

THE TEACHER'S GUIDE

TO THE

GOVERNMENT TEMPERANCE SYLLABUS.

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TEMPERANCE TEACHING.

Article 2 (9) Code, 1909. Curriculum, Syllabus and Time Table. "Hygiene, including instruction, adapted to the ages and sexes of the scholars, in the elementary rules of personal health, particularly in respect of food and drink (including Alcohol). Lessons on 'Temperance,' when given, should be in conformity with the official Syllabus dated 1st June, 1909."

The Teacher's Guide to the Government Temperance Syllabus.

INTRODUCTION.

THE appeal to the Reason of the pupil has recently displaced the mere "telling" or authoritative *ipse dixit* of the teacher: and consequently the teaching of Temperance can be made just as educative as that of geography or history, if conducted along such right pedagogical lines. The Science and Art of Teaching are more and more replacing mere verbal repetition on the part of the teacher and memorizing by the pupil; and these pages strictly follow the line of this Science and Art.

No *single* barrier or deterrent will suffice to keep off the wanderer into the baleful region of indulgence in alcoholic beverages; or lead him back from it if once ensnared; neither the sense of personal decency and responsibility, nor the sense of social position, nor the defence of sex, nor the feeling of repugnance against the usual associations of drink. All and every one of these, but above all an appeal to Reason and Religion, require to be called in to our aid, as the experience of life too amply proves.

The recent issue of the Government "Syllabus of Lessons on Temperance for Scholars attending Public

Elementary Schools," should mark an epoch in the treatment of this important matter. It gives an authoritative recognition and sanction to the teaching of the subject, which will probably produce a far-reaching effect in the schools and in the country. But even in its suggested broad elementary treatment of the matter, this Syllabus presupposes a knowledge which all teachers do not possess. This is recognised in the statement in the Syllabus itself that "at present some schools have on their staff no teachers who have the special knowledge required for giving teaching of this kind."

Moreover, whilst the Syllabus gives admirable help in this direction, it nevertheless fails to give sufficient aid along the lines to which Temperance teaching generally directs its special energies. It presupposes an acquaintance with Physiology on the part of the teacher, which Elementary School Teachers, and especially female teachers, do not always possess.

The correctness of this statement is illustrated by the following phrases in the text of the Syllabus, which are unintelligible to those—either teachers or taught—who have not had some fundamental notions of Physiology already imparted to them. "Alcohol causes the blood vessels of the skin to become very full of blood." "A person who frequently takes much alcohol will probably suffer from digestive troubles and malnutrition." It will be the author's province to give the reason why these and other physiological results take place.

Again, young teachers require some help in laying out before a class the admirable subject matter appended in the form of "Notes" to the Syllabus. The writer has

accordingly ventured to offer his experience of half-a-century as a teacher, inspector, author of books on kindred subjects, or public lecturer, for the benefit of his less experienced *confrères* in this matter.

The general subjects of "Food; its different kinds; the use and necessity of Food; overfeeding and underfeeding; special uses of special Food," are left to be interpreted by the "Notes." For economy of space special efforts are made to enable the teacher to teach the more technical items of "Beverages, Alcohol, and the effects of Alcoholic beverages on the body." The Physiology of the subject, which long experience has shown to be one of the most interesting factors in the teaching of Temperance, is particularly dealt with.

Of course the practical teacher will make copious use of the Blackboard in teaching Temperance as in all other subjects. Blackboard Illustrations are not appended, as the teachers of the Upper Standards, which are alone catered for here, do not often need such help, but can make out their own Blackboard recapitulation memoranda. For Experimental illustrations the teacher should refer to "The Temperance Speaker's Companion," Vol. IV., and other books mentioned in the Appendix.

The "Model Lessons" are offered as one form of the teaching of Temperance which has been found by the author to be intelligible, interesting, and instructive. It is hoped, moreover, that these "Model Lessons" may in their turn serve as "Models" under which the teachers themselves will group the teaching of those items of the Syllabus not dealt with here. The teacher is accustomed to the drawing up of Notes of Lessons on other items of

the school curriculum ; and he will find material for such in the excellent "Notes."

"Model Lessons " in each of the three "Sections " have been offered.

In the schools under the author's supervision, ten hours annually, or twenty lessons of half-an-hour each, are devoted to this important subject of Temperance teaching.

The Government Syllabus properly refers to the action of Alcohol upon Mind and Body. But it does not refer with any definiteness to the Organs and Functions of the latter as affected by Alcohol, nor give to teacher or pupil any explanation of the Digestion, Circulation, or Innervation (action of the Brain and Nervous System), which are so vitally affected by Alcohol.

An attempt has been made to fill this gap by furnishing preliminary sketches of these organs and their functions ; so as to make the influence of Alcohol upon them a little more intelligible. Experience shows that children of the age catered for (Standards iv. and upwards), can be readily made broadly to understand these organs and their functions, even when dealt with by the non-medical layman. The Elementary School teacher has equally difficult problems in his curriculum which he succeeds in solving ; and it is hoped that the author's endeavour to furnish the Elementary class teacher with working instruments will also aid the voluntary teachers of "Bands of Hope " and kindred Temperance organisations to make their earnest and philanthropic labours yet more successful.

The teacher will require a copy of the Government

Syllabus with this little treatise ; and the former can be procured from Messrs. Wyman, Fetter Lane, London, E.C., or from the publishers of this book, or any bookseller, for 2½d., post free. References are constantly made in these pages to the particular items of the Syllabus there and then dealt with, both in the condensed headings in the Sections, and in the fuller "Notes" which amplify these.

The following pages will meet the requirements of those teachers who for the first time take up Temperance teaching under the suggestion of the Board of Education ; but when they feel the need of more detailed information they will find it in the works mentioned in Appendix II.

SECTION I., FOR STANDARDS IV. and V.

AGE 11 to 12 YEARS.

THE BODY : PRELIMINARY SKETCH.

To be given as a "Conversation Lesson" by the Teacher.

Our Life is twofold ; that of the Body, and that of the Mind.

These two are inseparably connected. As soon as the Body ceases to exist, then all man's thoughts perish. As soon as the Body becomes weakened by sickness, disease, hunger, thirst, or bodily fatigue, the action of the Mind becomes weakened likewise with it.

Conversely, when the Mind is enfeebled by mental fatigue, anxiety, sorrow, or distress, it reacts upon the Digestion, Circulation, and work of the brain and nervous system generally. The sound mind is mostly the tenant of the sound body : *mens sana in corpore sano*.

We are, indeed, "fearfully and wonderfully made" ; and this house needs to be kept constantly in good condition to be the fit abode of its divine tenant. In all this matter Alcohol is of great importance, as we shall shortly see, and as many a wrecked fellow-creature now in prison, lunatic asylum, or workhouse can testify also to his cost and regret.

Especially is this subject of "Temperance" important to Children, as it is with them that Habits are first and best formed. Even the heathens recognized this truth, so that the Latin poet wrote, "The highest reverence is due to children"; and another of such writers says, "Nothing ought to enter a house where a child is that can be hurtful to it." This latter saying we will interpret by letting the "house where the child is" be represented by its own Body.

It is therefore necessary that some preliminary outline of the Organs and Functions of the Body concerned with the teaching of Temperance should be furnished to the pupils on the threshold of our subject; and that later, when we deal with the influence of Alcohol upon the Mind, some outline sketch of the Feelings, Will, and Reason, so far as Alcohol affects their functions, should be offered to the teacher and pupils. We must know the properties of materials, and the best way of dealing with these properties, before we can profitably concern ourselves even with inanimate manufacturing materials, let alone the Mind and Body of Man.

*The Body may be broadly divided into Head, Trunk, and Limbs. Of these we will proceed to consider

THE TRUNK.

The Trunk is made up of an upper half and a lower portion; or the Thorax (Chest) and Abdomen (Belly) respectively.

*A large physiological diagram of the human body with the contents of the thorax and abdomen exposed would be very useful here. This and suitable Lantern Slides may be obtained from the publishers of this book.

The upper portion is occupied by the Heart and Lungs, in which the functions of Circulation and Respiration are chiefly carried on.

The lowlier, but no less necessary, functions of Digestion and clearing away waste are carried on in the lower half of the body ; the former by means of the Stomach and Intestines ; and the latter through the Kidneys and Bladder, which thus serve as excretory organs, or organs employed to carry off excretions or waste matter.

THE THORAX AND ITS CONTENTS.

I. The Heart.—In a healthy house we often have a system of hot-water pipes to distribute heat all over the premises, from cellar to garret. So in the Human Body we have pipes which carry heat, in the form of warm blood, to the smallest and most distant of the organs of the Body : these blood vessels are the Veins conveying blood generally to the Heart ; Arteries taking it from that organ ; with Capillaries connecting the two together.

