sunlight until it was ready for shipment, we retraced our steps, and my guide showed me a number of special departments in connection with the plant. To the left of the framing-room, we entered the printing department. Here a large staff was engaged in preparing

packed, and in getting out other Sunlight literature. A press of the most modern design was printing Sunlight wrappers in two colors at the one impression, while another press was turning out some splendid half-tone work. which is to be used in a Sunlight souvenir. These valuable souvenirs will be mailed free to anybody sending their address to Lever Brothers, Limited, To-

We next visited the wood box factory, where further mechanical wonders were revealed to me. The printing press that printed two colors was surpassed by a heavier machine, which stamped several words in black and red at the rate of 40 to a minute on thick pieces of wood. Another machine dovetailed the ends of these boards, while a third drove four of the pieces together, forming the sides of a box. The last stage was the putting on of the bottom, which was done with a mechanical "nailer," which drove in eight nails at a time. The whole operation occupied a much less time than it would take a man with an axe to reduce one of these boxes to kindling. My guide pulled open another door on this floor, showing me a 250 horsepower engine, which is used for generating the electricity by which the entire plant is lighted and heated.

#### SUNLIGHT IS PURE.

Continuous Chemical Tests as Precau-

perfection in Sunlight Soap. On my way out of the framing-room I picked up an octagon bar of Sunlight men into one of the most interesting to carry away with me as a memento of my visit. Before leaving the factory Here samples of Sunlight are tested three or four times in the course of its production. The conversation turned to adulteration of soap, and the chemist offered to make a test for my benefit to see if there was any free alkali in Sunlight. Many persons complain of the injury to both their hands and clothes, which is now known to be due to the free alkali contained in so many soaps. Taking the piece of new soap from my hand, he cut off about two ounces and proceeded to melt it.

Meanwhile he took some clarified water and dropped into it a very small quantity of soda ash, the common adulterant used in common soap. A single drop of the testing acid caused the contents of the bottle to turn pink. The test was then applied to the dissolved Sunlight, but though a considerable quantity of the testing acid was used it failed to show the slightest sign of the presence of free alkali. Are there no other wavs of adulterating soaps than using strong chemicals or loading refuse, as you call it,

to make weight? There is one way of adulteration often practised by unscrupulous manufacturers: this consists in overloading the soap with water. In appearance there is little to distinguish these soaps from the pure article; only experience can expose the fraud. This form of adulteration has been so extensively carried on that it gave rise to the saying that "he makes his fortune who makes water stand upright." In this connection we may quote from Mr. Cross' lecture at the International

Health Exhibition. "The love of gain when indulged at

to an every law of some people of the property of the property of the control of

the expense of others is a vice which leads men to forsake art and take to artifice. In soapmaking, it takes the form of perverting ingenuity to the production of highly "watered" soaps, the artifice consisting of keeping up the appearance of the soap in opposition to the influence of the water. It is scarcely necessary to point out that the severe test of the wash-tub soon reveals the true character of these fraudulent scaps, their lack of the genuine substance causing them to "waste." In view of these facts, there should be no excuse for continuing to pay for water at the price of soap."

No Mineral Oils in Sambleht Soap.

No Mineral Oils in Sunlight Soap.

No; mineral oil may be used in soap with cheap grease at onethird the price of vegetable oil; but in Sunlight Soap nothing but pure vege-table oils and fats are used. But if you give thereby a larger piece of soap for the same money, how would the public be able to distinguish

There is not in Canada to-day a woman who has given Sunlight Soap a trial in comparison with other soaps, but will easily recognize the difference. Sunlight Soap is acknowledged

tinctly as the standard for quality. Sunlight Soap Sawes Labor. For what do you specially recommend

everyone who knows to stand out dis-

Sunlight Soap? For the laundry, for, relieving the strain and labor of washing day. It is made of materials so mure and so good that it may be used, if desired, for any personal or domestic purpose.

A Perfect Laundry Soap.

