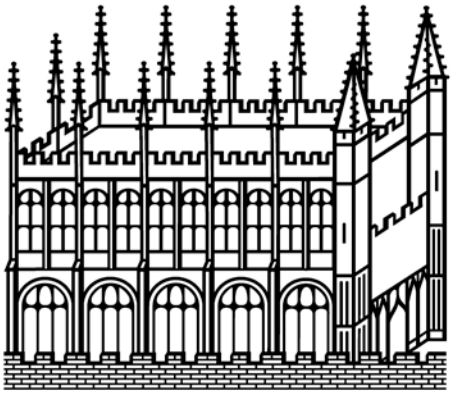

CIRCLE OF KNOWLEDGE.

MANUAL. I.

GRADUATED READING;

COMPRISING

A CIRCLE OF KNOWLEDGE

IN 200 LESSONS.

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GRADATION I, WITH MANUAL.

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PREFACE.

The object of the present work is to supply a series of elementary lessons suitable both for school and for home instruction. To realize this a more comprehensive and systematic arrangement of subjects has been attempted than any at present existing in the English Language, and a method of graduating the Lessons has been adopted which accommodates the series to children of different degrees of advancement.

For the junior pupils a mere outline of simple facts is drawn up in short sentences ; the lessons of this series abounding in nouns. For pupils a little more advanced in knowledge, additional information is embodied in lessons with longer sentences. For pupils of a higher order still, the lessons are amplified by extended details and additional facts, conveyed in language less simple, and requiring a greater exercise of the reasoning powers.

The child of five or six years old is provided with a series of lessons in a bold type, each of which, including the observations of the teacher, will be found sufficiently long to occupy an hour. The second series is adapted to the pupil a year older or more advanced in acquirements. For the child who is yet another year in advance a third series is provided, each lesson of which, though double the length of the second will not engage the senior pupils a longer time than the younger ones will have to devote to their lesson. Thus children of different ages in a family, or classes in a school, are provided with lessons graduated according to their capabilities which are to be read, taught, explained, illustrated, and studied simultaneously.

The advantages resulting from such a course of lessons are obvious. The mind of the teacher is thereby directed to one subject only for as many classes as can be thus occupied ; and the illustrations and explanations requisite for one class will be suitable to all. The elder pupils will derive advantage from the simplicity with which the teacher treats each subject for the youngest ; and the youngest will have their views enlarged by the expositions which are given to the more intelligent scholars.

The simultaneous examination of the several classes upon each lesson will save time, and awaken the interest of both teachers and scholars. Questions adapted to the respective acquisitions of the

pupils should be proposed so as to give even the youngest an opportunity of answering, and so as to awaken the ingenuity of the eldest. It has not been thought desirable to append such questions to the lessons from a conviction that none could be offered equal to the spontaneous examinations of an intelligent teacher; since all books, however good, are but auxiliaries to the explanations, remarks, and labours of the teacher, to save his time from being unduly occupied in the preparation of different subjects. *Prepared questions* may, however, be desirable for the inexperienced, for monitors, and for those to whom teaching is only an occasional occupation; for such, a series of Manuals will be provided, which, it is hoped, will aid the teacher in the more complete execution of his work.

Reading-books on subjects similar to those of the following lessons are very popular in the best of the continental schools. Among those in the German language are the *Orbis Pictus*, by *Gailer; Kinderfreund*, by *Wilmsen; Denkfreund ein Lehr-und-Lesebuch*, by *Schlez;* and in the French schools *L'ami des Enfans*, and *L'ami des Ecoliers*, are well known.

As it is desirable that the teacher should secure the attention of his pupils as soon as possible, subjects have been selected such as all children are interested in, such as they continually ask questions about, and such as are illustrated by pictures in popular works easily accessible to teachers and to parents. Great pains have been taken to exclude everything that might be considered cold and lifeless, to create an interest for common things and every day life, and to make all the lessons natural and animating.

The number of lessons—*two hundred*—has not been fixed upon without an object. In most schools five days a week are devoted to teaching, and in nearly all there are at least forty clear weeks in the school-year. One lesson a day would therefore take the pupils through the series in a year; at the end of which time a new class might commence with the *First Gradation;* the class that has already gone through those lessons would take up the *Second Gradation;* and the class that has finished the second, would begin with the *Third Gradation.* As each series of lessons is complete in itself, any series may be used independent of the others; while for individual pupils the three Gradations would naturally succeed each other as reading books.

It has been sufficiently proved that those who cannot read may be taught *without* the medium of the alphabet, *without* syllabising w

and *without* spelling. All that is requisite is that a teacher should take a lesson, and place it before a class ; that he should read deliberately the whole lesson, so as to possess the minds of the pupils with the subject ; then that he should read the words of the first sentence pointing to each word as he reads it ; that the pupils should, first *simultaneously*, then *individually*, repeat each word after him—their eyes being fixed on the lesson—and after each new sentence that the teacher should combine with it those that precede it. The entire lesson is then to be read by each pupil of the class without the aid of the teacher, unless a word should occur which causes hesitation when the teacher is to pronounce such word—not allow the pupil to spell it. In the preface to the little work, "Reading without Spelling," a detailed plan is given of the course recommended for the attainment of this object.

Immediately after reading, whenever the arrangements will permit, the same lesson should be taken as a writing or dictation exercise ; thus accustoming the pupils to write words with which their reading-lesson has made them familiar. For the first step in this exercise, the chalk and tablet, and the elliptical mode of teaching might be very advantageously applied.

For pupils who use the Second Gradation a similar elliptical exercise would be desirable, varying it by sometimes leaving out all the *nouns*, at other times all the *verbs ;* according as one kind of word or the other abounds in the lesson. Pupils who use the Third Gradation will be sufficiently advanced to reproduce their lessons from the ordinary mode of dictation, but they should also be required to write occasionally some part of it from memory, as an exercise in writing and spelling, and also as a proof of their comprehension of the subject.

The thanks of the Author are due to many teachers who have introduced the "Circle of Knowledge" into their schools for valuable suggestions ; and it is hoped that the present edition, which has received a few verbal alterations, will prove more acceptable to them, and more worthy of the attention of the public.

The Author would here disavow all intention of meddling with or teaching religious subjects, further than the statement of the most general truths. If these lessons be properly taught, the teacher will supply both on this and other topics details altogether unsuitable for a work so general and comprehensive.

CHARLES BAKER.

MANUAL EDITION.

The Compiler of the Circle of Knowledge wishes it to be understood that the Explanations and Questions added to this Edition are not intended to supersede the effective remarks and examinations of intelligent and experienced teachers, but that they are prepared as an aid to pupil-teachers, young governesses, mothers, and "those to whom teaching is only an occasional occupation."

The *Explanations* in Gradation I. are as short and simple as the nature of the subjects will allow ; those of Gradation II. are longer, and comprise a little more knowledge than the lessons contain ; those of Gradation III. are of a higher character, and in most instances, the words explained are traced to their derivatives.

The *Questions* in the first Gradation are to a great extent literal and suggestive ; if the pupils questioned have made the information their own in the words of the lesson, it is as much as can be expected ; and answers, pretty nearly in those words, are all that should be required ; such answers are an evidence of attention, hard enough to secure, from children who are learning to read. In the second Gradation illustrative matter is brought to bear upon the subjects of the lessons, so as to break the monotony of an exact adherence to the *words* of the lessons, and to induce the pupils to think. In the third Gradation the questions are generally of such a character as will thoroughly test the amount of knowledge acquired, neither mechanical on the one hand, nor suggestive of the answers on the other, except, when leading to a part of a subject on which important questions are to follow ; the object being to ascertain that the pupils possess an intelligent knowledge of the lessons.

In all the Gradations the Questions occasionally turn upon the information conveyed in the Explanations. It has not been considered necessary to employ reference types, as the explanations and questions are placed in juxtaposition, with the lessons.

☞ *The notes marked * are to be taught as Object Lessons.*

CIRCLE OF KNOWLEDGE.

SECTION I.—INTRODUCTORY.

(The point preceding words or phrases refers to the Manual.)

Lesson 1. *Objects.*

All things that we can see are ·*objects*. A stone, a book, a tree, a bird, a horse, a pin, a leaf, a star, a hat are all *objects*. Some of these objects were ·made by man; the others were ·created by ·God. The hat, the pin, and the book were made ·by man. The stone, the tree, the bird, the horse, the star, and the leaf were created ·by God.

Lesson 2. *Creatures.*

All ·created things are ·*creatures*. The stone, the leaf, the horse, the bird, the tree, and the star, are all creatures. Some creatures are called ·*beings*. The horse, the ·bird, and the tree, are beings. Some creatures are called ·*things*. The star, the leaf, and the stone, are things.

Lesson 1.

objects—the things we perceive about us, as men, animals, books, chairs, &c.

made by man--formed by man's hands, or with tools, as chairs, candles, pins, &c.

created—to create is to cause to exist ; God created the sun, moon, trees, &c,

God—the Great Being who created all other beings and thins.

by man—but man could not make them without materials, as tables from wood, bricks from clay, &c.

by God—called into existence by the Creator of all things.

What are all the things we see called ?

Tell me some of the objects around us.

What objects are named in the lesson ?

Which of them were made by man ?