But in the house of bricks and mortar the hot water in the cast-iron pipes merely conveys heat in it and nothing else. It does not supply with this hot water any *food* for the tenant of the house.

On the contrary, in the Human Body, the warm blood takes with it the materials of the soluble or digested food which it has received from the Stomach and Intestines. It carries this food material to the minutest part of the Body, to make that Body “grow,” and to rebuild in it what work of Mind and Body may have wasted away.

It also keeps all the organs warm, and out of this heat they are enabled to carry on their work, by a wonderful change of heat into living energy or force.

II. Organs of Circulation.—A sketch on the black-board, a diagram out of a text book of Physiology, or a dead sheep's heart will show that this Organ of Circulation is a hollow one, with pipes (veins and arteries, or bloodvessels) leading into and out of it. A diagram will also show that these bloodvessels pass into the limbs and other parts of the Body ; and branch out, or ramify, into the smallest divisions of the latter, or Capillaries, as the trunk of a tree divides into branches and twigs, and into the veining of leaves.

But the smallest divisions of these bloodvessels in the Human Body are too small to be seen with the naked eye. As a consequence of this minute ramification of the bloodvessels into arteries, veins, and capillaries, all parts of the Body needing Food and Heat for work, or for growth or repair of waste tissue, get from the grand circulating pump of the Heart just what each requires.

In a house of bricks and mortar the hot-water pipes are made of rigid cast-iron ; they always remain therefore of about the same size or diameter. They cannot be made sensibly to contract and expand ; the quantity of water passing along and through them is therefore always about the same.

But in our bloodvessels the pipes are made of muscle and membrane (by which we mean flesh fibres and delicate "skin") ; and they can be made to contract and expand so as to lessen or increase the quantity of blood passing

along and through them, according as the muscular fibres in the pipes contract or relax.

These muscular fibres in the walls of the bloodvessels receive the impulse to do this contracting work from the Nervous System. The network of bloodvessels passes into every nook and cranny of the body : and as the blood goes through the Capillaries it feeds the tissues there with food elements, and receives from them carbonic acid and other waste products, the result of physiological work performed there by muscle and nerve.

At this stage of our instruction we only desire to point out that Alcohol acts prejudicially on the nervous system of these smallest bloodvessels and of the great pump of the heart itself. As a consequence, Alcohol acts upon the Circulation of the Blood ; and with it on the supply of food material and the distribution of heat to the body .

III. The Lungs.—But the Heart is not the only circulatory organ in the Chest. There is also that of the Lungs assisted in its action by the ribs and diaphragm.

The Heart pumps blood all over the Body. The Lungs take in and give out, not a liquid (blood) but a fluid (air). As the Lungs expand, or swell out, the air pipes in them likewise expand, and let in more air from the outside. As they contract under the pressure of ribs and diaphragm, they press in on these air-pipes, and so squeeze out the air contained in them, and send it from the body into the outer atmosphere.

The air that comes from the outside enters the lungs comparatively fresh and pure. When it reaches the air sacs, or innermost recesses, of the lungs it becomes impure from the waste of the body made by work ; and

so at last, on its expulsion, it reaches the outer atmosphere in an impure condition.

IV. Respiration.—Now the action of the Lungs is affected by Alcohol, just as we have seen that the heart is influenced. In this way Respiration is affected by Alcohol.

The Lungs really consist of an almost infinite number of small air-sacs, or air-cells, meshed together by surrounding flesh-tissue.

In *Inspiration* the ribs are contracted and pulled upwards and outwards by the muscles between them: so that the cavity of the chest is made less in depth but greater in width than before. At the same time the floor of the Thorax (the diaphragm) contracts and sinks, so that the chest is increased in capacity.

In *Expiration* these same muscles of the ribs and diaphragm relax.

THE ABDOMEN.

I. The Abdomen.—But whilst this work of Circulation and Respiration in the Chest is being carried on, there is work just as necessary being done in the Abdomen. In a house of bricks and mortar the workers in the kitchen are similarly busy with the preparation or cooking of food.

II. The Stomach.—But there is another “preparation” of food, which this time is carried on inside the Human Body. This is the digestion of it, or the making it fit to be taken up through the Stomach and Intestines, to be received into the current of the blood.

Here we may note generally that the final purpose of digestion of *all* kinds of food material is to change them

from the insoluble condition (in which they could not pass into and become a part of the blood current), into the soluble condition (in which they pass into the blood, and go with it all over the Body).

This Digestion of Food is likewise affected by Alcohol. If much Alcohol be taken, the Stomach and Intestines cannot carry on their proper function of Digestion ; that is to say, the food taken does not become properly digested and made fit to be received into the blood current.

The Stomach, as the organ of Digestion, may also itself become irritated by Alcohol ; and one of the most trying and persistent of all diseases, dyspepsia, or "indigestion," may be then set up. This troublesome complaint, dyspepsia, is much more easily contracted than got rid of when found troublesome.

III. The Bladder.—But there is excretion of waste matters from the body to be thought of ; and the excretory organs are as necessary as those of digestion. These excretory organs are the Kidneys and the Bladder, which receive and pass off most of the liquid waste of the body not got rid of through the Skin in sweat and perspiration.

As our subject of Temperance deals with liquids (water, beer, wine, and spirits), and as the Kidneys and Bladder are concerned with getting rid of waste liquids, these two organs are very closely connected with our teaching. The kidneys work with the bladder in this matter. The former strain off waste matters of a liquid nature taken in beverages and liquid foods ; and the kidneys can be just as much injured by Alcohol as can the Heart and Stomach.

IV. Nervous System.—But whilst we outline the work of the Thorax and Abdomen, we must not forget that of the Brain and Nervous System.

The Nervous System governs the muscular action of all parts of the body, and registers pain and pleasure so as to make us conscious of either of them. It thus links up all parts of the body to bring about harmonious action in them.

This work is accomplished through the brain, spinal cord, and nerves. The latter conduct messages to and from the brain and spinal cord, and themselves form a complete nervous network, just as the bloodvessels form a complete vascular circulatory mesh-work in all parts of the body.

The brain not only receives such messages, but itself also controls the heart and circulation and the respiration and digestion of the body.

MODEL LESSON No. 1 (STANDARD IV.).

Syllabus p. 5, art. 6, 7, and p. 8, 10.

I.—BEVERAGES. WATER.

I. Water in the Body.—(1) Moisture, as we have already seen, is constantly passing off from the body, through the kidneys and bladder. (2) It is also constantly being got rid of as sweat and perspiration, through the skin. (3) Lastly, it passes off with the impure air from the lungs in the vapour of our expired breath. We readily see that this is so when we breathe on a cool slate, which condenses a part of this moisture or "steam."

II. Its Replacement in the Body.—If, therefore, we did not replace this watery waste, we should be on the road to becoming dried up, or "mummified." But long before this end could be arrived at all the processes, or functions, of life would be themselves ended; or we should have perished from thirst.

III. Water in Foods.—But this drying-up process is also forestalled by our taking food. Foods are divided into solid and liquid foods. Even the so-called "solid foods" contain a large proportion of water in them; just as our solid tissues (flesh, bone, etc.) are also largely made up of water.

IV. Beverages.—But our liquid foods, and still more our non-alcoholic beverages (tea, coffee, milk, cocoa, etc.) are nearly all water, as are the greater part of alcoholic drinks (beer, wines, and spirits). By liquid foods we mean those liquids that build up or repair tissue, such as soups, broth, etc. We see from the enumeration just made that beverages, as distinguished from liquid foods, may be divided into two classes, non-intoxicating or non-alcoholic; and alcoholic or intoxicating. The word "intoxicating" means poisoning, but the point of actual intoxication, or poisoning, depends, of course, upon the quantity taken; just as would be the case in taking other "toxins," or intoxicants.

As the beverages, milk, tea, coffee, cocoa, beer, wines, etc., consist mainly of water, it will be well for us to understand what are the properties of water.

MODEL LESSON No. 2 (STANDARD IV.)

PROPERTIES OF WATER.

I. Natural Drink.—Water is the one common drink of all animals—including man in a state of nature.

II. Tasteless.—Water, if pure, has no taste or smell in itself. In this respect it differs from tea, coffee, cocoa, etc., each of which has a smell and taste of its own.

III. Pleasant.—Water does not injure even the most delicate of tissues in the body, such as the inner coats of the stomach, unless taken in a large quantity when the body is too hot. In addition, it is very pleasant and grateful to a thirsty person.

IV. Not Offensive.—Water in its use for drinking purposes does not give rise to any feeling of nausea or disgust.

V. Self-Sufficient.—As soon as we have taken sufficient water to satisfy the feeling of thirst, all craving for more ceases; and it requires an effort to continue to drink it. In this respect water is unlike many other beverages, and especially unlike alcoholic beverages, which frequently create a feeling of thirst, or craving for their continued use.