What are its special points as

laundry soap? Sunlight Soap is spar in a highly concentrated form, containing a mini mum percentage of water and no load ing refuse to make weight. Consequently a small piece of Sunlight Soap will go much farther than a large lump of common soap. Not only so, but it takes far less rubbing and no boiling to get the dirt out. That practically means that it saves labor in scrubbing and rubbing; it saves money in the shape of coal unused, since there is no fire to keep going, and it saves money in the longer life of the articles washed with it, since there is far less wear and tear in the clothes than is the case when common soap is used.

Some soaps are wasteful and expensive: is Sunlight Soap wasteful? By no means. It lathers very freely, and that means that the requisite amount of lather is obtained with one or two rubs; whereas it would take far more rubbing and consequent use of soap to produce an equal amount of lather with common soaps. Not only, therefore, does Sunlight Soap require the clothes. Many users say that Sunlight Soap costs them nothing in my guide took me to the laboratory, that they save more than the cost the clothes clean that they begin to where I found a chemist in charge. of the soap through their not having perspire freely in the hot, steamy air, to maintain a fire for boiling.

> Less Rubbing-Better Results. Is an equal amount of lather from common soap and Sunlight Soap equally effective?

No. Here again the advantage of using Sunlight Soap is seen. As has been said, it takes far less rubbing to produce an equal amount of lather from Sunlight Soap; further, the lather from Sunlight Soap has the special quickly and effectively. Just as a small half the soap."

Does Not Injure the Skin, Is Sunlight Soap at all injurious t

Not in the slightest degree. The oils and fats of which Sunlight Soap is made, being absolutely pure, are harmless to the most sensitive skin. As a confirmation of this as ertion it may be pointed out that an eminent M.D. (Dr. Campbell) says that he "applied Sunlight Soap repeatedly to the skin of a patient who has for years been subject to eczema of a severe type. . . and that the application excited no irritation whatever." Again, there is no free alkali in Sunlight Soap. By free alkali is meant alkali not chemically

lone with Sunlight Soap, and with better results than with other soaps. And it may be pointed out in this connection that Sunlight Soap does not neces sitate much rubbing to get the dirt out. Too much rubbing is apt to rub the dirt in. The rinsing water should be perfectly clean, and as soon as it becomes impregnated with dirt and im-

portance of having perfectly clean water for rinsing cannot be over-estimated. There is no need for anyone to adopt the old-fashioned bleaching process, for Sunlight Soap does its work so well that, if the directions are fully carried out, linen washed with Sunlight Soap will become snow-white without boiling or bleaching. The difficulty is

that some people will not use Sunlight Soap in the "Sunlight Way," described in the directions on each package. "The 'Sunlight way' means ease and simplicity, then?"

Not ease and simplicity alone; it also means satisfaction—that is to say. the washing can be done with Sunlight Soap in the "Sunlight way" in less time, with less labor and expense; the result is satisfactory in every way, the dirtiest article being made as clean and sweet as new. A lady, who used to wash in the old-fashioned way, contracted ervsipelas in consequence, and had to give up home laundering for many years. Her attention was drawn to the "Sunlight way" of washing; she tried it, no symptoms of erysipelas ensued, and she has since been able to do her own washing with pleasure and comfort.

Seeing that the "Sunlight way" of washing is so easy and simple, why don't you lay more stress on this fact in your advertisements?

The ease and comfort of our "Sun light way" has always been emphasized both on the wrapper and in advertisements since Sunlight Soap was first manufactured. The worst of it is that many people never read the directions for use, and percist in using Sunlight Soap as they would do a common soap. The consequence is such people do not reap the full advantage of the admirable and unique properties of Sunlight

Some Other Important Points.

Has Sunlight Soap any other points to recommend it?

Yes. We have seen that clother washed with Sunlight Soap don't need boiling; consequently there is no noxious steam pervading the house on washsame lather, but one must take into wife catching cold by going from the account what has already been said as hot air of the wash house or kitchen regards Sunlight Scap saving money in into the cold air of out-of-doors, when the shape of coal and wear and tear of she hangs the clothes up to dry. Some women, who wash with common scap. and the sudden chill they feel on going out into the open air frequently brings on severe and often dangerous colds. Does Not Shrink Nor Harden Flannels.