Could man make them without materials ?

Of what materials are tables made ?

Which objects were not made by man ?

Who called them into existence ?

Name some other objects made by man.

Name some that were created by God.

Lesson 2.

created things—things that God created ; several were named in the first lesson. Tell me them

creatures—created things ; everything that is created whether it has life or not.

beings—creatures that have life, every living creature is a being.

things—some of the things about us were created by God ; others were made by man. If objects have life we call them *beings*, if not, *things*.

bird—it has powers of growth, life, and motion, which none of the objects made by man possess.

What are created things called ?

Tell me some of these things.

Is a brick a creature ?

Why not ?

Tell me the names of some created things that have life.

Tell me some that have not life.

What creatures are called beings ?

Why is a horse a being ?

Why is not a stone a being ?

How does a bird differ from all the objects made by man ?

What creatures are things ?

Lesson 3. *Human Beings.*

Mankind are called ·*human beings.* Human beings have both ·bodies and ·souls. Their bodies grow; a child is bigger than an infant, and a man is bigger than a child. Their souls are made to ·understand, ·to reason, and to love. Mankind know what is right and what is wrong, and they are ·accountable to God for their actions.

SECTION II. THE BODY AND ITS PARTS.

Lesson 4. *The Head.*

The chief parts of the body are the head, the ·trunk, and the ·limbs. The head is the highest part of the body. It is ·composed of the ·skull and the face. The skull includes the forehead, the crown, and the back and sides of the head. It contains and ·protects the ·brain. The face is at the front of the head; it has several ·features.

Lesson 3.

human beings—men, women, and children, the race of mankind.

bodies—the frame of man and animals.

souls—the part of man that never dies, the soul thinks and knows.

understand—to know thoroughly, to have correct ideas.

to reason—to distinguish good from evil, truth from error.

accountable—all beings who have reason, must account to God for their words and deeds. Brutes are not accountable beings.

What are mankind called?
What do you mean by our bodies?
What is meant by the soul?
Prove that our bodies grow.
Can a child understand these lessons.
Why can a child understand them?
Shew me how a little child can reason.
Why does a child love its mother?
Do you all know right from wrong?
Prove it to me.
To whom are all reasonable beings accountable?

Lesson 4.

trunk—the body without the head and limbs.

limbs—the arms and hands, and the legs and feet.

composed—made up of parts, bread is composed of flour, water, yeast, and salt.

skull—the hard bony part of the head, it is generally covered with hair.

protect—to keep from danger; warm clothing protects us from cold.

brain—the soft mass within the skull.

features—the parts of the face; as the nose, the eyes, the eyebrows, the chin, &c.

What are the chief parts of the body called?
Tell me what is meant by the trunk?
What parts are meant by the limbs?
Which is the highest part of the body?
Of what separate parts is it composed?
Describe the skull?
What are its parts?
What is within the skull?
What protects the brain?
What do you mean by the brain?
What is the front of the head called?
Point to the features as I name them.

Lesson 5. *The Face.*

Our faces are ·provided with eyes, eyebrows, cheeks, lips, a nose, and a chin. The eyes are ·to see with; they are provided with eyelids. The nose is ·to smell with; it has openings on each side, called nostrils. The lips are ·to talk and ·to eat with; they are very ·flexible; and are kept from ·sinking inwards by the teeth.

Lesson 6. *The Trunk.*

The largest part of the body is the trunk. The parts of the trunk are the ·shoulders, the ·chest, the ·ribs, the ·belly, and the ·back. The upper part of the trunk is the chest. The sides of the chest are the ribs. The ribs are joined to the ·spine, and some of them to the ·breast-bone. The spine is sometimes called the back-bone.

Lesson 5.

provided—ready for use, supplied with.

to see—to perceive and enjoy the various colours, and shapes of objects around us.

to smell—to perceive the various odours of substances.

to talk—to utter words, expressing our thoughts and feelings.

to eat—to take food in order to preserve life.

flexible—easy to be bent, not stiff.

sinking inwards—if the mouth were not thus kept in form by the jaws and teeth, the nose and chin would nearly meet.

With what features is the face provided?

What would be the consequence if we had not eyes?

What are the advantages of eyes to us?

Of what use is the nose to us?

What are the openings of the nose called?

Of what use are the lips?

When is it of use to talk?

When is it wrong to talk?

How do we know this?

What is the use of eating?

Could we talk plainly if our lips were stiff?

Of what use are the teeth?

How do they preserve the form of the mouth?

Lesson 6.

shoulders—the part where the arms are joined to the trunk.

chest—the upper part of the trunk, it contains the heart, lungs, &c.

ribs—the curved bones of the trunk which protect the heart, lungs, &c., their direction is from the spine to the breast-bone.

belly—the lower part of the body.

back—the hinder part of the body.

spine—the bones down the middle of the back.

breast-bone—the bone in front of the chest.

Which is the largest part of the body?

What are the parts of the trunk? Point to them.

What do you mean by the chest?

What bones are on the sides of the chest?

What parts do they protect?

As they extend from the spine to the breast-bone to form the trunk—what is their shape?

What is the hinder part of the body called?

What do you mean by the spine?

What is it also called?

Where is the breast-bone situated?

Lesson 7. *The Upper Limbs.*

The upper limbs are the ·arms, the ·hands, and the ·fingers. The arms are fixed to the trunk at the shoulders; the hands to the arms, at the wrists; and the fingers to the hands, at the ·knuckles. We have two arms, two hands, and ten fingers. The inner part of the hand is the ·palm; the closed hand is called the ·fist.

Lesson 8. *The Lower Limbs.*

The lower limbs are the ·thighs, the ·legs, the ·feet, and the ·toes. The thighs are joined to the trunk, the legs to the thighs, the feet to the legs, and the toes to the feet. We have two thighs, two legs, two feet, and ten toes. The back of the foot is the ·heel, the upper part of the foot is the ·instep, the under part is the ·sole.

Lesson 7.

arms—the limbs reaching from the shoulders to the hands.

hands—the parts of the body with which we take hold.

fingers—the divided parts of the hands ; they are the thumb, the fore-finger, the middle-finger, the ring-finger, and the little-finger.

knuckles—the large joints of the fingers at the back of the hand

palm—the inner part of the hand.

fist—the closed hand, the fingers being doubled in the palm.

What is meant by the upper limbs?
Which is your right hand?
Which is your left?
For what are the hands useful?
Touch and name each finger of the hand.
Where are the arms fixed to the trunk?
——the hands to the arms?
——the fingers to the hands?
What are the knuckles?
What is the inner part of the hand?
Shew me your palm.
What is the closed hand called?

Lesson 8.

thighs—the parts of the legs above the knees.

legs—the limbs by which we walk, or the part between the knee and the foot.

feet—the parts of the body on which we stand.

toes—the extreme ends of the feet.

heel—the hinder part of the foot.

instep—the upper or arched part of the foot.

so'e—the under part of the foot which presses the ground in walking.

Which are the principal members of the lower limbs?
To what part of the body are the thighs joined?
To what part are the legs joined?
To what part are the feet joined?
What are the extreme ends of the feet?
What is the heel?
What is the upper or arched part of the foot?
On what part do we tread?
How many toes have you?
What part of the hands do they resemble?
How are they unlike the fingers?

Lesson 9. *The Joints.*

The parts of the body ·move on ·joints. The chief joints are at the shoulders, the ·elbows, the ·wrists, the hips, the ·knees, and the ·ancles. The fingers and the toes have ·numerous smaller joints. The back-bone is a ·pillar of bones and joints, and is very flexible. The head moves on the first and second joints of the spine.

Lesson 10. *The Bones, Muscles, &c.*

The ·principal bones are the ·skull, the ·jaw-bone, the breast-bone, the ·shoulder-blades, the spine, the ribs, and the bones of the arms, hands, thighs, legs, and feet. The bones are kept in their places by ·muscles and ·tendons. The muscles are the flesh. The tendons are the ends of the muscles; they are fastened to the bones.

Lesson 9.

joints—the bones at which two parts of the body join together.

move—most of the parts of the body move at the joints.

elbows—the middle joints of the arms.

wrists—the joints which connect the arm and the hand.

knees—the middle joint of the leg.

ancles—the joints which connect the leg and the foot.

numerous—in great numbers, as the stars are numerous.

pillar—a supporter or upright column ; the spine is the pillar of the trunk.

What do you mean by joints ?

Where are the chief joints situate?

What parts does the wrist-joint connect ?

What parts does the knee-joint connect ?

What parts does the hip-joint connect ?

What parts does the ancle-joint connect ?

What part of the frame is a pillar of joints ?

What causes the spine to be flexible ?

On what joints does the head move?

If the head was immoveable, what should we have to do when we wished to look behind us ?

Lesson 10.

skull—arched to give it strength.

principal—the chief, larger, or more useful.

jaw-bone—the bone in which the teeth are set ; it has great power, while the teeth act as chisels and wedges for cutting and tearing our food.

shoulder-blades—the flat bones at the back of the shoulders ; they are light but strong.

muscles—the flesh.

tendons—the cords which unite the muscles to the bones.

What do you mean by the word principal ?

Tell me the names of a few of the principal bones.

Point to them and name them.

How are they kept in their places ?