MODEL LESSON No. 3 (STANDARD IV.).

USES OF WATER.

I. A Solvent.—Water dissolves sugar, common salt, and many other “salts” which are taken with food or medicine; as well as other substances in food which are soluble, or capable of being dissolved by water. It is thus necessary as the “carrier” of such soluble substances into the stomach and intestines, to be there taken up into the blood by means of digestion.

II. Carrier of Food.—Water is part of the different liquids used in the digestion of food (see p. 33); and water carries the food when liquefied into the blood, and from this, by means of the capillaries, to the smallest and most remote nook and cranny of the body, to repair the waste there, and add to the body's structure or growth from infancy to manhood. Water forms 75 per cent. of the blood itself, or three-quarters of its weight and bulk; and a sufficient proportion is left behind in the body to assist in building up the bone, muscle, nerve, etc., it has helped to form.

III. A Carrier of Blood Cells.—In passing through the blood vessels with the blood current, water does not injure the delicate corpuscles, or white and coloured living cells, which perform so necessary and important a part of the work of the blood in the body. In this respect it is very different from alcohol, which, taken in any but the most moderate quantities, acts very injuriously upon these precious cells, which are the very life of the blood.

IV. A Carrier of Heat.—Water takes up, or absorbs the heat of the body. The water may be cold when taken by the drinker, but it absorbs the heat of the body, and becomes itself warmed up to the usual body temperature (98°F.) in doing so. It then carries or distributes the heat of the interior organs to the outside. When the water in the blood has reached the skin on the outside, it partly evaporates; and in so doing the heat is carried off, just as the hand is cooled by the evaporation from its outside of water or ether. Water thus becomes a great reducer of body-heat in summer, and in the tropics, when and where a nice cooling down is very refreshing.

V. The only Liquid necessary.—Millions of the human race drink water only; and no other drink than water, or some non-intoxicating beverage made from it, is, as a rule, given by us to children. This shows that any other beverage than water is not actually necessary to healthy human life, any more than it is to the healthy life of other animals.

VI. A Provision of Nature.—In this respect, as with Nature's gifts in general, all animals have what they need, and need what they have. This is a law which determines their life and happiness, and all interference with this law brings risks with it. In this respect Nature is a wise teacher; and we gain wisdom by listening to and obeying her suggestions.

MODEL LESSON No. 4 (STANDARD V.).

Syllabus p. 5, art. 6. "Notes," p. 10, art. 6.

NON-ALCOHOLIC BEVERAGES.

I. Kinds of Beverages.—We have already seen that beverages may be divided into two classes: Intoxicating, or alcoholic, and non-intoxicating, or non-alcoholic; and that among the latter, and the basis of all of them, is water.

II. Artificial Beverages.—Besides water, there are other beverages, which are artificial, and which contain "principles" pleasing to the taste, or in their effect on the nervous system, and which, on account of the water they chiefly consist of, serve as "carriers" of food supplies to the body.

These include cocoa, tea, and coffee, which rather act on the nervous system than afford much food to the body.

Each of these beverages has its own special properties, though the basis of all of them is water.

III. Milk.—Milk may be regarded as a liquid food since it builds up tissue and gives heat to the body. It contains, however, a large proportion of water (85 per cent.). There is nothing in milk which prevents the water in it doing its natural work of dissolving food, maintaining the normal fluidity of the blood; distributing and equalizing the heat, etc., of the body.

Analysis of Milk	{	Water	85 per cent.	
		Sugar	5	„ (Heat-giving)
		Fat	4	„ (Heat-giving)
		Nitrogenous matter.	5	„ (Muscle-building)
		Mineral matter . . .	1	„ (Bone-forming)
		100		

It will be seen, therefore, that milk can not only satisfy thirst, but serve other useful purposes within the body, which even water is

not capable of doing. It is a "perfect food" for all those who can digest it.

II. Cocoa.—This is the fruit of a plant largely grown in tropical countries, such as the West Indies. The "nibs" are roasted, and when we get them they are sometimes boiled in water to a brown decoction. Or they are prepared for us in soluble form; or in the cheaper forms, they are ground with a mixture of starch and sugar. In the latter cases they are mixed with boiling water.

The essential principle of cocoa is "theobromine," which produces somewhat the same stimulating or exhilarating effects upon the nervous system, as the "theine" of tea, and the "caffeine" of coffee.

I. Tea is so well known as to require little description. Its best property is its soothing action on the nervous system, due to the essential principle in "theine." Its worst is due to its "tannin," a strong astringent, which hardens meat fibre, and retards its digestion in the stomach.

II. Coffee is found to be a useful alternative drink to tea, as it contains no tannin; but with some people it prevents sleep, and has to be therefore avoided just before going to bed.

It is a good stimulant to the heart; and is hence given to patients who need such a stimulant, as after partial drowning, etc.

MODEL LESSON No. 5 (STANDARD V.).

Syllabus, p. 5, art. 7, and "Notes," p. 11, art. 7.

ALCOHOLIC BEVERAGES.

I. Kinds.—Beverages are alcoholic or non-alcoholic.

II. Alcoholic Liquors.—The latter comprise malt liquors (beer, ales, etc.), wines, and spirits.

III. Stimulants.—These "other beverages" are mostly taken because from habit the drinkers have got to like them as an acquired taste; and because they have a temporary "stimulating," or exciting, effect on the nervous system of those who indulge in them.

IV. Unnecessary.—They are not necessary, as foods are; they give no useful form of heat (on which energy, or power to work, constantly depends); do not assist growth; nor aid in the repair of waste tissues in the body.

V. Not Foods.—They are not in the proper sense foods at all, like milk, starch, meat, etc.

VI. Injurious and Expensive.—They retard, rather than assist, the digestion of foods proper, and hinder their assimilation or absorption into the blood current and conversion into living tissue, in the body.

VII.—They are very expensive, and yet are unfortunately largely taken by those least able to afford to buy them (see p. 41).

VIII. Foster Unnatural Thirst.—They increase rather than diminish thirst; and leave behind them a habit which often becomes a craving for their use, which is really a disease that passes beyond the power of the will to control.

IX. Children and Alcohol.—Children are the least able to resist their injurious properties, and never need them except as drugs, or medicines, ordered by the doctor in accidents or disease. If children are brought up to take them, even in small quantities, a foundation is thereby laid from which in later life dangerous habits may arise that may pass beyond the power of the adult to control.

MODEL LESSON No. 6 (STANDARD V.).

Syllabus, p. 6, art. 2, and "Notes," p. 12, art. 2.

PROPERTIES OF ALCOHOL.

Here are two substances (water and alcohol) which **resemble** each other in the following respects:—

I. Resemblances.—1. They are both **liquids**.

2. They are both **colourless**.

Verify these heads by reference to their visible properties, as deduced by the children from observation.

II. Differences.—They differ, however, from each other in the following respects:—One is tasteless, the other has a hot, bitter, pungent taste, and burns the lips and tongue. One is without smell; the other has a faint smell.

One of these liquids is water, the other alcohol or spirit of wine.

Further tested in a porcelain dish we find that:—

III. *Properties of Alcohol.—1. **INFLAMMABLE.** Alcohol

*These properties are to be deduced by the children themselves from actual experiments.

burns (as hydrogen likewise does), giving out a pale bluish flame; whereas water will neither itself burn, nor support combustion (as oxygen will do).

2. **GIVES NO RESIDUUM.** The flame of burning alcohol when cooled by a porcelain dish passed through it, or held over it, gives no deposit of soot (carbon); but water and carbonic acid only. If it be burned in an evaporating dish, it will be totally consumed.

3. **COMBINES WITH WATER.**—Alcohol has a great affinity for water, as may be seen by shaking up a little of it with water, with which it mixes freely, so as not to be readily separable from it without distillation. It will search out and absorb to itself the moisture in animal or vegetable substances, living or dead. In this way alcohol makes such substances drier than before, and therefore harder and more difficult to digest—though it is useful in commerce, as it will “preserve” them when dead by thus making them dry.

Water, on the other hand, will dissolve most substances used as food, and thus help to loosen the substance, or texture, and prepare it for digestion.

4. **CREATES THIRST.** Water quenches thirst; alcohol will not do so, but rather adds to it, and thus creates a craving for itself. It does so because of its great attractive power, or “affinity” for water, which when removed from the body leaves a sensation of thirst.

5. **LIGHTER THAN WATER.** Alcohol is lighter than water, as may be seen by colouring a little of it dark red and then letting it float on the top of the water in a test tube.

ALCOHOL IN THE BODY.