I understand some soaps cause flannels and woollens to shrink and harden Will Sunlight Soap do this?

There is nothing in the composition of Sunlight Soap that will shrink or harden woollens. The method we always recommend for washing flannels and woollens should be followed. Briefly feature-being derived from a highly- it is this: Shake the articles free from concentrated soap it does its work more dust. Cut an octagon bar of Sunlight Soap into shavings, pour into a gallon piece of Sunlight Soap contains more of boiling water and whisk to a lather. detergent or washing properties than a When just lukeware, work the articles large piece of ordinary soap, so with in the lather without rubbing. Squeeze Sunlight Soap a smaller amount of soap out the dirty water without twisting. is needed to wash out the dirt than is rinse thoroughly in two relays of clear the case with common soap, hence the tepid water. Squeeze out water with-assertion: "Double the work done with out twisting, and hang in the open air to dry. Not only flannels and woollens. but also art muslins, cretonnes, lace curtains, etc., may be successfully laundered in this way. Sunlight Soap is excellent for washing flannels and wool-

> Splendidly Useful in Many Ways. For what other purpose can Sunlight

Soap be used? Sunlight Soap, though specially manufactured for laundry work, will be found useful for many other purposes. Gardeners and others interested in the cultivation of plants and flowers have testified to its value as an insecticide for clearing plants of green fly and all other kinds of insects. "Two ounces of Sunlight Soap is made. Tell them to solve the problem of to kind and that high tart of Sunlight Soap," writes a market gardener, "dissolved in a pail of water and will send them free a Lifebuoy Puzzle with the companied of an elient will send them free a Lifebuoy Puzzle with the companied of an elient will send them free a Lifebuoy Puzzle with the companied of a flat surface, and a Picture Poet" combined with the fats. Soap in which syringed over rose-trees, not only keeps and a Picture Book."

them clear of insects, but gives the foliage of the plants that beautiful, clean and healthy appearance that so, delights the cultivator. It is absolutely harmless to the most tender plant; indeed, as an insecticide there is nothing cheaper, handier, or more effective than a solution of Sunlight Soap and water."

Many breeders and exhibitors of prize birds and animals have given unquali-fled praise to Sunlight Soap, and the press throughout the country in chronicling the successes at the various exhibitions and shows frequently makes mention of the fact that the winners of the principal prizes have found Sunlight Soap useful in preparing their exhibits for show. The testimony of an English breeder and exhibitor prize fowls may be taken as a speci-men of the many received: "I know of no other article which will bring out the feathers so perfectly and give such gloss to them. I find that a good wash with this (Sunlight) soap greatly invigorates fowls that are out of sorts. purity, a fresh relay of clear, clean it being a great boon to them and water should be procured. The imperfectly harmless. To prove its quality, I may say that since I first used Sunlight Soap I have had much more success, winning hundreds of cups, medals and first prizes all over Eng-

> Sunlight Soap, then, may be regard-ed as a universal cleanser, judging from the many purposes for which it can be

Yes: a universal cleanser Sunlight Soap undoubtedly is, in that it can be used for improving nearly everything. Not only is it useful in the laundry but soldiers have spoken highly of it for cleaning their tunics, saddles, belts,

Sunlight Soap the Same the World Over Is Sunlight Soap as made in Canada the same exactly as that made in England?

A sample of every Canadian boil of Sunlight Soap is sent to England, after it has stood every labractory test here, to be tested again before being placed on the Canadian market. The Canadian make of Sunlight Soap is equal in every respect to that made in Eng-

\$5,000 Reward.

We have heard recently of a chemical student anxious to gain the five thousand dollars reward, which is printed on every Sunlight Soap Wrapper, who tested on several occasions the soap made in Canada, and confessed he failed to find any trace of adulteration or injurious chemicals.