Which is the jaw-bone ?

What are set in it ?

How do the teeth act while we are eating ?

Where are the shoulder-blades ?

What do you mean by muscles ?

What are the tendons ?

To what are the tendons made fast?

Shew me the tendon of the wrist.

Of what use are the muscles and tendons ?

Lesson 11. *The Heart, Lungs, &c.*

The blood flows from the ·heart through the body in the ·arteries. It returns to the heart through the ·veins. It passes into the ·lungs; and is ·purified by being mixed with the ·air we breathe. It again flows through the body in the arteries. The blood in the arteries is scarlet, but that which is in the veins is almost purple.

Lesson 12. *Sustenance and Rest.*

We eat when we are ·hungry, and drink when we are ·thirsty. We cease to eat and drink when we have had enough. We ·rest when we are ·tired, and sleep when we are ·sleepy, and having slept enough we awake. We become hungry, thirsty, tired, and sleepy every day. We therefore ·need ·food, drink, rest, and ·sleep every day.

Lesson 11.

heart—a large fleshy vessel into which the blood is received.

arteries—tubes for conveying blood from the heart to different parts of the body.

veins—tubes for conveying blood from different parts of the body to the heart.

lungs—the organs of breathing which receive constant supplies of fresh air.

purified—made pure, or cleared from foulness.

air—if we breathe pure air the blood is purified, if foul air, the blood is made impure.

What flows from the heart?
What is the heart?
Through what vessels does the blood flow?
What are the arteries?
Through what vessels does the blood return to the heart?
What are the veins?
Into what organs does the blood pass?
What are the lungs?
How is the blood purified in the lungs?
What then becomes of the blood?
What is the colour of the blood in the arteries?
What is the colour of the blood in the veins?

Lesson 12.

hungry—feeling the desire to eat.

thirsty—feeling the desire to drink.

rest—quietness, inactivity.

sleepy—feeling the desire to sleep.

tired—wearied with action.

need—if we were not to take food and rest, sleep, and exercise daily, we could not enjoy health.

food—the means of renewing our strength.

sleep—the means of obtaining rest for the body after the day's action or labour.

When do we require food?
When do we require drink?
When do we cease to eat?
When do we rest?
When do we sleep?
When do we awake?
How often do we eat daily?
How many hours do you sleep?
Why do you need food, and rest and sleep?
What is hunger?
What is thirst?
What is sleep?

Lesson 13. *Internal Actions of the Body.*

The ·internal actions of the· body ·sustain life. ·Digestion separates the food we eat. The heart ·circulates the blood when it is made, and ·the lungs supply us with air. The heart and the lungs act when we are ·asleep as well as when we are ·awake. When they act imperfectly we are ill; when they cease to act we die.

Lesson 14. *Outward Actions of the Body.*

Our bodies are ·capable of ·various actions. We can ·touch, ·hold, strike, or pull; we can ·walk, ·run, jump, or dance; we can stand, sit or lie down. We can also ·see, ·hear, smell, taste, and feel; we can ·laugh, ·smile, sigh, cry, scream, or sing. We can perform many actions with our ·hands.

Lesson 13.

internal—inward, carried on within the body.

sustain—to support.

digestion—the change of the food in the stomach into nutriment.

circulates—the heart not only receives the blood, but forces it into the arteries.

the lungs—as we take air inwards through the windpipe the lungs expand; as we breathe it outwards they contract.

asleep, awake—the limbs and the senses rest in sleep; the heart and lungs never rest while life remains.

Where are the internal actions of the body carried on?
What is meant by digestion?
What work has the heart to perform?
With what do the lungs supply us?
How does the air get into the lungs?
What is the action of the lungs?
Do the heart and lungs act when we are asleep?
What parts of the body rest in sleep?
What organs do not rest?
If they were to cease to act what would be the consequence?
What is the effect when they act imperfectly?

Lesson 14.

capable—able to perform.

various—not alike, different.

touch, hold, &c.—these actions are necessary in the daily works we have to do.

walk, run, &c.—necessary for our comfort and convenience.

see, hear, &c.—necessary for acquiring knowledge.

laugh, smile, &c.—these actions enable us to express our feelings.

hands—most people support themselves by the labour of their hands.

Tell me some of the actions of which we are capable.
Touch the desk.
Hold this ruler fast.
Strike the floor.
Walk quietly in school.
Run fast in the yard.
Jump over this stick.
Stand still. Sit down.
Look at me. Listen to me.
Smell this flower. Feel this paper.
Do not laugh loud.
For what are these various actions useful?
Tell me some of the actions you can perform with your hands.

Lesson 15. *The Stages of Life.*

The first part of life is ·*infancy*. When we can run about and talk it is the time of ·*childhood*. When we can take care of ourselves, it is the time of ·*youth*. A few years after, we are strong and full-grown; this is the time of ·*manhood*. When our strength decays, and our limbs ·totter, it is the time of *old* ·*age*.

SECTION III.—OF FOOD.

Lesson 16. *Animal Food.*

To keep the body in ·health we must eat and drink. Many things are ·proper for ·food, and may therefore be eaten. The principal ·flesh meats are ·beef, ·veal, ·mutton, ·lamb, and ·pork. We also eat the flesh of ·deer, goats, hares, rabbits, and other kinds of animals. Flesh is mostly served in ·joints, ·but it is also made into soups.

Lesson 15.

infancy—extends over two years.

childhood—from two years till six, boyhood and girlhood follow till fourteen.

youth—from fourteen to twenty-one.

manhood—commences at twenty-one, we increase in strength for ten years after; when we attain our full strength.

totter—one of the outward signs of old age.

age—some people begin to feel *old age* at fifty, some not till later in life.

What is the first part of life called?

Over what period does it extend?

When is it the time of childhood?

What is the age of boyhood and girlhood?

When is the time of youth?

When does manhood commence?

Are we then at our full strength?

When do we attain our full strength?

Does our strength decay afterwards?

How is it seen when people become feeble?

What stage of life are they then in?

Lesson 16.

health—a sound state of the body; freedom from disease or illness.

proper food—food that supplies nourishment and preserves health.

flesh-meats—the flesh of animals.

beef—the flesh of oxen.

veal—the flesh of calves.

mutton—the flesh of sheep.

lamb—the flesh of lambs.

pork—the flesh of pigs.

deer—their flesh is called venison.

joints—the parts of animals are generally separated at or near the joints.

For what purpose do we eat and drink?

What kinds of food are proper?

What is meant by flesh-meats?

What is beef?

What is veal?

What is mutton?

What is lamb?

What is pork?

Of what other animals is the flesh eaten?

What is the flesh of deer called?

How is flesh usually served?

What is also made of it?

Lesson 17. *Animal Food. (Continued.)*

Birds and fish ·supply man with food. Of birds we eat ·fowls, ducks, ·geese, ·turkeys, pigeons, ·partridges, and ·pheasants. Of fish we eat ·haddock, ·cod, ·herrings, ·salmon, ·trout, eels, and some other kinds. Of shell-fish we eat crabs, shrimps, lobsters, and oysters. The ·sea-turtle is also used for food.

Lesson 18. *Kitchen Vegetables.*

The ·kitchen-garden supplies plants for food. Of some plants we eat the leaf, as of the cabbage; of others we eat the ·stalk, as of celery; of some we eat the ·root, as of the potato; of some the ·seed, as of peas; of some the ·flower-bud, as of the cauliflower; and of some we eat the ·fruit only, as of the cucumber.

Lesson 17.

supply—to provide, or furnish what is wanted?

fowls, ducks—poultry reared by the farmer.

geese—large birds that graze on commons.

turkey—a large fowl noted for the delicacy of its flesh.

partridges, pheasants—shot by the sportsman; they are called game.

cod—a large white salt-water fish.

haddock—a smaller fish of the cod kind.

herring—caught in large numbers.

salmon, trout—fresh-water fish caught in some of our rivers.

sea-turtle—a large kind of sea-tortoise with long broad paddles or flappers.

With what do birds and fish supply us?

Tell me some birds that we eat.

Tell me some that we do not eat.

What birds are reared by the farmer?

For what is the turkey noted?

What are pheasants and partridges called?

What sort of a fish is the cod?

Where are salmon and trout caught?

What fish are caught in large numbers?

Name some shell-fish.

What is the sea-turtle?

Lesson 18.

kitchen-garden—a garden in which vegetables are grown for food.

stalk—stem; a stalk of rhubarb is a leaf stalk; some stalks are hollow, others are solid.

root—that part of a plant which is in the ground.

seed—that part of a plant which produces new plants.

flower-bud—that part which becomes a flower.

fruit—the produce of a plant which generally contains the seed; the pippins are the seeds of the apple; the kernel of the nut; the haws, of the hawthorn, &c.

Where are vegetables for the table generally grown?

Name some kitchen vegetables.

What part of the cabbage do we eat?

What part of celery and rhubarb do we eat?

Do we ever eat the roots of plants?

Name some plants of which we eat the root.

Name some plants of which we eat the seed.

What part of the cauliflower do we use for food?

What part of the cucumber-plant do we eat?

Name some garden vegetables that are not mentioned in the lesson.

