



COCOA ESSENCE, as manufactured by Messrs. Cadbury, is now universally acknowledged to be one of the most wholesome

and nutritious beverages that can be given to children, and people generally of delicate digestion or weak health. The process, or rather number of processes, through which cocoa has to pass before it is ready for consumption are curious and interesting, the more so that from the time the cocoa beans reach Messrs. Cadbury's works they need not be touched by the hand at all, the machinery being so arranged as to perform what is necessary without any handling by the workpeople employed.

The Theobroma, Cacao, or cocoa-tree, is a native of Tropical America; it is an evergreen growing to a height of from fourteen to eighteen feet, and bear-

the railways to the roasting-room. This process of roasting is performed in iron cylinders, which revolve slowly over coke fires, the cocoa emitting a very pleasant aroma as it is brought to perfection. Thence it is taken into another department to be cleansed from the outer shell, and after this it is again removed to a room where two long lines of granite mills crush it into a smooth paste, which, while warm, flows like cream into vessels, ready now for the process by which the excess of cocoa butter is extracted. Up to this point the cocoa is in its original condition, with the exception of the acids, which have been thrown off during the roasting, and of the shell removed afterwards.

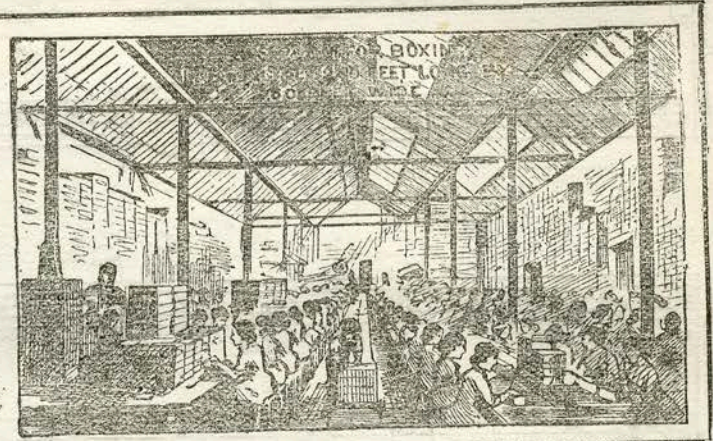
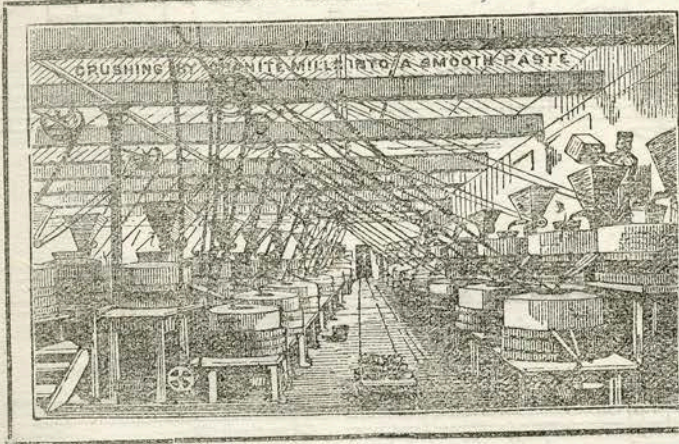
The best cocoa contains about 50 per cent. of natural cocoa oil or butter, and, as this has been found too large a proportion for ordinary digestions, the Messrs. Cadbury have directed their attention towards the production of a pure cocoa, which shall nevertheless be free from this objection. The removal of two-thirds of the butter is accomplished by means of very powerful and complicated machinery, the result being an impalpable powder, soluble in boiling water, and possessing the nutritious gluten and stimulating theobromine in an increased ratio.

After the manufacture of Cocoa Essence comes the packing of the same, and not far from the grinding-room is one devoted to the manufacture of the cardboard boxes in which it is enclosed, and, although not essentially one of the processes of manufacture, it is quite sufficiently interesting to be described. The Americans are in advance of us in introducing the best and most perfect box-making machine. The cardboard previously cut into the required shape, is placed on a metal plate. On one side is a small trough containing liquid glue, in which a roller turns, and, coming into contact with two smaller rollers, trans-

facture. The pure cocoa is combined with sugar, and bruised by rollers in a revolving basin until it is of the consistence of dough, which is crushed still finer in its passage through machines with granite cylinders, and is then ready for the different moulds and shapes in which it is finally sent out.

It is impossible to pay a visit to these works without being agreeably struck with the numerous provisions which Messrs. Cadbury have made for the comfort and well-being of their workpeople. Each day before work begins all assemble for a short religious service, and cleanliness, order, and neatness prevail throughout. The men and women work separately, the works being in two sections for that purpose, and each being provided with dressing-rooms, lavatories, dining-rooms, cooking apparatus &c. A large enclosed flower-garden is reserved for the use of the women and girls during the intervals allowed for rest and recreation, and the men and boys are provided with pastimes more congenial to their tastes, not the least of which is an open-air swimming-bath in the rear of the grounds. Signs of care, thought, and consideration for the many people employed are visible on all sides, and the good result of this generous and kindly spirit may be gathered from the contented and healthy appearance of the workpeople, a forcible contrast with the too-often pinched and weary expression on the faces of workers in ordinary factories.