We must not think that Alcohol will act in every respect inside the body as it does on substances that are dead and outside of the body; since living tissue has certain properties of its own which resist the action of Alcohol on it. But its action on the Blood and its Corpuscles and on the digestive secretions, is of a similar nature (by reason of its withdrawal of water from them) as on dead moist animal tissues.

Moreover, by its action on the nerves which govern the contraction of the muscular fibres in the walls of the smallest bloodvessels, Alcohol makes these small vessels "loose and baggy," so that they enlarge and thus detain the blood which should flow freely through them. This is the real meaning of "local inflammation," or the hot, red, and inflamed condition brought about by excessive use of Alcohol. The effects are visible in the flushed face of the heavy drinker, but similar effects, though out of sight, are produced in the tissues of the internal organs—the stomach, kidneys, liver, etc.

Alcohol is the most important ingredient, or constituent, in all alcoholic liquors (beers, wines, and spirits), and we have therefore considered chiefly this characteristic of intoxicating beverages. But as these beverages contain certain *other* ingredients, or constituents; and as Alcohol is found in them in varying proportions; each of the three groups (beer, wines, and spirits), and each member of each group has certain other special characteristics of its own which we ought also to consider.

ALCOHOLIC LIQUORS CONTRASTED WITH FOODS.

Beers.—Under the name of *Beer* we class all malt liquors, such as ale, porter, and stout. They are made by the malting of barley, and by the fermentation of the decoction of barley and sugar through the addition of yeast.

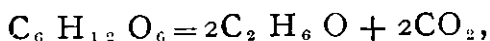
MALTING AND FERMENTATION.—In comparing the taste of barley with malt we notice that the latter has a sweetness in it not found in the barley. In the process of

malting a large proportion of the starch of barley has been converted into sugar, or something closely resembling it. This "sugar" is more properly called "maltose."

The barley contains a "ferment" in it, which sets up this change of starch into maltose. This ferment is known as "diastase," and it is produced by the steeping of the barley in water and the setting up of germination (sprouting) in the grain in the action of malting.

When the crushed malt is steeped in hot water, the soluble maltose is dissolved out of it, and makes "sweet wort." This sweet liquor is cooled down, and yeast being added to it a further conversion of substance takes place. The saccharine matter is by fermentation turned into Alcohol and Carbonic Acid, with a few other substances not requiring attention here. The result may be broadly expressed as follows :—

Glucose = Alcohol + Carbonic Acid ; or



where C stands for Carbon, H for Hydrogen, O for Oxygen, and in combination $C_6 H_{12} O_6$ stands for Glucose or Maltose ; $C_2 H_6 O$ for Alcohol, and CO_2 for Carbonic Acid.

In this process the sugar derived from the original starch in the grain during the malting process, is further converted into Alcohol and a smaller proportion of other and less injurious products. But the process is a very expensive one, not only in itself but still more in its final product ; since the process has turned a valuable Food (starch) into a liquid (Alcohol), which cannot be called a Food in any one of the following senses :

1. Food is necessary for Growth ; Alcohol is not so.

2. Food repairs waste ; Alcohol does not, although, by retarding healthy change, it adds to fatty tissue—the least important of all the tissues of the body, the most perishable, and if in large accumulations in the heart, liver, etc., the most dangerous to health, and even to life.

Every action of our Mind or Body is only possible to be carried on with waste of tissue as its consequence. There is only one possible means of repairing or making good this local waste. This is by means of Food. The proof of this assertion is that a man left without Food inevitably dies ; and that if the starving process be interrupted by the taking of Food, the body reasserts its power to do work, or to carry on its functions of Mind and Body.

Of all the tissues the muscular is the one that wears out the fastest, as most of our work in general is muscular work. This is the tissue the waste of which is repaired by nitrogenous foods.

3. Food gives the body Energy, or power for sustained work. Alcohol temporarily evokes the power to work, but only in the way of an injurious “ spurt.” It decreases the power of sustained work.

4. Food sustains the Heat of the Body, upon which the power of work depends. Alcohol gives the temporary feeling of added warmth ; but leaves the body as a whole colder than before.

The other alcoholic liquors are Wines and Spirits : the first containing only a small proportion of food principles, and these very expensive in their production : the latter no food principles at all useful in building up tissue.

SECTION II. FOR STANDARDS V. AND VI.

MODEL LESSON No. 7 (STANDARD VI.).

II. PROPORTION OF ALCOHOL IN BEERS, WINES, AND SPIRITS.

Syllabus, p. 6, art. 3, and p. 12, art. 3.

I. Analysis.—By means of a very inexpensive distilling and condensing apparatus, we can separately distil from beers, wines, and spirits the alcohol and water held by them in solution (or feeble chemical combination).

II. Proportions of Alcohol.—Such experiments show broadly that:—

- (1) Beers generally contain the smallest proportion of alcohol in the three groups.
- (2) Spirits generally contain the largest proportion of alcohol in the three groups.
- (3) Wines come between beers and spirits in this proportion.

But the experiments also show that the proportion varies in different kinds of beers, and in different wines, and in spirits according to the amount of water with which they are diluted, or weakened. Spirits are always diluted or weakened. These spirits are thus diluted since, even by confirmed toppers, they cannot be drunk in the pure or “neat” form, because of the burning sensation, and the injury they would cause to the lips, mouth and throat.

1. A fair average analysis of beers gives the following results, here stated in percentages and weights* :—

* Sets of bottles containing specimens of these analyses can be had. See appendix.

	Per Cent.	Grains.
Water	85.8	3753 $\frac{3}{4}$
Alcohol	7.2	315
Albumen	0.5	21 $\frac{1}{2}$
Sugar	0.5	21 $\frac{1}{2}$
Mineral	0.2	8 $\frac{3}{4}$
Refuse	5.8	253 $\frac{1}{2}$
	100.0	4375 = $\frac{1}{2}$ pint.

2. Port wine, here taken to represent wines generally, gives us under a similar analysis of $\frac{1}{2}$ pint:—

	Per Cent.	Grains.
Water	78.0	3412 $\frac{1}{2}$
Alcohol	17.5	765 $\frac{5}{8}$
Albumen	0.3	13 $\frac{1}{2}$
Sugar and acid	3.5	153 $\frac{1}{2}$
Mineral	0.2	8 $\frac{3}{4}$
Refuse	0.5	21 $\frac{1}{2}$
	100.0	4375 = $\frac{1}{2}$ pint.

3. Brandy, taken to represent spirits generally, gives us under like analysis:—

	Per Cent.	Grains.
Water	62.13	2718 $\frac{1}{4}$
Alcohol	37.72	1650 $\frac{1}{4}$
Refuse	1.15	6 $\frac{1}{2}$
	100.00	4375 = $\frac{1}{2}$ pint.

IV. *No Food in Alcohol.*—In the spirits there is no sugar, colouring matter, nor anything which can be considered at all as food material. That is to say, they contain nothing of a “feeding” nature, as in the small proportion of such unfermented ingredients, or constituents, in beers and wines. They can therefore give no addition whatever to the body’s strength, but only cause a wasteful output of such strength as already existed in the body before the spirits were taken.

EFFECTS OF ALCOHOL ON THE HUMAN BODY.

(*Syllabus*, p. 6, arts. 4, 5, and "*Notes*," p. 13, arts. 4, 5.)

The effect of Alcohol upon the Body, as with drugs and poisons in general, naturally depends on the quantity taken at a time ; and on the frequency of the indulgence in it. We can best enquire into these effects by considering them in their various stages.

I. General Effects of Alcohol Taken in Slight Doses.—First, dealing with Beer, as a type of alcoholic beverage most largely taken, we consider :

1. "**SLIGHT DOSES.**"—One pint of Beer, on the average, contains ten drachms of Alcohol : and a "slight dose" we should define as from 1 to 4 drachms. In other words, the quantity of Beer consumed is the comparatively small one of from 1-10th to 2-5ths of a pint. Two drachms of Alcohol would represent a tablespoonful of spirits ; not quite half a glassful of port ; and not quite a quarter of a pint of ale.

2. **RESPIRATION.**—One effect of a dose of this size is that Respiration, and the getting rid of carbonic acid in the exhaled breath, are diminished. There are several reasons why less carbonic acid (carbon dioxide) is given off from the breath or expired air after taking Alcohol.

In the first instance, the red corpuscles of the blood carry oxygen to the tissues of the capillaries from the lungs in respiration. They also take in carbonic acid in exchange for this : the oxygen expelling the carbonic acid, which is then given off at the lungs.

This reduction of absorbed oxygen by the red

corpuscles is an effect of alcohol on the corpuscles themselves, and on their proper work.*

This is equivalent to an interference with the withdrawal of impure air in the ventilation of a house. Such interference with the important function of Respiration will leave the blood in the small bloodvessels of the lungs less aerated, or oxygenated, than it would be without the Beer. This results because the waste products held in solution in the blood in the Lungs cannot so well escape into the small air passages of the Lungs, and from them into the outer atmosphere, as if no Beer had been taken.