Lesson 19. *The Grain Plants.*

Plants that produce ·grain are much used for the food of man. The principal grain plants are ·wheat, ·rye, ·barley, ·oats, and ·maize. All these may be ground into meal. Meal when sifted separates into flour and bran. ·Flour is used for bread, cakes, pies, and puddings. ·Bran is used for feeding pigs, and rabbits.

Lesson 20. *Fruits.*

Many kinds of fruit are ·used for food. Some are ·berries, as the gooseberry. Some are ·stone fruits, as the plum. Some are ·nuts, as the walnut. Apples, pears, plums, and ·oranges are common and useful fruits. ·Grocers' currants, ·raisins, and ·prunes are dried fruits. Fruit is ·preserved with and without sugar.

Lesson 19.

grain—wheat, barley, oats, rye, maize, and rice.

wheat—its native country is unknown, it is the chief bread-corn of England.

barley—this grain is bearded or awned in the ear.

oats—from which we obtain oatmeal.

rye—it has awns like barley; it is the chief bread-corn of the northern countries of Europe.

maize—Indian corn; it is grown chiefly in warm climates.

rice—grown only in hot countries.

flour—the mealy part of corn ground to a fine powder.

bran—the husk of wheat.

What plants produce grain?

Name some of the different kinds of grain.

Which kind do we use most?

Which kinds of grain are awned?

What do we obtain from oats?

What do you know of rye?

What is maize also called?

Where is it grown?

Where is rice cultivated?

Into what may the different kinds of grain be ground?

What is flour, and for what is it used?

What is bran?

Lesson 20.

used for food—eaten for nourishment.

berry—a small fruit; as the currant, raspberry, strawberry, &c.

stone-fruits—plums, cherries, peaches, apricots, &c.

nut—as the hazel-nut, walnut, and chestnut; we obtain some kinds of nuts from Spain and other countries.

oranges—also obtained from Spain.

grocers' currants—a small kind of dried grapes.

raisins—dried grapes; the best are dried by the sun.

prunes—dried plums; many are sent from France.

preserved—it must be boiled to be well preserved.

What are fruits?

Name some kinds of berries that are used for food.

Name some different kinds of stone-fruits which are eaten.

Name some different kinds of nuts.

Which is the larger, a walnut or a cocoa-nut?

Name some common and useful fruits which grow in our gardens.

Where do oranges grow—in warm or cold countries?

What are grocers' currants?

What are raisins?

What are prunes?

How are gooseberries preserved?

Lesson 21. *Condiments.*

Many kinds of food are ·insipid. They require ·salt or ·sugar to give them a pleasant ·flavour. The various substances used to season food are called ·*condiments*. ·Mustard, ·vinegar, and several kinds of spices, such as ·pepper, ginger, ·nutmeg, cloves, and cinnamon, are used as condiments. The spices grow in hot countries.

Lesson 22. *Food.*

The body is ·nourished by food. Food after it is ·swallowed passes into the ·stomach; it is there ·digested, and supplies the body with ·strength. The ·nourishing part of food is ·formed into blood, the rest passes away. Food that has been ·cooked is more nourishing than that which has not been cooked.

Lesson 21.

condiments—salt, mustard, pepper, spices.

preserved in vinegar—to keep them from decaying.

salt—a mineral substance, obtained from salt mines, or from salt water.

pepper—the dried berries of a plant ground to powder.

vinegar—a sour liquid made from wine, beer, &c.

sugar—the juice of the sugar-cane, boiled and granulated.

mustard—the seeds of the mustard-plant ground; it is very pungent.

mint-sauce—a mixture of mint, vinegar, and sugar.

nutmeg—a spice that grows only in the hottest countries.

Why is sugar put into tea and salt into bread?

What are sugar, pepper, and salt called?

Name some other substances used to flavour food.

What are pickles?

Tell me some vegetables which are pickled?

With what are pickles eaten?

What is usually eaten with fruits?

What condiment is eaten with beef and pork?

What is mustard?

What kind of taste has mustard?

With what kind of meat is mint-sauce eaten?

With what is rice flavoured?

Lesson 22.

nourished—supported, strengthened.

swallowed—passed down the throat.

stomach—the vessel shaped like a bag, into which our food passes when it is swallowed.

digested—the nutritious part separated from that which is not nutritious.

strength—if we do not take frequent supplies of food our bodies would become weak.

nourishing part—that part which gives strength.

formed—changed into blood.

cooked—roasted, boiled, fried, or baked.

With what is the body nourished?

With what do we chew our food?

Into what part of the body does the food pass?

What takes place in the stomach?

What do you mean by digested?

With what is the body thus supplied?

What would be the consequence if we did not take frequent supplies of food?

What does the nourishing part of food become?

Why is food cooked?

Do you think raw apples are as wholesome as roasted apples?

Lesson 23. *Drink.*

We quench our ·thirst by drinks. The chief ·*beverages* are ·water, ·milk, ·tea, ·coffee, cocoa, ·ale, wine, perry, and cider. Of all these water is the best. Milk is both pleasant and wholesome, especially for children. Tea, coffee, and cocoa, are ·harmless when taken in ·moderation. Ale, wine, perry, and cider are ·intoxicating.

Lesson 24. *The Farmer.*

Much of the ·food we eat is ·supplied by the farmer. The farmer grows the corn that makes our bread. Before he can gather his ·crops he must plough, and harrow, and manure, and sow his land. This requires labour, and ·skill, and ·money. Some farmers employ many men. The farmer sells his ·produce at the ·market.

Lesson 23.

thirst—the desire to drink.
beverage—anything that we drink.
water—* natural, liquid, clear, transparent, tasteless, colourless, inodorous, reflective, heavy, wholesome—
milk—* white, liquid, opaque, wholesome, sweet, nutritious—
tea, coffee—common beverages which are made wholesome with sugar and milk.
ale, wine, &c.—all these are fermented and intoxicating liquors.
harmless—not hurtful.
moderation—not too much, proper quantity.
intoxicating—causing drunkenness.

What is thirst?
How do we quench our thirst?
What is a beverage?
Name the chief beverages
Which is the best?
Tell me some of its qualities?
What beverage is made from pears?
From what fruit is cider made?
What nutritious beverage does the cow give us?
Why should children have milk?
What qualities has milk?
When are tea, coffee, and cocoa, harmless beverages?
Name some intoxicating drinks.
What do you mean by intoxicating?

Lesson 24.

food—bread, milk, potatoes, and other things that we eat.
supplied—cultivated, if plants;—reared and fed, if animals.
crop—the whole produce of a field; as a crop of grass, or wheat.
skill—knowledge and practice; he must know a good deal about land and cattle.
money—pounds, shillings, &c.; the farmer must have money to buy ploughs, horses, and many other things, and to pay his labourers with.
produce—corn, pigs, fat cattle, eggs, butter, poultry, &c.
market—the place in towns where farm-produce and other things are sold.

What is a farmer?
With what does he provide us?
Where does he grow his corn?
What is corn ground into?
Who grinds it into flour?
What do we make of flour?
What has the farmer to do before he can have any crops?
What is the man called who ploughs?
Does he plough for nothing?
What does the farmer give him for his work?
What does a farm produce?
Where does the farmer sell his produce?
What does he do with the money he receives?
What is the market?

Lesson 25. *The Farm.*

Farms are provided with ·*live-stock.* Horses draw the ·plough, the ·harrow, the ·drill, and the cart. Oxen are sometimes used for ·draught; but they are generally ·kept, like calves, sheep, and pigs, ·for sale. Cows give milk, from which butter and cheese are made. Fowls are kept for food, and to supply us with eggs.

Lesson 26. *Purveyors.*

Those who ·provide us with food are called *purveyors.* The ·chief purveyors are the ·miller, who supplies us with flour; the ·baker, who supplies us with ·bread; the ·butcher, who supplies us with meat; the ·dairyman, who supplies us with milk; the ·green-grocer, who supplies us with vegetables; and the ·brewer, who supplies us with beer.

Lesson 25.

livestock—horses, cows, sheep, &c.
plough—the implement with which the farmer turns up the earth to prepare it for seed.
harrow—an implement full of iron teeth which is dragged over the ground to break the clods, to get off the rubbish, or to cover the seed.
drill—an instrument with which the farmer sows his corn in rows, it is drawn by a horse, and the corn drops out of holes in it, into rows made to receive the seed.
draught—drawing waggons, carts, ploughs, &c.
kept for sale—fattened for the butcher.

What animals are required on farms?
For what purposes are horses used?
What is a plough?
What implement does the gardener use instead of a plough?
Why does the farmer harrow his land?
For what labour are oxen some times used?
What animals does the farmer feed for sale?
What do cows give?
What articles of food are produced from milk?
Why does the farmer keep fowls?

Lesson 26.

provide—procure by their labour, or by buying it.
chief purveyors—those who provide the articles of food all require.
miller—he who grinds the corn.
baker—he who bakes the bread.
bread—* porous, opaque, solid, wholesome, nutritious, eatable, absorbent,—the crum is soft, the crust is hard and brown.
butcher—he who kills cows, sheep, pigs, &c.
dairyman—he who sells milk.
green-grocer—he who sells cabbages, carrots, potatoes, turnips, and other things grown in the garden.
brewer—he who makes beer.