All First-Class Grocers Sell Sunlight

Are there any grocers in Canada that do not carry a stock of Sunlight Soap? There may be a few; but we will send a trial sample free of cost to any reader of your paper sending name and address of any grocer who cannot supply Sunlight Soap.

Eminent Physicians Testify as to ..

Purity. When we returned to the office my uide showed me a testimonial from Sir Charles Cameron, a member of the British College of Physicians and Surgeons, who is regarded as one of the most eminent authorities in England, bearing out the result of the test I had witnessed. Sir Charles Cameron says: "I have carefully analyzed specimens of Sunlight Soap, and the points in possession of this soap that are most favorable are its freedom from free alkali, the large percentage of fatty acid it contains, and the purity of the materials employed in its preparation. From my own experience I can strongly

recommend it." Other testimonials, too numerous to mention, were in evidence, all bearing out the experience of those who had had now proved the difference between You may ask if the goal was worth the been slaves to common soap, and who merely in saving labor, but in saving their hands and saving in the wear of clothes by using Sunlight Soap.

The Many Large Plants Where Sunlight Soap is Made.

On one of the walls of the office I noticed a large picture of the flourishing Town of Port Sunlight, the English home of Sunlight Soan. Here Lever lish home of Sunlight Soap. Here Lever work in which a man most delights is also the work he can do the best. Let a so the work he can do the best. in the world. Its capacity is 3,200 tons let him stick to it in spite of all discour-weekly, and over 3,000 employes earn are nearly setbacks, and his ultimate their livelihood by the manufacture of —John Boyd Fisher, in Chicago Tribune. Sunlight Soap. While Toronto is the fortunate possessor of the largest soap factory in Canada, Lever Brothers have The employment of photography to two such plants in the United States, produce sculpture in the round has everone in Australia, one in Germany, and cised the minds of many inventors, but another in Switzerland with very indifferent results. A step on-

another in Switzerland. another in Switzerland.

The last words I heard from my guide before I came away were: "Tell the readers of your paper we will be glad at any time to show them how Sunlight Soon is made. Tell them to

. laugues Cardler Ericara, Montrea

## PUT HEART INTO WORK IF YOU WOULD WIN

SUCCESS DEPENDS ON STRENGTH OF DESIRE.

Success in accomplishment of a purpose depends upon the strength of the desire which moves the ingividual to his work. Whenever you find a man whose whole heart, as it is said, is set upon an object, only give him time and the victory is his.

I do not claim that a man who is over 40 can acquire great skill as an aerobat; nor that a man of 75 can learn Greek with the same facility as a youth of 20. But, apart from such extravagances, I claim that, other things being equal, success in anything aepends upon the strength of the desire of the individual to do the thing

I once knew a young man who, like the secretary of the "supercilious nabob from the east," was proud but poor. This young man was of as good family as his rich employer, and was received in the employer's circle of There he was treated with hauteur by certain of the employer's relations, and he swore unto himself a great oath: "The day will come when the mud from my carriage wheels will splash these people in the face."

This, of course, was more or less a figure of speech. For that young man would have to accomplish two things before the proverbial mud could fly from the traditional carriage wheels. First, he would have to get rich, and, secondly, he would have to win a position which would lift him, in the social scale, above his enemies. Now, he did not care so much for wealth, but wealth, in his case, was necessary as a ladder to climb to the position where he could gratify the insuperable hatred he felt for his enemies. Fame alone ould not serve his purpose, for his enemies admired wealth and fawned upon the power it gave. But even were he to grow a thousand times as wealthy as they, it alone would not serve, be cause of the inferior position he would have formerly held as an employe of the family. This stain would have to be wiped out, and wiped out it could only be by the man's rising to a position from which, as a throne set upon a foundation of wealth, he could look over the heads of his enemies with a

To this height, therefore, he began to climb. Wealth first, position afterwards, and added to these, superiority of mind

he succeeded. How could he fail with so grim a purpose before him, with such rancor spurring him on? At the end of twenty years, when he was but little over 40, he was much richer than his old employer, and had won a position of which none of the seven generations of his em-ployer's family had dared to dream in onnection with themselves. He was a serator of the United States.