3. HEART-BEATS.—Another effect with the same dose will be the action on the Heart and circulatory system. The beating of the Heart is increased in the number of its pulsations per minute. This is because the Heart has been stimulated, or spurred on by the Alcohol, as a horse is incited by whip or spur.

4. VASO-MOTOR NERVES.—But with this increased action of the muscles of the Heart and its connected bloodvessels, there will be diminished "tone," or power of control of the nerves that supply the muscles or fibres in the walls of the smaller bloodvessels (known as the "Vasomotor" nerves). This result is made evident by the flushing of the face and other parts of the body which are affected and are open to inspection. With this slight interference with the blood supply sent to the organs of sense (skin for feeling, mouth for taste, nose for smell, ears for hearing, and eyes for sight), and to the brain controlling the organs of sense, there is of course interference with their functions.

* F. R. Cheshire.

The finer sensations are weakened, so that they become less acute and accurate in what they register. Their power of "reaction," or resistance to the interfering agent, becomes also slightly interfered with. All persons who have to make use of the finer sensations of sight (as artists) and touch (as musicians) agree that the smallest doses of Alcohol impair the fineness of these discriminations. In this sense all Art lies at the mercy of Alcohol.

5. BALANCE.—In all these matters the Body is so beautifully constructed, and its powers are so delicately balanced, that there is generally quick power of recovery from the slight disturbance produced by the small doses of Alcohol taken, if time for recovery be given by denial to the intruder of a second visit. But this power of recovery in most cases depends on the frequency of previous indulgence in Alcohol. If this frequency be great, then even the slight doses give a cumulative effect and leave their mark on the disturbed functions of the human machine.

6. EFFECT VARIES.—But a good deal depends on the nature and condition of the person who takes the dose, and on the work he has to perform ; also on his surroundings, such as open air, the amount of muscular exercise taken, whether food be taken with the slight dose of Alcohol, and other similar circumstances. In this respect a peasant labourer, a farmer, or a coachman would have quicker power of recovery than a factory employée, or an ill-fed mechanic in an ill-ventilated workshop. But even under the best conditions a "slight dose" is found to be injurious rather than helpful to the body.

II. More than Slight Doses.—1. In larger quantities, but still below those regarded as “moderate,” these disturbing actions are increased; and other nerve centres besides those mentioned become involved in the disturbance.

2. The capillaries or smallest bloodvessels become distended owing to the weakening of the nerves that control the muscular fibres, that in turn regulate the size of the calibre of the capillaries.

3. The temperature of the Body is lowered as a whole; and its power of resisting extreme heat and cold diminished.

4. More gastric juice is secreted; though the process of digestion does not appear to be made any easier.

III. General Effects of Alcohol in Large Doses.—When the indulgence in alcoholic liquors is great, the effects become more evident.

1. The stimulation is followed by great depression and exhaustion. This effect is given in detail under the head of effects of Alcohol in great exertion in the Government Syllabus (Notes).

2. The temperature of the body falls: this is often proved in the case of drunkards locked up for the night in prison cells.

3. The brain ceases its healthy action, and loses its control over the nerves and muscles; and all intellectual processes become impossible. This result is the general evidence afforded by persons in an intoxicated condition.

4. The oxidation of waste matters is impeded, and the blood becomes deteriorated in quality.

5. The bloodvessels lose their elasticity, and are rendered liable to rupture under muscular exertion. This consequence of alcoholic indulgence is too frequently made evident by sudden death arising from cerebral hæmorrhage.

6. The vessels of the stomach become permanently gorged with blood, so that the stomach walls take on a red tint showing this congestion.

7. The livers of those who die from alcoholic indulgence are frequently "hob-nailed," and give unmistakable evidence of alcoholic poisoning.

8. The Registrar-General says that "The death-rate undoubtedly depends more upon the extent to which people are brought into contact with drink than upon anything else whatever."

9. Great numbers of people who take Alcohol think, because they notice no ill effects at the time, that it is doing them no harm. Those effects, however, are nevertheless present; and in later years, when the system becomes less active, the inevitable harmful results ensue.

DIGESTION.

Life depends for its very existence on the great functions of Circulation, Respiration, and Digestion. We have already seen that each of these functions may be impaired by taking Alcohol in any other than the smallest quantity. We have endeavoured to explain this action in the cases of Circulation and Respiration; but the process of Digestion is rather more difficult to understand, and the following attempt at explanation may be of service to the teacher.

The Digestive Process in the body varies with :

1. The *Kind* of Food taken.
2. The *Organ* of Digestion employed.
3. The Digestive *Secretions* doing the active work.

So far as Food is concerned, we have three principal Kinds of Food for our present consideration :

1. Starchy Foods.
2. " Meat " Foods.
3. Fatty Foods.

1. The *Starchy* Foods in the process of digestion have their starch converted into sugar : that is to say, the insoluble starch is changed into soluble sugar.

Starchy foods begin to be digested in the *Mouth*. The change is brought about there by means of a certain ingredient called Ptyalin, the active principle in the secretion of the *saliva*. Because of this fact of the saliva being implicated the process is known as *Salivary Digestion*.

The process thus begun is continued in the Intestines by means of another digestive secretion.

2. The " Meat " Foods, which comprise also vegetable substances like the gluten of wheat, and the flesh-forming materials in peas, beans, lentils, etc., are digested chiefly in the *Stomach*, by means of a digestive principle, Pepsin, found in the gastric juice. Here, therefore, the Pepsin of the gastric juice occupies a similar position to the Ptyalin of the saliva. From the organ in which the digestive process is carried out we call this *Gastric Digestion*.

After passing through the Mouth and Stomach, the food goes on to the Intestines—the third organ of digestion.

Here the digestive process, begun on the Starchy Foods in the Mouth, is continued, and the digestion of Fatty Foods is also forwarded, the conversion of the latter into a soluble condition being effected by means of secretions of the liver.

Intestinal Digestion is carried on by means of the following secretions, of which the most important agent is the Pancreatic Juice :—(1) Biliary; (2) Pancreatic; (3) Enteric.

It is thus seen that the final result is the rendering soluble the insoluble portions of food materials so that they may become capable of being absorbed into the blood.

We may now summarise the whole matter in tabular form, and leave this on the blackboard :

SUMMARY.

1. Salivary Digestion in the Mouth by means of Ptyalin (of Saliva).

2. Gastric Digestion in the Stomach by means of Pepsin (of Gastric Juice).

3. Intestinal Digestion in the Intestines by means of Pancreatic Juice, etc.

INFLUENCE OF ALCOHOL UPON DIGESTION.

1. Effect of Alcohol on Salivary Digestion.—Alcohol has a marked influence upon salivary digestion. One part of Ptyalin (the active principle of saliva) will change 2,000 parts of starch to sugar.

If we take two similar small quantities of a warm paste of starchy food material (arrowroot, corn flour or wheat flour), and add to both two or three drops of saliva, but to one of them only a little alcohol (brandy or methylated spirit), we note that less starch is converted into sugar in the latter case, as is proved by less starch disappearing by taking the fluid form of a thin syrup of sugar.

3. Effect of Alcohol on Gastric Digestion.—It has been already shown that alcohol renders food less digestible, by withdrawing water from it and making it hard and dry. But even the gastric juice itself is also affected by Alcohol, which precipitates and weakens the operation of the pepsin, the active principle. Experiments on the *living* body and outside it all show this result. We are thus led to conclude that Alcohol does not aid the process of either salivary or gastric digestion.

3. Effect of Alcohol on Intestinal Digestion.—This is of a somewhat similar action to that on gastric digestion. This is partly due to the power Alcohol has to kill germs which would cause the natural decomposition of foods; so that it interferes hurtfully with these bacterial germs, which are useful agents in the process of Digestion.

THE INTERPRETATION OF TABLES.

"Notes," pp. 16-17.

1. Census.—A census of the population is taken in Great Britain every ten years (1901, 1911, etc.) by the Registrar General's officers throughout the country. This census gives many particulars as to the occupation, age, etc., of every individual in the kingdom. From a study of these Census Tables we learn the following facts which bear upon the subject of "Temperance."

1. Deaths from Alcoholism.—We deal first with the *causes of death* of persons employed between the ages of 25 and 65. We find from the "Notes" that if we take 100 as representing the number of deaths due to taking Alcohol in such excess as to cause death (including *all* kinds of occupation), we get a great excess over the average of 100 in certain occupations. Thus among inn-keepers the numbers rises to 708, and among inn-servants to 815, instead of 100. That is to say, 7 and 8 times as many of these people, on the average, die from taking an excess of Alcohol, compared with deaths from Alcoholism of the people at large.