What are those people called who provide food for others?
Name some of them.
Who supplies us with flour?
With what necessary of life does the baker supply us?
Tell me some of the qualities of bread.
Of whom does the butcher buy the cows, sheep, and pigs, that he kills?
Who supplies us with milk?
With what vegetables does the green-grocer supply us?
From whom does he obtain these vegetables?
Who supplies us with beer?

Lesson 27. *Purveyors. (Continued.)*

Many people who provide for our wants labour hard—as the ·brewer, who brews ale and porter. Others buy and sell ·various articles—as the grocer, who supplies ·tea, ·coffee, ·sugar, raisins, currants, and ·spices. Many things are brought from far countries by ·sailors, who undergo both danger and fatigue to provide us with food.

SECTION IV. OF CLOTHING.

Lesson 28. *Dress of Men.*

Our bodies ·require clothing. Hats, shirts, stockings, coats, waistcoats, trousers, shoes, and boots are worn by men. Caps and jackets are worn by boys. We use ·warm clothing in ·winter, and ·light clothing in ·summer. People in ·hot climates wear thin fabrics; in ·cold climates, ·furs.

Lesson 27.

brewer—one who makes beer, ale, or porter.
various—different; as tea, sugar, flour, bacon, cheese, &c.
tea—the dried leaves of a plant which grows in China.
coffee—* the seeds are roasted and ground; they are brown, hard, sapid, solid, odorous, brittle, foreign—
sugar—* the juice of the sugar-cane; brownish, sweet, soluble, opaque, vegetable, foreign, sticky, moist—
spices—nutmeg, mace, cloves, cinnamon, &c.
sailors—men who manage the ships.

How does the brewer labour hard?
What other providers of food labour hard, and for what objects?
Can we have anything without labour?
Tell me some things that the grocer buys and sells.
What is tea?
Where does it grow?
What is coffee?
Tell me some of the qualities of the roasted seeds.
What is sugar?
Name some of its qualities.
Tell me the names of some spices.
What hardships do sailors undergo?

Lesson 28.

require clothing—to keep in health we must wear clothes.
warm clothing—clothes made of thick woollen cloth or fur.
light clothing—clothes made of thin cloth.
summer—when we have long days and warm weather.
winter—when we have short days and cold weather.
hot climates—countries where the sun is very powerful.
cold climates—countries where there is a great deal of ice and snow.
furs—* animal, hairy, soft, warm, inanimate, natural,—the hairs are very slender and flexible.

Why is it necessary that we should wear clothes?
Tell me some of the articles of dress worn by men.
Tell me some articles of dress worn by boys.
At what time of the year do we use warm clothing?
Why?
When do we wear light clothing?
Why do we wear light clothing in summer?
What do people wear in hot climates?
What do people wear in cold climates?
What qualities have furs?

Lesson 29. *Dress of Women.*

The ·dress of ·girls and women consists of shifts, skirts, stays, frocks, gowns, bonnets, caps, shawls, and cloaks. Their ·ornaments are necklaces, ear-rings, brooches, bracelets, rings, and chains. ·Pins, buckles, clasps, ·buttons, ·hooks and eyes, and strings are used to fasten the various parts of their dress.

Lesson 30. *Materials of Dress.*

Clothing is made chiefly of cotton, of flax, of wool, or of silk. ·Cotton is the ·produce of a plant grown in India, in Africa, and in America. Flax is the ·stem of a plant grown in Flanders and in Ireland. ·Wool is obtained from the ·fleece of the sheep; and ·silk is spun by the silkworm. Various ·fabrics are made from these ·materials.

Lesson 29.

dress—articles of clothing.

girls—one kind of dress is suitable for girls when they are young, and another kind when they become women.

ornaments—not desirable for children, nor for young girls.

pins—very useful fasteners, many hundreds of men, women, and children are employed in making pins.

buttons—made of metals, pearl, wood, bone, ivory, horn, leather, paper, glass, silk, stone, clay, &c.

hooks and eyes—these useful fasteners are also made in large numbers, they are more convenient than pins to fasten dresses with.

What is meant by dress?

Of what does a girl's dress consist?

When is it proper to wear light dresses?

When are warm dresses suitable?

Why are ornaments not desirable?

What are pins made of?

How could you show that the manufacture of pins is very extensive?

Of what different materials are buttons made?

Why are hooks and eyes better than pins?

What other fasteners are used in dress?

Lesson 30.

cotton—a soft vegetable wool; the cotton-plant grows in many warm countries.

produce—the cotton-wool is collected and packed in bales or bags.

stem—the stalk of flax consists chiefly of fine fibres which are prepared for spinning.

wool—the warm covering of sheep and some other animals, it is much finer than hair.

fleece—the covering of the sheep.

silk—the caterpillar called the silk-worm spins a silken cocoon.

materials—substances; as cotton, silk, wool, &c.

fabrics—the things made from materials.

Of what substances is clothing chiefly made?

Are your clothes made of cotton, wool, or silk?

What is cotton?

Where does the cotton-plant grow?

What fabrics are made of cotton?

What parts of your dress are made of linen?

What parts are made of cotton?

Of what is linen made?

Where does the flax-plant grow?

What animal spins silk?

What articles are made of silk?

Mention various articles of clothing, and the materials they are made of.

Lesson 31. *Makers of Dress.*

The ·making of dress employs ·many persons. The shoemaker requires ·leather, and gives employment to the ·tanner, to the ·currier, and others. The tailor and the dressmaker require scissors, needles, pins, and buttons, and all the fabrics of which dress is made. The ·hatter gives ·employment to the ·blockmaker.

Lesson 32. *Cleanliness.*

If we wish to ·enjoy health we must be ·cleanly. Those who are not cleanly cannot have good health. Every one should ·bathe or use the ·flesh-brush every day. The ·garments next the skin should be changed often, as they ·absorb ·perspiration. Our ·dwellings should be kept clean and well-aired.

Lesson 31.

making—including the cutting out, the sewing, the trimming, &c.

many—hatters, bonnetmakers, milliners, tailors, glovers, shoemakers, &c.

leather—* flexible, tough, odorous, smooth, animal, opaque, durable, inanimate, water-proof—

tanner—the man who makes the skins of animals into leather.

currier—the man who dresses and dyes or colours the leather after it is tanned.

employment—any kind of work.

blockmaker—the man who makes the blocks which the hatter uses.

hats—made of wool, silk, fur, cotton.

What work-people does the making of dress employ?

Name some of the qualities of leather.

Who makes shoes and boots?

What is the employment of the tanner?

What is that of the currier?

What articles do the tailor and dressmaker require to work with?

Of whom do they obtain them?

What materials and fabrics does the tailor use?

What materials does the dressmaker use?

What fabrics are used by the dressmaker?

Of what materials are hats made?

Lesson 32.

enjoy health—to feel well and strong.

cleanly—free from dirt, both in our bodies and our clothing.

bathe—to immerse the body in water.

flesh-brush—a brush for cleansing the skin.

garments—clothes.

absorb—to suck up; a sponge absorbs water.

perspiration—the moisture which passes through the pores of the skin.

dwellings—houses, rooms.

well-aired—they should admit plenty of fresh air.

What do you mean by health?

Why should we be cleanly?

What people cannot enjoy good health?

How can we practise cleanliness?

What is the flesh-brush for?

What garments should we change often?

Why should we change them?

What do you mean by absorb?

What is perspiration?

Do we perspire more in hot, or cold weather?

In what state should our dwellings be kept?

SECTION V. OF HABITATIONS, ETC.

Lesson 33. *Dwellings.*

The ·*dwellings* of men are ·caves, ·tents, ·huts, and houses. Most men live in houses. Small houses are called cottages; large houses, mansions. The rooms of houses are called ·chambers, ·dining-rooms, ·drawing-rooms, ·libraries, ·kitchens, and ·cellars. ·Passages and stairs lead from one room to another.

Lesson 34. *Building Materials.*

The ·*materials* used in building are ·timber, stone, bricks, tiles, slates, ·lime, iron, lead, and glass. Timber grows in woods and ·forests. Stone and slate are dug from ·quarries. Bricks and tiles are made of clay. ·Iron and ·lead are got from ·mines. Lime is made of chalk or of limestone. ·Glass is ·manufactured at the glass-house.

Lesson 33.

dwellings—places to live in.
caves—great holes in rocks.
tents—made by stretching strong cloth on upright poles.
huts—little houses built of turf, logs, or mud.
chamber—a room upstairs; a bedroom.
dining-room—the room in which a family or company dine.
drawing-room—the room in which company is received.
library—a room for books.
kitchen—the room in which food is cooked.
cellar—the room below the ground floor.
passages, &c.—leading to different parts of a house.

What are the dwellings of men?
What are caves?
What are our dwellings called?
What are small houses called?
What are mansions?
Name the rooms of a house.
What are bed-rooms also called?
In which room is the food prepared?
What is a library?
What room is below the ground floor?
What is the use of passages?
For what purpose are stairs used?

Lesson 34.

materials—substances from which different articles are made.
timber—wood used for beams, floors, &c.
lime—burnt limestone.
forest—an extensive tract of land covered with trees.
quarry—a place from which stone is obtained; slates are obtained from a slate mine.
mines—deep places in the earth, from which minerals are obtained.
iron, lead—useful metals; their ores are obtained from mines.
manufactured—made by workmen.
glass—made from a mixture of sand and pearlash.

