CHAPTER VI

SUGAR AND SWEETS

The fourth booth in the great fair is the one that many children will like best, for here is sugar of every kind that you ever heard of—cane sugar, beet sugar, maple sugar, and even sugar of milk. There are also substitutes for sugar, such as honey, molasses, glucose, and corn sirup. Besides these, there are preserves and jam, and there are more kinds of candy than you ever imagined even in a dream of fairyland.

Sugar is so agreeable that we are often inclined to eat it in too large quantities or at the wrong time. Children are often told that if they eat sugar before dinner, it will "spoil their appetite." This is because eating it makes you feel as if you did not care for anything more, even though all the time your body may be in need of other food.

We eat sugar quite as much because we like it as because we need it. We can get from fruit and vege-
tables, especially dried fruit, all that we really require, though our food would not be so appetizing without some sugar.

In one way, however, sugar is of great value as a food. You know that soldiers sometimes carry an "emergency ration," which is not to be used unless their regular supply of food has given out. Sugar is a sort of emergency ration. If you are climbing a mountain, a lump of sugar or a few raisins now and then will help you on. Soldiers find that they can stand a hard march better if they have sugar. Of course some other food, like bread, for instance, or a baked potato, would answer the purpose; but they have no time to stop and cook, and if they had, these foods would take a longer time to digest and yield energy. Then, too, soldiers like it, and it makes up to them in part for the sweet dessert most of them have had at home. These are two reasons why we have had to be as saving of sugar as possible, in order to send it to them.

When people speak of sugar, they usually have in mind a bowl of white granulated sugar, but this is by no means fair to the other varieties. Nearly all our sugar comes from plants. Until about a century ago, all granulated sugar was made from the sugar cane. This is really a kind of grass, but a grass that might grow in a country of giants, for it is ten or fifteen feet in height, sometimes even twenty. The juice or sap is so sweet that children—and grown-up people, too—like to suck bits of the stalk.
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These stalks are crushed in a mill and passed between rollers to squeeze out the juice. Solids are filtered out, then the liquid is boiled several times, the sugar crystallizing after each boiling and being removed. This gives what is called raw sugar. It is brown, and to make it white it has to be washed and filtered through a special kind of charcoal made from bone, and then crystallized again. This is what we call refining it. The refined sugar is of a slightly creamy color, and sometimes it is blued to make it look white. If you examine a few grains through a magnifying glass, you will find that each grain is a little crystal. Molasses is what is called a "by-product" of sugar-making. It contains a large amount of sugar, but to get all this sugar into a crystallized form is a thing that the ordinary methods of sugar-making have not yet succeeded in doing. Molasses is rich in lime, and so is better than sugar for growing children.

Sugar is also made from large, sweet beets. These are cut into slices, and the juice is extracted and purified. Then the liquid is evaporated, and a sugar results which is exactly the same thing as cane sugar. It will make jelly and do everything else that cane sugar will do. Before the war, the French raised large quantities of sugar beets; but France's beet-bearing lands have been partly in the hands of the enemy or within the fighting zone and now, even though they have been recovered, they will be in no condition for agriculture for a long time to come.
Sugar Cane
The same kind of sugar comes from one kind of maple tree that grows in many parts of this country. About the maple there is a charming story that, when one day the Lord of the Green Things Growing came to visit his garden, the plants were all eager to make him some gift. The rose and the lily gave their blossoms; the apple and the orange and the nut trees gave their fruit and were happy. The maple alone was troubled, for she had neither blossoms nor fruit to give him. At last she said sadly, “I have no beautiful blossoms and no delicious fruit, but I will gladly give you my own heart’s blood.” And that is the way, according to the legend, that the first maple sugar came into being.

To make maple sugar, a hole is bored a little way into the tree and a “spile” pushed in. Through this spile the sap trickles down into a bucket, then is poured into a kettle or a modern evaporator, and some of the water boiled out, leaving maple syrup. Evaporating more of the water will leave a mushy—but delicious—wet brown sugar; and what remains after still more evaporating is poured into moulds, and soon cakes of “new maple sugar” are for sale in the stores. Maple sugar could be refined and made white, but it would lose the characteristic flavor which people like so well.

Another kind of sugar is found in honey. In ancient times, before people had learned how to get sugar from plants, honey was very much prized because it was their only sweetening, and a land “flowing with milk and honey” was their way of describing a rich and fertile
country. To offer a guest milk and honey was a special courtesy. People of those times were very particular where their honey came from, and the ancient poets had much to say about the wonderfully good quality of that from a mountain in Greece named Hymettus. Honey still comes from that mountain, and it is exceedingly good; but persons who have tried it and also the honey made in America from the blossoms of basswood, or of white clover, say that the American honey is fully as delicate.

A kind of sugar called glucose is found in many fruits and vegetables, and also in honey. There is so much in grapes that it is sometimes called grape sugar. One form of this kind of sugar is made from the starch of corn, and is called corn sugar when it is sold in the solid form, or corn sirup when it is liquid. It is of common use in confectionery, jelly, preserves, and in canning. It is used, too, as a table sirup. In many countries the same sugar is made from potato starch.

In parts of our country a sirup is made from sorghum, a plant that has been known in China for many centuries. Many farmers in a community will grow a field of sorghum cane, which is not unlike the sugar cane in appearance. One farmer will set up the mill and grind this cane for his neighbors. The cane comes to the mill heaped high in large wagons and the product is returned to the farmers in the large cans or vats provided for the purpose. The mill is a simple affair erected out of doors and turned by a horse or mule
walking round and round, but it grinds the cane under heavy pressure and forces out the greenish, strong-tasting juice. The sirup is boiled in a series of large pans supported on bricks over a fire, and so arranged that the sirup as it boils runs over from the higher into the lower pans, leaving behind the impurities and becoming clearer. When it flows from the last pan it is clear and thick and ready for table use. Ribbon cane sirup is prepared in many places in the south in the same way.

Not only sugar cane and beets and maple trees contain sugar in their sap, but many other plants and some of the vegetables that we use commonly. The chief difficulty is that there is not enough in them to make it worth while to extract it for the market. Fruits, especially sun-dried fruits, contain a good deal of sugar. Raisins, for instance, which will often take the place of sugar, are exceedingly sweet, and they are merely grapes dried in the sun, and contain only the sugar that was in them in the first place. Cakes and desserts that have raisins in them do not need so much sugar. Dates and figs are also good to use in place of sugar.

While most of our sugar comes from plants, some is found in the animal kingdom. If skim milk or whey is boiled till most of the water is evaporated, and is allowed to stand quietly for a while, tiny crystals form and drop to the bottom of the dish. This is milk sugar. It is an expensive kind of sugar. To make one quart of it takes at least twenty quarts of milk. It is
not so sweet as ordinary sugar. Sugar of milk is used in dry medicines. If you are ever given small pills that taste rather sweet, you may be almost sure that they are made of sugar of milk mixed with whatever medicine is needed. It is used too for babies’ food.

*It is worth remembering:*

That sugar should be eaten in small quantities and never before meals.

That sugar is of value chiefly as an “emergency ration” and to make other foods palatable.

That sweet fruits will give us much of the sugar we need, and other important things as well.

That many fruits and some vegetables contain sugar, but only a few of them in sufficiently large quantities to pay for extracting.