It would appear that among drinkers those living on public house premises yield the largest proportion of deaths from drunkenness. This excess in the proportion of deaths from drunkenness among persons employed in places of sale of intoxicants is, of course, what might be expected from their surroundings and temptations.

II. Total Number of Deaths.—But if we take the deaths from *all* causes (not those due to drunkenness alone), and again use the figure 100 to represent the number of such deaths, on the average, for all occupations, we find that again the innkeeper gives the high figure of 172 and the inn-servant 181 instead of 100.

III. Expectancy of Life.—With these figures before us, we see that Alcohol has a very important influence on Life and Death.

Another way of looking at this subject is to note that, as persons who take Alcohol to excess die in so much larger proportion than those who do not do so, their *Expectancy of Life* (or the average number of years they can count on to live in the future) must be much smaller than in the case of people who do not take Alcohol in excess.

IV. Insurance Tables.—But tables of Insurance and Friendly Societies show that total abstainers (who do not take Alcohol at all, even in the smallest quantities) have longer lives, or yield fewer deaths, or have greater Expectancy of Life than the general population. This is proved by comparing the Tables of the Oddfellows, Foresters, and other General Friendly Societies, with the Tables of the Rechabites, Sons of Temperance, and other Friendly Societies in which all the members are Total Abstainers.

V. Total Abstainers.—Many Insurance Offices give better terms for Insurance on the lives of Total Abstainers than on lives of persons who take Alcohol. The medical advisers of these offices know that the annual

payments made by these abstainers will be paid to the office for a greater number of years before death ensues than in the case of those who take Alcohol. Many years' experience in numerous offices confirms the soundness of this view.

Moreover, all Insurance Offices make very strict enquiries as to the drinking habits of the applicants for a life policy, and reject all those who are found on enquiry to be unsatisfactory in this matter. This fact shows what is *their* opinion as to the influence of Alcohol on life and death.

SECTION III., FOR STANDARD VII.

SOCIAL AND MORAL EFFECTS OF ALCOHOL.

In the preceding pages we have dealt with Alcohol in its personal or individual effects.

But we are not only individuals; we form a social community, or are "members" of a "body," in which if one member suffers all the members suffer with it. If Alcohol brings injury to individuals, the community has in one way or another to suffer, as for instance in the provision and maintenance of Workhouses, Lunatic Asylums, and Prisons, rendered necessary by the action of Alcohol.

Even if this were not the case, we are still our "brothers' keepers," and responsible for them; and hence must perforce give study and consideration to the subject of Temperance.

MODEL LESSON No. 8 (STANDARD VII.).

Syllabus, p. 7, and "Notes," p. 15 (g) and 18.2.

ALCOHOL AND THE MIND.

We have seen that we consist of both **body** and **mind**: and that both of these alike are affected by Alcohol. This has been shown in some detail with respect to the body: we have now to do the same with mind. But it will first be necessary to understand what we mean by "Mind."

We divided the body into three parts: Head, trunk, and limbs (see p. 11), and called these the "threefold aspect of body."

We may do the same with mind, and say it consists of **feeling** (or sensation), **will** (or volition) and **understanding** (or reason); and call these the "threefold aspect of mind."

I. Feeling.—The FEELINGS are the first to show their existence, which they do in the youngest of infants. The feelings depend on the organs of sensation (skin, tongue, nose, ears, and eyes). This shows their connection with body.

But the feelings go beyond these bodily—to mental sensations, such as love, fear, etc.

Throughout life these feelings are largely affected by Alcohol; so much so that drinkers generally lose proper control over their feelings, and let them master them, or, as we say, they become "maudlin."

II. Will.—Out of our feelings we get WILL. We will, or determine, to get close to things which give us pleasure; and away from things which produce painful feelings.

Our Will is very largely affected by the influence of Alcohol. Thus in the drinker we have one who not only has weakened control over his feelings (or is "maudlin"); but one who has, with this weakness, insufficient control over his will. He will not face the difficulty of self-improvement by total abstinence; though he may know this abstinence, in his case, is the only salvation for him. He has yielded so long and so often to temptation, that he does not even wish to fight against it.

III. Reason.—Lastly, growing out of feeling and will, we have REASON given to us, which brings every matter of doubt and difficulty before a Court of Justice (Conscience) to "try" it, and to induce us to eschew the evil and follow the good in Conduct

This Reason, or understanding, is the highest of the three divisions of the mind, and the distinguishing mark of man over the brute; and throughout these lessons we have been constantly appealing to it. Every reasonable person must ask himself whether he had better take any alcoholic beverages at all, or leave them quite alone, and then act as his Reason dictates.

MODEL LESSON No. 9 (STANDARD VII.).

Syllabus, p. 7, art. 3, and "Notes," p. 19, art. 3.

II. THE QUESTION OF COST.*

I. Alcohol Expensive.—We have already seen that alcoholic beverages contain no Food Principles at all, in the case of spirits; and but very little in the case of wines and beers (see p. 28).

We have also seen that, in the case of beers, what little Food Principles they contain (see p. 25) have been derived from the very wasteful and extravagant conversion of starch into sugar, and of sugar into alcohol, in the processes of malting, fermentation, and distilling.

II. Too Costly.—A glass of beer (or of wine) is, therefore, so far as food is concerned, a much more expensive article than a "penny loaf." It might accordingly be said that no poor person can "afford" to drink beer; since he needs all his money in other and more useful directions, for his family, even if not for himself. Moreover, the poor man has a future to provide for. The times of sickness, unemployment, and of old age, when no more wages can be hoped for, are sure to come to him, unless indeed death previously steps in and closes the account, so far as the individual is concerned. And even in the latter case, there are generally wives and children to be thought of when the wage-earner is removed.

III. Selfishness.—If the money necessary for the wants of these wives and children be not provided by the husbands and parents, they are meanly and selfishly shifting them on to the shoulders of others (many of whom are no richer than themselves), who have their own dependents to provide for.

*This subject is admirably dealt with in the "Notes," and needs little further illustration here.

But besides the loss of **money** ill-spent on Alcohol, there are other losses which indulgence in drinks brings with it.

IV. Unemployment.—The employer, even if he takes Alcohol himself, is usually keen enough in looking after his own monied interests. He generally prefers an employée who does not frequent public-houses, to one that does so. He knows that his valuable machinery can easily be damaged by a worker whose nerves are not steady in the use of the machine; and that the early morning factory bell does not always bring such an employée to the factory; that his machinery is running to waste in consequence: and that such a worker is more frequently on the sick list than others.

So when slack times come the employer gets rid of his least profitable, or most vexatious "hands"; and retains the sober men.

This consideration of employment ought not to be the determining motive of a workman's action in the matter of taking or abstaining from Alcohol; but it also ought not to be ignored, because of the man's wife and children.

The working classes form the bulk of the nation in point of numbers (see "Notes," p. 19, art. 3); as a consequence, they spend the bulk of the money expended on the "National Drink Bill," or five-eighths of the whole.

V. Self-Taxation.—This National Drink Bill is about equal in amount to all the taxation of the country. The working classes thus tax themselves to the amount of more than one hundred millions of pounds every year; or 5s. per head a week on the average. So that if they chose they could, by not spending this drink-money, but investing it wisely, e.g., in a Building Society, live rent free, and in some cases have enough even to pay their rates in addition. The rent collector is a man whose face is often dreaded by the very person who, if he chose, need never look at him. In addition, the money thus saved would supply better food, more suitable clothing, and many "comforts," which have to be dispensed with for the brief indulgence of a drinking habit.

MODEL LESSON No. 10 (STANDARD VII.).

Syllabus, p. 7, art. 4, and "Notes," p. 21, art. 4.

THE SOCIAL SIDE OF THE QUESTION.

I. Man is a Social Animal.—At first men in a savage state fight each for his own hand. Then they collect, at a later time, into tribes, and set up **customs**, which are meant for the good of the tribe, rather than of the individual. Gradually these customs become **laws**: which are still designed for the benefit of the whole tribe, now growing into a nation.

Lastly, civilised people think so much more of the community than of the individual, that they establish **hospitals** for the sick; **asylums** for the unfortunate; and **prisons** for the criminals. All these institutions cost money to establish and to maintain: and this money has to come, mainly, out of the pockets of the industrious and thrifty in the community. Idleness and indulgence in drink are two causes, among others, which send people to the workhouse, prison, and lunatic asylum.

II. Rights of the Community.—This is the reason why everyone has a right, as well as a Christian duty, to encourage "Temperance" on the part of others as well as himself; they need to protect their own homes and their own families, and their own purses against needless expenses brought about by the indulgence of others in drinking.