What materials are used in building?
What is timber?
Where does it grow?
What is a forest?
Whence do we get slates and stones?
Of what substance are bricks and tiles made?
Where do we get iron and lead from?
What are mines?
Of what mineral is lime made?
Where is glass manufactured?
From what materials is glass made?

Lesson 35. *Occupations of Men.*

Men ·help ·each other by a ·*division of labour*. Some ·provide food, others make clothing, others make tools, and others, articles of common use. The brazier works in brass; he makes candlesticks, lamps, and kettles. The potter works in clay; he makes cups and plates. The cutler works in steel; he makes scissors, knives, &c.

Lesson 36. *Trades employed in Building.*

Many ·trades are employed in building a house. The ·bricklayer raises the walls. The ·mason does the stonework. The carpenter makes the ·roof and floors. The slater covers the roof. The glazier fits the windows with ·glass. The plasterer covers the walls and the ·ceilings with ·mortar; and the painter paints the ·woodwork.

Lesson 35.

help—the farmer helps the shoemaker by growing corn, the shoemaker helps the farmer by making shoes.

each—the cutler helps the farmer and the shoemaker by making knives; both help the cutler in return, one by making shoes, the other by growing corn.

division—if the shoemaker had to make his knives, and cultivate land to grow corn, he could not be so good a shoemaker.

provide—while some provide food others are making the articles they want.

How do men help each other?

Explain how the farmer and shoemaker help each other.

What men provide food?

What people are engaged in making articles of clothing?

How do the joiner and tailor help each other?

What does the brazier make?

While he is doing this who are working for him?

What does the potter make?

Who are providing for him in the meantime?

For what people does the cutler make various articles?

Lesson 36.

trade—a business which is learned for the purpose of earning a living; as tailoring, shoemaking, &c.

bricklayer—a man who builds brick walls.

mason—one who hews stones and builds stone walls.

roof—the framework on which the slates or tiles are laid.

glass—* bright, transparent, cold, smooth, hard, brittle—

ceiling—the top of the room, that part opposite the floor.

mortar—lime and sand mixed with water; plasterers mix cow-hair with the mortar they use.

woodwork—the window-frames, beams, joists, floors, doors, &c.

What is a trade?

What trades are employed in building a house?

Who builds the walls if they are of brick?

Who builds the walls if they are of stone?

What does the carpenter do?

What is the roof?

Who covers the roof with slates?

What does the glazier do?

Tell me some of the properties of glass.

What does the plasterer do?

What is mortar made of?

Who paints the woodwork?

What woodwork is there in a house?

Lesson 37. *Furniture Makers.*

A large number of ·workmen are ·employed in making ·*furniture.* The cabinet-maker makes tables, chairs, sofas, drawers, stools, bedsteads, and desks. The upholsterer makes curtains, beds, and ·hangings. The carpet-weaver ·weaves carpets; the blanket-weaver, blankets; and the ·whitesmith makes ·fire-irons.

Lesson 38. *The Contractor.*

Persons who ·undertake to build a house are called ·*contractors.* They see to its being made ·fit for dwelling in. The contractor ·employs the ·mason and the bricklayer to build the walls, the ·carpenter to do the woodwork, and the ·slater to cover the roof. He also employs the painter, and other workmen as he wants them

Lesson 37.

workmen—men who have learned trades and worked at them.

employed—occupied.

furniture—the things that are placed in a room for our use or comfort; as chairs, tables, &c.

hangings—the curtains of a bed or room.

weave—to make in a loom; stockings, gloves, cloth, calico, &c. are woven fabrics.

Whitesmith—the whitesmith makes bright or polished utensils of iron; the blacksmith, unpolished ones.

fire-irons—shovels, pokers, and tongs.

What are workmen?

Tell me some workmen who are employed in making furniture.

What furniture is there in this room?

What articles does the cabinet-maker supply?

Who makes curtains, beds, and hangings?

What are hangings?

What fabrics do weavers make?

What are fire-irons?

Who makes fire-irons?

What is the difference between the blacksmith and the whitesmith?

Lesson 38.

undertake—to promise to do a thing.

contractors—they contract or engage to do the work.

fit—properly finished.

employs—he finds workmen, and pays them for their work.

mason—in building a house the stone work is done by the mason; the brick work, by the bricklayer.

carpenter—to make the roofs, floors, doors, window-frames, shelves, &c.

slater—if the house is covered with tiles the work is done by a tiler.

What are contractors?

What is it their duty to see to?

Tell me some workmen that the contractor employs.

For what work does he employ the bricklayer?

For what part of the work does he employ the mason?

For what purpose does he employ the carpenter?

For what part of the work does he employ the slater?

Who pays these men their wages?

What does the painter do in a new house?

What other workmen are required in making a house fit to be inhabited?

SECTION VI. OF EDUCATION.

Lesson 39. *School.*

·Reading and ·writing are useful arts. They are most easily learned when we are young. Children therefore are sent to school to learn these and other things. Learning requires ·attention and ·patience; we must therefore be ·industrious. Teachers are to use ·authority; we must therefore be ·obedient.

Lesson 40. *Learning.*

To ·learn well we must ·take pains. To read well we must read often and slowly. To write well we must ·practise much and ·carefully. To ·understand we must think of what we hear and read. ·Ciphering is more ·difficult than reading or writing, but as it is very ·useful, we must learn to cipher. We can learn if we try.

Lesson 39.

reading—being able to say from books what is printed or written in them.

writing—being able to copy what is written, or to write down our own thoughts.

attention—the habit of keeping the mind fixed on a subject.

patience—quiet attention, without hastiness.

industrious—diligent in study, active in mind and thought.

authority—the right to command attention; if teachers had not authority, many of the pupils would be idle, and make no improvement.

obedient—being willing to do what the teacher desires.

For what purpose are you sent to school?

What useful arts should you first acquire?

When do people most easily learn to read and write?

Where are children taught to read and write?

What other things are you taught at school?

What does learning require from pupils?

What do you mean by attention?

What do you mean by patience?

What other habit must you have?

Who directs your lessons?

What do you mean by authority?

Why should you be obedient?

Lesson 40.

learn—to get knowledge that we did not previously possess.

take pains—give attention and try our best.

practise—do it often.

carefully—with care, minding the sense of what is read.

understand—that we may know the meaning.

ciphering—calculating with figures, reckoning, arithmetic.

useful—often wanted, of great service; every labourer, tradesman, and shopkeeper, ought to know arithmetic well.

difficult—not easy to be learnt.

How can you learn your lessons well?

What is meant by taking pains?

How may you learn to read well?

What must you do if you want to write well?

What do you mean by practising?

How are you able to understand your lessons?

What is ciphering?

Which is more difficult, ciphering or reading?

Why should you learn to cipher?

What do you mean by difficult?

Tell me some things which are difficult for you?

Tell me some that are easy, by which you gain knowledge.

Lesson 41. *Plays of Boys.*

Those who ·work in school may ·play in play-hours. Boys play at ·cricket, at hoop, at marbles, at nine-pins, at peg-top, at bat and ball, and at ·kite-flying. In winter, running races, sliding, and skating are good exercises. Playing at ·manly games is good for the health. Those who work the hardest ·enjoy play the best.

Lesson 42. *Plays of Girls.*

The ·games of girls are ·different to those of boys. Girls play at battle-dore and shuttle-cock, at catch-ball, at hide-and-seek, and at puss-in-the-corner. They also like to dress dolls, and to thread beads. It is ·pleasant to have others to play with. We must therefore try to make our games ·cheerful, and our ·playmates happy.

Lesson 41.

work—exert their faculties upon their lessons during school-hours

play—"all work and no play makes Jack a dull boy;" children should therefore have play-hours

cricket—bats, a ball, and wickets are necessary for this game; the wickets are the little gates set up to be bowled at.

kite-flying—nearly every school boy can make a kite, first making a light frame of wood and string, and then covering it with paper.

manly—such games as exercise the limbs, and make them strong.

enjoy—feel pleasure in.

When should you give strict attention to your lessons?

Is it right to play and be idle in school?

When is the right time for play?

Describe the exercise with the hoop.

Describe a game at marbles.

Describe other kinds of play.

How do you play at nine-pins?

What exercises are good in winter?

Of what should you be careful before you go on the ice?

What do you mean by manly games?

Why are they good for health?

What children enjoy play the best?

Lesson 42.

games—sports, plays, pastimes, amusements.

different—not the same, not alike; the plays of girls should not be so rough as those of boys.

pleasant—agreeable, causing us to feel pleasure.

cheerful—lively, amusing, not dull, such as make us feel very happy.

playmates—those children with whom we play; brothers and sisters are playmates, and so are those schoolfellows who play together.

What do you mean by games?

What is the difference between the games of girls and those of boys?

At what games do girls play?

Describe the game of battle-dore and shuttle-cock.

Describe that of hide-and-seek.

Describe that of puss-in-the-corner.

Tell me of some playful occupations.

What do you mean by pleasant?

Is it more pleasant to be alone, or to have others to play with?

What are those children called who play together?

What should you always try to do when you are playing?

SECTION VII. THE MAMMALIA.