His wealth had given him great elegance of manner, or, rather, it had expanded and made warm the natural elegance with which he had been born. His position opened to him all the doors of the large city in which he lived. His former employer raised his hat to him when he met the senator in the street. ad pretended to have been ignorant of his existence were now vastly pleased if they could find their way into drawingof this man was complete, and perhaps story of his former humiliation, in which,

names and dates.

Now, here was made a choice of proadmirably. The years of hard work he did in studying and mastering law and oratory, the subsequent years he spent in practice by which he grew rich, and the almost infinite vexation he suffered in getting himself elected to the United States Senate, would all have been necessary had his ambition been merely to be a senator—had a seat in the Senate been his real objective point. And had such been the case this man's life would have been pronounced a success of the highest obscure man had he not been moved by the powerful motive that had entered his soul with the insult given him by his

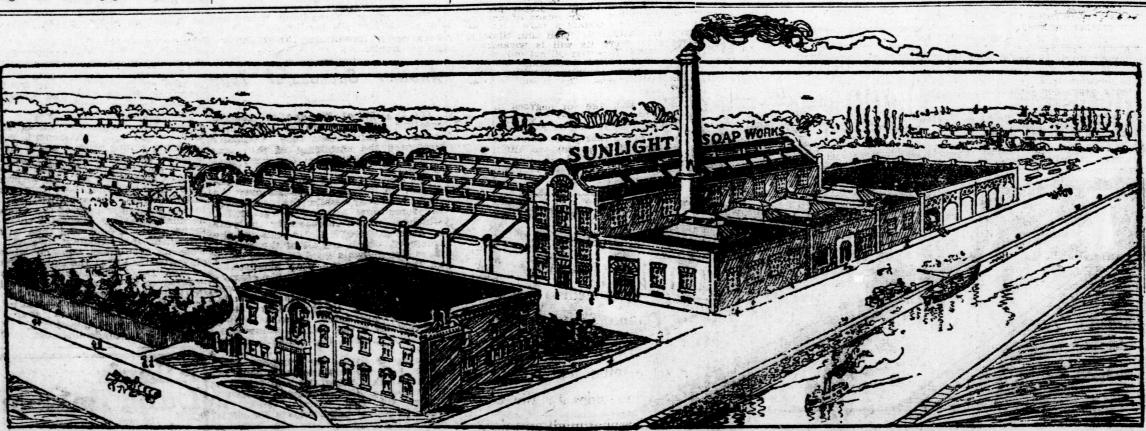
race. But the answer is that any goal is worth any race if the racer cares to win it. The moral to be drawn from the success of the young man in the above tivation of revengeful feelings-which is mon find out, therefore, the line he loves,

## Aid to Sculpture.

1099 The principle consists in passing a taken and the chieft which is photo-graphed. The screen is so managed that the highest part of the chieft rechromo-calqtina plate. When this third plate is treated to the hoth, those parts which have been illuminated longest, no maly those which in the object are highest in relief, evel up the highest, and all the other parts in minute grade-

> taken in way or plaster, and used Cause of Appendicitis.

A distinguished physician gives his dicitis is the eating of hurried and regular meals, involving the retention of imperfectly digested food. "Then it is that these miscroscopical organisms will crowd into what may be called the backwater of the appendix, here to stagnate and to develop a powerful poison, which, acting upon the walls of the tube, soon produces inflammation, which is evidenced by pain and all the train of symptoms incident to appendicitis." other foreign bodies get into the appendix and cause infiammation. These occurrences, however, are very rare, while bad habits of eating are very common. The moral is that the best means of prevention are care in diet, regular exercise, and an intelligent,



SUNLIGHT SOAP WORKS, EASTERN AVENUE, TORONTO