III. Temperance and the Young.—But the class to which Temperance may most effectively be taught, is the young. Very often with the older, and with confirmed drinkers, it is almost useless to preach Temperance. The unfortunate victims **know** that they are on the downward path leading to destruction; but habit has become too strong for Reason; and they have lost Will-power. They go to destruction with their eyes open: helpless in the present and hopeless of the future.

IV. Habits.—With children, Habits are not yet formed, but in the process of formation. With children there is no craving for alcoholic beverages; rather a natural aversion from the smell or taste of beer, etc. They also if born with good natural intuitions dislike the low associations so often connected with the public-house of the lower type.

Our teaching, therefore, in School, and in Bands of Hope and Temperance Societies, should keep up this healthy feeling of repugnance, and it is hoped that the increase of Temperance Teaching in our schools may help to cultivate this healthy feeling.

In this way health and happiness; sobriety and employment; longer life and more usefulness in it; may replace much of the disease and wretchedness; the drunkenness and consequent unemployment; the shorter life and aimless existence which form so serious a blot on our civilisation.

In this matter it is hoped that children will themselves become great helpers in attaining a yet higher standard of civilisation, and that they will generally respond to the good advice of their teachers, and in their future life avoid those drinks which we have learned are so seductive and so dangerous.

And now our task is ended, and we commend the duty of completing it to the teachers of the Elementary Schools and to the noble and devoted band of workers of the Band of Hope Union, with the earnest wish and prayer that their labours may redound to the benefit of the children of our beloved country.

APPENDIX I.

We append the text of the Syllabus, for the convenience of teachers who desire to make use of it, but may not have a copy at hand. The complete pamphlet, however, contains several pages of valuable "Notes," for the sake of which the teacher should provide himself with a copy.*

In a Prefatory Note, signed by Sir Robert L. Morant, K.C.B. (Permanent Secretary of the Board of Education), the *raison d'être* of the Syllabus is given, together with some instructions as to how it should be used. We quote the following paragraphs :—

It is hoped that in course of time such instruction on the subject of "Temperance," in its restricted sense, as is suitable to Public Elementary Schools will be given by the regular Staff as part of the teaching of the elementary rules of personal health which should be included in the curriculum of every school. Article 2 (g) of the Code for 1908 indicates that such instruction should be given wherever possible, and Hygiene (which, of course, comprehends instruction relating to alcoholic drinks) is now included as one of the regular subjects for Two Year Students in Training Colleges (Article 15 (a) of the Regulations for the Training of Teachers for Elementary Schools).

At present, however, some Schools have on their staff no teachers who have the special knowledge required for giving teaching of this kind, and in order that the scholars may receive instruction in "Temperance," the services of special peripatetic teachers have been offered by various Societies and Organisations, and have in many cases been accepted by Local Education Authorities and Managers of Schools. Such instruction has been allowed to count towards the period of secular instruction required by the Code. These extraneous teachers, however competent they may be, have not always the

*This may be obtained from the publishers of this book, price 2½d., post free.

particular qualifications required by the Code, nor the experience of the methods of teaching suitable to scholars in Public Elementary Schools, which are possessed by the regular teachers on the staff of the schools. Further, the syllabuses of "Temperance" lectures to be given by extraneous teachers which have been submitted for the Board's approval have been very various, and in some cases have not been specially designed for the instruction of scholars in Public Elementary Schools, nor have they always been appropriate to that purpose. In these circumstances the Board have come to the conclusion that the time has come for the issue of an official Syllabus to which all instruction in "Temperance" (whether given by extraneous teachers or by teachers on the ordinary staff) should conform in general character, and, to some, extent in detail. The Board believe this course to be essential in order to provide security that the teaching given on this difficult matter shall be both accurate in its statement of facts and suitable in its manner of presentation to scholars in Public Elementary Schools.

The following Syllabus has accordingly been framed as a "Model" Syllabus for use by teachers in Public Elementary Schools, whether they are or are not members of the School Staff, and the Board of Education will not in ordinary circumstances be prepared to approve under Article 3 of the Code any Syllabus of instruction which departs substantially from this Model. It is suggested that at least three lessons in the subject should be given to the children each year. It is, however, desirable to arrange, so far as may be possible, that if any part of the instruction is given to children who are under 10 years of age, it should be only that which is of the broadest and most general character, and that lessons on the matter of the Third Section should only be given to children who are over 12 years of age. Where three lessons cannot be given, the teacher may be able to cover the ground in rather less detail in two lessons, and where one lesson only is given, it is preferable that the matter in Section III. of the Syllabus should be very lightly touched, the main attention being concentrated on Sections I. and II. Where the lessons are given at distant intervals, as will sometimes be the case, it is clearly desirable to begin the later lessons by a brief recapitulation of those which have preceded. There is an obvious advantage in securing that a series of three lessons is given to the children within a comparatively short period. Lessons on this subject need not necessarily be grouped under a separate head in the curriculum, but

can appropriately be included in instruction on Hygiene, of which indeed they form a part.

It will be observed that the principle of the Syllabus is to proceed, as far as possible, by means of question and answer, from what the child already knows to what it does not know. By this means the child is brought to express what it has already experienced, and is led on, by amplification and illustration, to realise what is most conducive to a healthy life. Technical terms and language which a child would not understand have been avoided as far as practicable, and it is of the highest importance that in using the Syllabus the teacher should be careful to employ only the simplest language.

The teacher will know that a temperate life depends mainly on good habits and the appreciation and practice of a few simple and direct rules of health and conduct, and is therefore largely a matter of good training. There are open to the teachers on the Staff of the School frequent opportunities, apart from the regular lessons, of impressing upon the scholars the importance of habits of self-control. It should be the object of any special instruction in "Temperance," as in other departments of Hygiene, to supply in a simple intelligible form the broad truths of the subject and plain reasons for the good habits which it should be the constant aim of the School life, no less than of the Home life, to develop in the scholars.

"Temperance" teaching in Public Elementary Schools should therefore aim mainly at impressing upon the scholars the manifest advantages of abstemiousness, and the absence of advantage in, and the positive risks and dangers of, any departure from it. The advice or injunction given should be based upon the broad facts of common experience, such as children can readily understand, and upon the conclusions of trained observers (e.g., as to the extent to which the power to do mental and physical work is affected by the consumption of alcohol in its ordinary forms), rather than upon the results of laboratory experiments or pathological studies. The latter may be valuable in the teaching of advanced students of Hygiene, but can have little, if any, real meaning for children. The teacher should carefully avoid anything, whether in the details or in the methods of dealing with them, calculated to excite morbid curiosity or fear. Instruction on the subject of "Temperance" should itself be temperate and should make a sober appeal to such reasoning capacity as a child possesses and to the ideas of decent, self-respecting and dutiful living which every good teacher endeavours to present to and cultivate in the children under his charge.

SYLLABUS.

SECTION I.

EATING AND DRINKING : FOOD AND ITS USE.

1. What things do we eat?

2. The different kinds of food.

Meats, fats, starches, sugars, salt. Water in food.

3. What is the use of our food? Why food is necessary.

(a) Food is necessary for the growth of the body.

(b) Food prevents the body from becoming thin and wearing away. It repairs waste.

(c) It is from food that we get our strength and power to work.

(d) It is by food that the body is kept warm.

(e) The working of the mind depends upon the condition of the body. If the body is not properly fed the mind will not work as well.

4. Overfeeding and underfeeding. Too little food is bad for the body ; too much food is bad also.

5. The special usefulness of the different kinds of food.

Why people eat various kinds of food, and why they are wise to do so.

6. Things which people eat and drink for pleasure.

Sweets, cakes, tea, coffee, and cocoa. Some of these things are foods or quench thirst. The value of each. Why people drink tea and coffee.

7. Other beverages.

Besides these beverages, which are in part useful, people also take for pleasure other beverages, such as beer, wine, spirits. These are not useful in the ways in which our ordinary food, and such things as cocoa and milk, are useful. People often do themselves great harm by taking too much beer, wine, and spirits.

The chief reason for this is that these beverages contain Alcohol and little or no real food-substance.

SECTION II.

ALCOHOL.—EFFECTS OF ALCOHOLIC BEVERAGES ON THE BODY.

1. The presence of Alcohol in beer, wine, and spirits.

Not only are beer, wine, and spirits not useful to us in the same way that our ordinary food is useful; they also contain varying proportions of alcohol, which in pure form is injurious to the human body.

2. Some characteristics and uses of pure Alcohol.

3. The proportion of Alcohol in beer, wine, and spirits.

It is impossible to drink alcohol undiluted, because of the direct injury and pain it would produce.

The harmful effects of alcohol are weakened, though not destroyed, when it is mixed with water and other things, as in alcoholic beverages.