Lesson 43. *Kinds of Animals.*

·Animals live, breathe, and move. Most animals ·grow; most of them also ·feel. ·*Quadrupeds* have four feet; they are covered with hair or fur. ·*Birds* fly; they are covered with feathers. ·*Fishes* swim; they have ·fins. ·*Reptiles* live both on land and in water. ·*Insects* have six legs. ·*Worms* have no legs.

Lesson 44. *The Mammalia.*

The animals that ·nourish their young with milk are called *mammalia*. Men, ·cattle, and some of the ·fishes are ·mammalia. Some of the mammalia have hands and no feet, as the monkey; some have feet and no hands, as the horse; some have a ·proboscis which serves for a ·hand, as the elephant.

Lesson 43.

animals—all beings that have life and the power of voluntary motion ;—man is an intelligent animal.

grow—increase in size, vegetables also grow.

feel—to perceive by the touch.

quadrupeds—the horse, dog, lion, fox, &c.

birds—the robin, sparrow, crow, thrush, &c.

fishes—the cod, trout, salmon, &c.

fins—they are instead of the limbs of animals, and the wings and legs of birds.

reptiles—the frog, snake, tortoise, lizard, &c.

insects—flies, bees, butterflies, &c.

worms—the earth-worm, leech, &c.

What do you mean by animals?

What created things grow but do not feel?

How do you know that animals feel?

How do you distinguish quadrupeds?

Tell me the names of some quadrupeds.

How do you describe birds?

Tell me the names of some birds.

How do you distinguish fishes?

Tell me the names of some.

Where do reptiles live?

Give examples of reptiles.

How many legs have insects?

Give examples of insects.

What animals have no legs?

Lesson 44.

nourished—fed, strengthened ; we are nourished by food.

cattle—domestic animals used for labour or for food, but more particularly horned beasts.

fishes—the fishes that suckle their young are the whales, the dolphins, and the porpoises.

mammalia—the animals that suckle their young with their milk.

proboscis—trunk, a very long nose.

hand—we take hold of objects with our hands, but the elephant reaches objects, and takes hold of them with his trunk.

How are the mammalia nourished?

Name some animals which belong to the mammalia.

What do you mean by cattle?

What fishes belong to the mammalia?

Do birds belong to the mammalia?

How are mankind different to other mammalia with respect to hands and feet?

Which of the mammals have four hands?

What animals have no hands?

What instrument has the elephant that serves for a hand?

What is a proboscis?

What does the elephant do with his proboscis?

Lesson 45. *Domestic Quadrupeds.*

·Quadrupeds kept by man are called ·*domestic* animals. Of domestic animals, the horse is ·spirited, the ox is ·laborious, the cow is very useful, the sheep is ·innocent, the dog is ·watchful, the cat is thievish. The foal, the calf, the lamb, the puppy, and the kitten are ·playful. The goat, the pig, and the ass, are also domestic animals.

Lesson 46. *Beasts of Prey.*

Beasts of ·prey are those that kill and eat other animals. Beasts of prey are generally ·wild. The lion is ·powerful, the tiger is ·cruel, the panther is ·fierce, the lynx is ·subtile, the wolf is ·voracious, the fox is ·cunning, the bear is ·ferocious, the hyæna is ·savage, the ·weasel is slender. These and many others are beasts of prey·

Lesson 45.

quadrupeds—animals that have four feet.

domestic—living near to, or belonging to our homes.

spirited—full of spirit, lively, undaunted.

laborious—industrious, it works hard ; in some countries oxen are used for drawing ploughs, waggons, &c., and for other farm labour.

innocent—harmless.

watchful—it looks out for thieves and strangers.

playful—fond of play, all young animals are playful.

What are quadrupeds ?

Name some quadrupeds that are kept by man.

What are these animals called?

For what labours is the horse employed ?

What kind of labours does the ox perform in some countries ?

In what way is the cow useful ?

What animal is an emblem of innocence ?

Which of our domestic animals guards our premises ?

What do you know of the cat's character ?

What animals are playful ?

What do you mean by playful ?

Lesson 46.

prey—the animal which is killed and eaten by another animal ; the mouse is the prey of the cat.

wild—not domestic.

powerful—very strong.

cruel—fond of giving pain.

fierce—fiery, very angry.

subtle—sly, crafty.

voracious—very greedy.

cunning—sly, artful.

ferocious—fierce, savage.

savage—cruel, barbarous.

weasel—it has a thin body, and can follow rats, and other animals into their burrows.

What are beasts of prey ?

Are all beasts of prey wild ?

Are they generally wild ?

What domestic animals are beasts of prey ?

Tell me the names of some other beasts of prey ?

What do you know about the lion ?

What do you mean by powerful ?

What is the character of the tiger ?

What is said of the lynx ?

What beast of prey has a thin body ?

What animals does the weasel kill ?

What do you know about the fo

Lesson 47. *Wild Animals.*

Wild animals live in forests, in deserts, in plains, and in mountains. The bison is shaggy, the zebra is striped, the ·elephant is big, the deer is elegant, the ·reindeer is hardy, the antelope is swift, the ·giraffe is tall and gentle, the ·sloth is inactive on the ground, the ·wild boar is bold. All these feed on vegetables.

Lesson 48. *Wild Animals. (Continued.)*

The badger is ·solitary, the squirrel is ·nimble, the hare is ·timid, the mouse is small, the rat is ·destructive, the beaver is ·industrious, the monkey is droll. All these, and many other animals feed on grass, or grain, or fruits, or the leaves or roots of plants. Some animals are useful for ·food, some for ·clothing, some for ·labour.

Lesson 47.

elephant—it feeds on the large succulent plants of hot countries, and on the leaves of trees.

reindeer—during summer they feed on herbage and shrubs; in winter, on a moss called the reindeer moss.

giraffe—feeds on the leaves and small branches of trees.

sloth—feeds chiefly on the leaves, fruit, and bark of trees; it runs under the branches, not on them.

wild boar—feeds by night on acorns, beech-mast, roots, grain, and all kinds of vegetables.

Where do wild animals live?
What are forests?
What are mountains?
Name some wild animals that feed on vegetables.
On what does the bison feed?
What does the elephant feed upon?
What is the food of the reindeer in summer, and what in winter?
How does the giraffe feed?
On what does the sloth feed?
What do you know of the wild boar?
On what does it feed?
What animal of the horse kind is striped?
What kind of deer is very tall and gentle?

Lesson 48.

solitary—fond of living alone.

nimble—very quick; it can run along the branches of trees very fast.

timid—soon frightened and runs away.

destructive—spoils and destroys things; rats are ravenous but useful.

industrious—beavers live together and build habitations for themselves in rivers.

food—we kill them for their flesh.

clothing—some animals are killed for their skins.

labour—we keep horses to draw carts, ploughs, &c.

Tell me the name of an animal that is not fond of company.
What do you know about the squirrel?
What do you mean by nimble?
What is the character of the hare?
What is the character of the rat?
Tell me what it eats and destroys.
What animals build themselves mud habitations in rivers?
What animal is very droll?
How many hands has it?
On what do all these animals feed?
What animals do we kill for food?
What animals are useful for clothing?
Why do we keep horses?

Lesson 49. *Clothing of Animals.*

Quadrupeds have different kinds of ·clothing. The sheep has ·wool; the pig, ·bristles; the ox, the horse, the camel, the deer, and the goat, hair; the mole, the cat, the squirrel, the fox, the sable, and some others, ·fur. The porcupine and the hedgehog have ·spines. The horse, the lion, and the bison have ·manes.

Lesson 50. *Peculiarities of Animals.*

The cat, the rat, the lion, and the tiger have ·whiskers; the bear has ·paws; the horse has ·hoofs; the camel has a ·hump. The pig, the hedgehog, and the mole have ·snouts. The ox, the sheep, the goat, the deer, and some other animals have ·horns. The wild boar has tusks. The elephant has a ·trunk and ·tusks.

Lesson 49.

clothing—the clothing of an animal is the substance with which it is naturally covered.

wool—* soft, white, flexible, elastic, compressible, tough, durable, opaque, dry, light, animal—

bristles—coarse strong hairs; the shoemaker uses them, and they are also used for making brushes.

fur—very fine hair; it is made into caps, muffs, boas, and other articles of dress.

spines—sharp horny spikes.

mane—the long hair which grows on the necks of some animals.

Have all quadrupeds the same sort of clothing?

What do you mean by the clothing of an animal?

What kind of clothing has the sheep?

Name the qualities of wool.

What animal is covered with bristles?

For what purpose are bristles used?

What animals give us furs?

What is fur?

Name some animals that have hair for their clothing.

What animals have manes?

How are the porcupine and hedgehog covered?

What are spines?

Lesson 50.

whiskers—the long hairs growing about the nostrils.

paws—soft feet with claws within, like the paw of the lion, cat, tiger, &c.

hoofs—hard horny feet.

hump—a large lump of flesh.

snout—an elongated nose.

horns—hard substances which grow out of the heads of some animals; curved and tapering, or branched.

elephant's tusks—their substance is ivory, and many articles are made from them.

trunk—the instrument with which the elephant takes up food and other articles.

Name some animals that have whiskers?

What are the whiskers supposed to be?

What are the feet of the bear called?

What is the foot of the horse called?