To turn, however, from the makers of Cocoa Essence to the article itself, it is impossible to dwell too strongly on the benefits to be derived from habitually taking this pure and nourishing beverage. Its special qualities make it really invaluable for children; it has a pleasant flavour, it is nourishing and easily digested, and children do not tire of it as they do of many things. It is astonishing that it is not more generally used in boys' and girls' schools; the addition of a cup of well-made cocoa would



ing its flowers and fruits at all seasons; the clusters of little yellow flowers and the fruit, which, when ripe, is of a beautiful orange colour, grow out of the trunk and thickest part of the boughs. The best, and by far the largest proportion of cocoa, comes from the northern provinces of South America and from the West Indies.

Messrs. Cadbury's works, and the village of their workpeople, are at Bourneville, near King's Norton; they are situated in a charming valley surrounded by woods and hills, and watered by a pretty trout-stream which runs through the extensive grounds. Everything that ingenuity can devise to economise labour, and prevent the handling of any of the preparations during the whole process of manufacture, is to be found in these works. One of many of these mechanical helps is illustrated in our initial letter; that by means of which 20,000 of the six-penny packets of cocoa can be accurately measured each day. It is satisfactory to know that the Cocoa Essence, which is the principal product of the firm, is made in a locality where the air is pure and untainted—where cleanliness and order are rendered easily attainable by almost unlimited space, and where fog, smoke, objectionable smells, and others of the unsavoury accompaniments of workrooms and factories in densely-populated manufacturing towns, are unknown. An important feature in these works is the system of railways that run like a network all over the place, connecting the different departments; the small cars, specially fitted for the different purposes for which they are destined, are constantly travelling about in all directions, and give an air of life and energy to the whole establishment.

The cocoa-nuts or beans, on their arrival at Bourneville, are emptied loose into bins for the various kinds and qualities; they are then placed in a revolving cylinder about fifteen feet long, which cleanses them from all dirt and foreign matter, in a way which could not be equalled by hand labour, and also divides the beans into various thicknesses for sending into the roasting-room. After being cleaned and sorted the cocoa is packed in boxes and conveyed by one of

fers the glue to them. These rollers move to the centre of the plate, where they in their turn transfer their coating to two stamps, which fall on to the pasteboard and glue the edges, while at the same instant a kind of hammer falls and indents the paper where it requires folding. Two iron "fingers" immediately move from the opposite side of the plate and draw the pasteboard along underneath the frame to an instrument called a plunger, and similar to a large punch, of the size and shape of the box. The plunger strikes the middle of the pasteboard through a hole in the plate, while a flapper and folder close on each side of it, and press all sides of the paper round the plunger. The box is then formed, except that one end is left open, and in that condition it drops into a revolving wheel, placed horizontally, containing twenty receivers, and is expelled by means of a rod. This machine is capable of producing fifteen thousand complete boxes per diem.

The labelling and boxing room is perhaps the pleasantest sight in the whole establishment; standing at the long lines of tables are girls in neat print dresses, busily at work giving the last finishing touches to the Cocoa Essence, before it once more finds its way into the world again, and here also the Mexican Chocolate is folded in its tin-foil and neat blue wrapper, and countless varieties of pretty boxes, embellished with pictures and other ornaments, are being filled with the delicious creams and vanilla chocolates, which will be none the less appreciated now that our readers have been introduced to the works where they are made.

The Tinman's shop is a little manufactory in itself, where the moulds for chocolate are stamped and fastened together. The saw-mill, with its circular saws and planing machine, and the boys cleverly knocking wooden boxes together, are also sights worth seeing.

Separate departments are reserved for the preparation of chocolate in all its forms for eating and drinking, with all the machinery, moulds, and other appliances necessary for this branch of the manu-

make the plain breakfast of bread-and-butter a good and sustaining, instead of an insufficient, meal, which it really is when the bread-and-butter is simply accompanied by weak tea. It is no more trouble to make cocoa than it is to make tea, and it certainly is not more expensive.

Again, invalids or people with delicate digestions, or those of nervous temperament, find the Cocoa Essence of the greatest benefit, and its freedom from the excess of butter renders it more palatable and more wholesome than many other preparations of the kind. Besides the usual way of taking cocoa—namely, as a beverage—there are numerous kinds of sweet dishes and puddings which can be made of it. A few recipes for cocoa creams and puddings are added in proof of this assertion:—1. Cocoa Cream: Put four ounces of cocoa essence in a saucepan, add the same weight of sugar, and a pint of milk poured in gradually; put in a stick of vanilla to flavour the cream, boil gently, and take off the fire as soon as it thickens. Beat in a basin two whole eggs and the yolks of four, mix them gradually with the cream, strain and pour into a buttered mould or into a pie-dish, in which it can be served. Put it in a bain-marie, and hold a shovel full of hot coals over it to heat it all through. When the cream comes away from the mould easily, it is sufficiently done, but must not be turned out until it is cold. 2. Cocoa Pudding: Put two ounces of butter on the fire to melt, mix with this two ounces of fine white flour, and work them into a paste with half a pint of boiling milk; add two ounces of sifted sugar, and two ounces of cocoa, and let the mixture stand till cold; then work in the yolks of four eggs and the whites beaten to a stiff froth, and pour the mixture into a mould rubbed with butter and sprinkled with flour. Put the mould in a saucepan with boiling water, and boil gently for one hour and a half. The various preparations of cocoa, whether as a nourishing drink or a delicious sweetmeat, are so generally appreciated, that we believe our readers will be delighted to be made acquainted with these interesting features of its production.