4. The drinking of alcoholic beverages may bring about injurious effects and changes in our bodies, which may be considered under the following headings :—

The effect of Alcohol on :—

- (a) Growth.
 - (b) The power of the body to resist disease.
 - (c) The body's strength and power to work.
 - (d) The proper digestion of food.
 - (e) The heat of the body.
 - (f) The control of the body which is exercised by the brain.
 - (g) The intelligence and understanding.
5. The effects of excessive drinking of Alcohol :—
- (a) The man or woman who habitually drinks too much Alcohol may become a mental or physical wreck.
 - (b) Persons who drink in excess do not, as a rule, have long or healthy lives. The evidence of this.

SECTION III.

EVIL CONSEQUENCES OF INTEMPERANCE TO THE INDIVIDUAL, TO THE HOME, AND TO THE STATE.

(For children over 12 only.)

1. The drinking of alcoholic beverages not only may have bad effects upon the body and mind of the individual, but also may be followed by still more serious consequences, namely, moral injury to himself and great harm to others.

2. The importance of self-control and temperance in all things. Freedom is lost if evil habits are acquired.
3. The personal consequences of excessive drinking of Alcohol :—
 - (a) Waste of money which could be wisely spent or saved. The value of thrift.
 - (b) Loss of self-respect.
 - (c) Unfitness for work ; loss of employment. Pauperism.
 - (d) Ill-health ; disease. Insanity.
 - (e) Neglect of duty ; moral degradation. Crime.
 - (f) The ruin of homes ; unhappiness and suffering of men, women, and children.

4. The social evils which result from alcoholic excess.

The habit of alcoholic excess affects not only the individual and his family, but also the State, *i.e.*, the whole of the people. There is wasteful expenditure of money ; and paupers, lunatics, and criminals are a heavy burden on the public. The working powers of the people as a whole are impaired, and so the prosperity of the nation itself is undermined.

APPENDIX II.

THE following books and other publications have either been referred to in the foregoing pages or are mentioned as being calculated to assist teachers in the preparation and delivery of lessons inculcating Temperance principles.

They may all be obtained from the Union Publishing House, 59-60, Old Bailey, London, E.C. The prices named, except those marked "net," are subject to a discount of 25 per cent.

TEXT BOOKS FOR TEACHERS.

Abstinence and Hard Work. By CHARLES WAKELY. A valuable collection of facts and incidents, embodying the experience of men in all classes of trades and occupations, and proving that hard work of every kind can be best performed without alcohol. Printed in clear type on superior paper, with illustrations; crown 8vo. Price, paper, 6d. (Postage 1d.); Cloth boards, 1s., (Postage 1½d.)

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Alcohol and the Human Body. By Sir VICTOR HORSLEY, F.R.S., and Dr. MARY STURGE. 370 pages with numerous diagrams and coloured plates. 2s. 6d. net. (Postage 4d.)

Alcoholism. Social, Industrial, Crime. By W. C. SULLIVAN, M.D. 3s. 6d. net. (Postage 4d.)

Alcohol Problem, The, in its Biological Aspect. By T. N. KELYNACK, M.D., M.R.C.P. Cloth, 2s. (Postage 2d.)

Case for Total Abstinence, The. A Prize Essay. By W. J. LACEY. Cloth boards, 2s. (Postage, 4d.)

Chemistry as Applied to Temperance: with 50 illustrations and directions for 112 simple Chemical Experiments. By W. N. EDWARDS, F.C.S. 6d. (Postage 1d.)

Effect of Alcohol upon the Human Brain, The. Lees and Raper Memorial Lecture. By Sir VICTOR HORSLEY, M.B., F.R.C.S., F.R.S. 4d. (Postage 1d.)

Fight the Drink: A handbook for Temperance Speakers, Day School Teachers, Temperance Science Classes, etc. Setting forth Physiological, Financial, and Social Reasons for Fighting the Drink. By W. CHANDOS WILSON. A.—Teachers' Edition, with Notes. B.—Scholars' Edition, without Notes. Price of either edition, 3d. net. (Postage 1d.)

Food and its Functions. By JAMES KNIGHT, M.A., B.Sc. 2s. 6d. (Postage 3d.)

Health for the Million. By A. B. OLSEN, M.D., and E. L. OLSEN, M.A. With an Introduction by G. SIMS WOODHEAD, M.D. 2s. 6d. net. and 1s. 6d. net. (Postage 3d.)

Health Reader, The. By W. HOSKYNs-ABRAHALL, with an Introduction by Sir VICTOR HORSLEY, F.R.S. Illustrated. Cloth 1s. 6d. net. (Postage 3d.)

Hints and Helps. A Manual of Incidental Temperance Teaching. By CHARLES WAKELY. A valuable work, covering many points referred to in the Temperance Syllabus. 250 pages, crown 8vo Cloth boards, price 2s. net. (Postage 4d.)

How to be Well and Strong. Teachers' Notes, with 44 illustrations and details of 60 interesting and useful Experiments. Strong paper cover, 4d. net. (Postage 1d.)

Hygiene based on Physiology, for School Teachers. By WATT SMITH. 6s. (Postage 4d.)

Hygiene and Temperance in the Elementary and Secondary Schools. A Statement of what has been done, and a plea for its existence. By W. N. EDWARDS, F.C.S. 2d. (Postage $\frac{1}{2}$ d.)

Non-Alcoholic Cookery. By MARY E. DOCWRA. 9d. (Post. 1d.)

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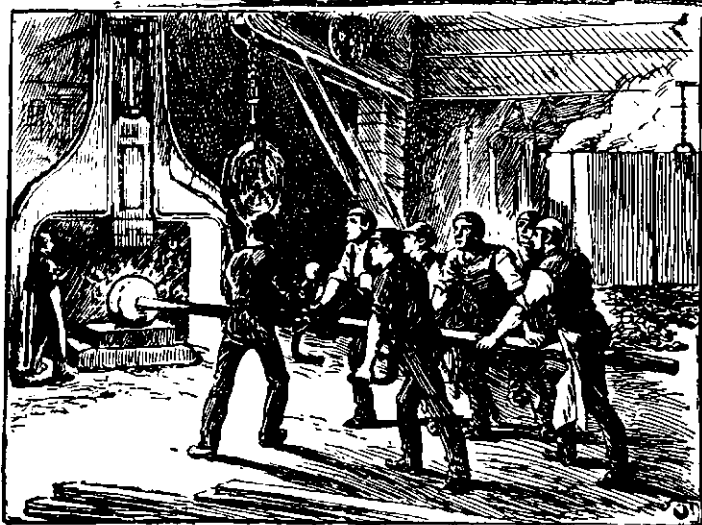
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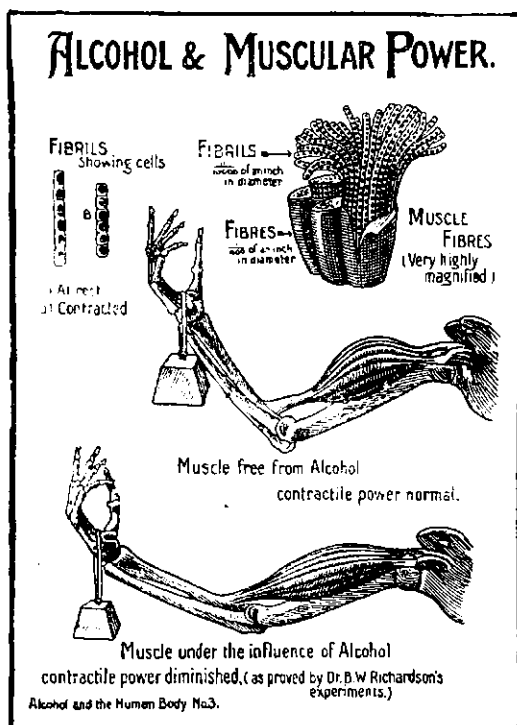
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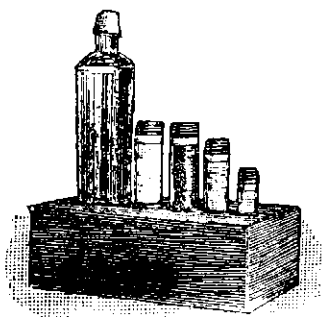
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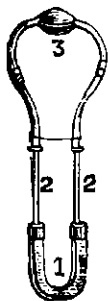
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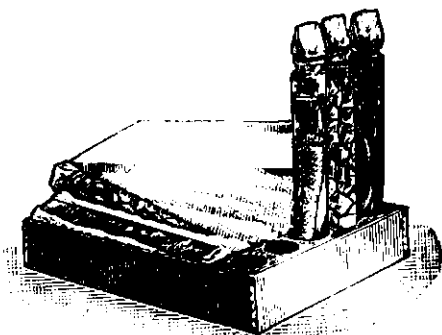


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