What animals have snouts?

Tell me some animals that have horns.

What are the large teeth of the boar called?

What is the elephant's trunk used for?

What is the substance of the elephant's tusks?

Is ivory useful?

For what purposes?

Less. 51. *Actions and Noises of Animals.*

Animals have various ways of ·defending themselves. The horse kicks; the dog bites; the goat butts; oxen gore; and the bear hugs. Their noises are very ·expressive. The ·lion roars; the ·dog barks and howls; the ·cat purrs and mews; the ·ass brays; the ·monkey chatters; the ·horse neighs; the lamb baas; and the bull bellows.

Lesson 52. *Motions of Animals.*

Animals have very different ·motions; the ·horse walks, trots, canters, and gallops; the ·dog runs and hunts; the ·goat leaps; the bear and the monkey ·climb; the wolf gallops; the tiger ·springs on his prey; the sloth clings to branches. The animals that feed by night retire to dark woods and dens by day.

Lesson 51.

defending—some attack their enemies, others hide themselves, others run away, others call for help.

expressive—we know by the mewing or purring of the cat if it is uneasy or pleased; we also know by the actions of a horse if it is playful or vicious.

lion—the lion is called the king of beasts.

dog—the dog guards his master faithfully.

cat—the cat watches and preys by night.

ass—the ass labours for the poor man.

monkey—the monkey lives in warm countries.

horse—the horse is one of the most useful animals.

Do all animals defend themselves in the same way?

How do different animals act when they are attacked?

How does the horse defend itself?

How does the dog act?

What animal butts?

How do oxen defend themselves?

How does the bear treat its foe?

How does the cat express its feelings of pleasure or uneasiness?

What is the lion called?

Tell me the names given to the noises of some animals.

To whom is the ass particularly valuable?

Lesson 52.

motions—these motions are suitable to their habits of life.

horse—its paces enable it to draw heavy loads, to draw a carriage quickly, or to carry a rider rapidly.

dog—he is thus enabled to assist man both in destroying vermin, and in obtaining food.

goat—he lives among mountains and rocks and he leaps from one crag to another.

climb—climbing animals generally feed on the produce of trees.

springs—thus seizing an animal as large as itself by surprise.

Have all animals the same motions?

To what are their motions suitable

What motions has the horse?

What do its paces enable it to do?

What are the habits of the dog?

How is he thus enabled to assist man?

Where are wild goats found?

What actions have they?

What animals climb?

On what do they generally feed?

How does the tiger seize its prey?

Tell me the actions of some other animals.

Where do animals that feed by night spend the day?

Lesson 53. *Haunts of Animals.*

The ·mouse, the ·rat, the ·rabbit, the ·fox, the ·mole, and some other animals live in ·holes in the ground. The ·deer, the wild boar, the ·hare, and others sleep among the grass in woods. The squirrel and the monkey live in trees. Beavers make their houses on the banks of narrow rivers. The place where a beast couches is its lair.

Lesson 54. *Habits of Animals.*

Animals with large ·blunt teeth feed on ·herbage; those with ·sharp cutting teeth prey on other animals. Some animals feed on ·insects, and others on ·fruits. The ·elephant has strong legs to support its heavy body. The seal has ·paddles to swim with. The cat has ·claws, and also a cushioned paw; she can move about without noise.

Lesson 53.

holes--called burrows.

mouse—there are several species; some live in houses and other buildings, others keep in fields.

rats—there are three kinds; the large brown rat, the black rat, and the water rat; the last burrows on the banks of small rivers and lives entirely on vegetables.

rabbit—the wild rabbit likes to burrow on sandy heaths among furze bushes.

fox—the earth of the fox is often known to the huntsman.

mole—it throws out the earth as it burrows.

deer, hare—the deer lies down in its *lair*; the hare, in its *form*.

Name some animals that live in holes in the ground.

What are these holes called?

What do you know about mice?

Name the three kinds of rats.

Tell me something about the water rat.

Where do wild rabbits like to burrow?

Name some animals which sleep among the grass?

What is the place called where the deer lie down?——the hare?

Where do the monkey and the squirrel live?

For what is the beaver noted?

What is a beast's lair?

Lesson 54.

blunt teeth—such as oxen, sheep, horses, &c.

herbage—grass and other plants.

sharp—as the tiger kind, the wolf, &c., their teeth have cutting edges.

insects—those that feed on insects, as the mole, armadillo, and ant-eater, have teeth that meet and fit into each other.

fruits—the teeth of such animals are not sharp but rounded.

elephant—both are suited to each other.

paddles—these paddles are webbed feet, but the animal walks, or rolls, very clumsily on land.

claws—hidden in the paw, but ready to be extended in an instant.

On what do animals with large blunt teeth feed?

What is herbage?

What animals do not feed on herbage?

What kind of teeth have beasts of prey?

Name some beasts of prey.

What animals feed on insects?

How are their teeth adapted for this purpose?

What kind of teeth have animals that feed on fruit?

How are the legs of the elephant adapted to its size?

With what does the seal swim?

What are its paddles?

What peculiarity has the cat?

Lesson 55. *Social Habits of Animals.*

Buffaloes live in ·herds, sheep feed in ·flocks, and the ·goat and the chamois inhabit high mountains. The young stags herd with the ·hinds in winter for ·protection. ·Wild hogs do not leave their young till they are strong. Oxen ·unite against enemies when they are attacked. ·Jackals hunt their prey in herds.

Lesson 56. *Labouring Animals.*

Some ·quadrupeds are ·serviceable to man, and labour for him. The horse carries his ·master, and draws heavy loads. The ·dog watches the house and the yard. The ·camel carries heavy burdens over hot and sandy deserts. The ass, the ·reindeer, and the ·elephant also labour for the service of man.

Lesson 55.

herds—large numbers; applied to beasts when feeding together.

flocks—generally applied to sheep, goats, or birds.

goat, &c.—their feet are formed for climbing and for leaping up and down rocks.

hinds—female deer.

protection—preservation from danger.

wild hogs—still found in forests on the continent of Europe.

unite—they put themselves in order, the boldest and strongest at the front.

jackals—they are thus able to bring down larger animals than themselves.

What are large numbers of buffaloes called?

What animals feed in flocks?

Where do the goat and chamois live?

For what are their feet formed?

How do the young stags seek protection in winter?

What do you mean by protection?

What are hinds?

When do wild hogs leave their young?

Show that oxen are sociable among themselves.

How do jackals hunt their prey?

What advantage do they thus derive?

Lesson 56.

quadrupeds—four-footed animals.

serviceable—by their labours; acting as the servants of man when trained.

master—many of the domestic animals know their master, and those who supply their wants.

dog—the dog knows strangers and either barks at, or watches them.

camel—no other animal could supply the place of the camel in the sandy deserts.

reindeer—this hardy deer is sheep, horse, and cow to the poor Laplander.

elephant—in the East.

What are quadrupeds?

How are some of them serviceable to man?

When do they act as servants?

Name some of them.

How is the horse useful?

How is the dog serviceable?

How does he treat strangers?

What animal is used to carry burdens across sandy deserts?

Could any other animal supply its place?

For whom does the ass labour?

What do you know about the reindeer?

Where is the elephant used as a beast of burden?

Lesson 57. *Uses of Animals for Food.*

Animals that ·feed on grass make the best food for man. The ·ox, the ·sheep, the goat, and the deer feed on grass, and their flesh is considered very valuable for food. The ·pig, the ·bear, the ·rabbit, and the hare are also serviceable for food. The flesh of young animals is sometimes eaten, it is very tender.

58. *Uses of Animals for Food. (Cont.)*

The flesh of monkeys is eaten by the ·American Indians; that of the ·elephant, the lion, the rhinoceros, the tiger, and the hippopotamus by the Africans. Horse-flesh is eaten by many nations in Europe; and the ·Greenlander and the ·Esquimaux eat the ·blubber of the whale, and the flesh of the seal.

Lesson 57.

feed on grass—these animals are called herbivorous; their flesh is not strong tasted like that of animals that feed on flesh.

ox—the most useful of all animals in a temperate climate; the buffalo and bison are varieties of the ox.

sheep—the flesh is excellent; the wool is an article of great value for clothing.

pig—one of the very useful animals for food; its flesh being eaten fresh, or salted and dried.

bear—the hams of the bear are also considered very good.

rabbit—there are many varieties of the tame rabbit, but the wild one is generally preferred for eating.

What animals furnish the best food for man?

What are they called?

Name some animals that feed on flesh.

How does their flesh differ from that of herbivorous animals?

Name some herbivorous animals.

What is said about the ox?

What are the bison and buffalo?

In what ways is the sheep useful?

How is the pig serviceable?

How may its flesh be preserved?

What is it then called?

What parts of the bear are considered very good?

What kind of rabbits are generally preferred for eating?

Lesson 58.

American Indians—the native tribes who inhabited America before Europeans settled there; they are fast diminishing.

elephant, &c.—the flesh of all kinds of animals is eaten by one nation or another.

Greenlander, Esquimaux — they feed chiefly on fish and on the seal—the flesh of the seal is palatable; its fat furnishes oil for their lamps; its sinews serve them with thread to sew with; its skin supplies them with a warm covering; and its oil is their chief commercial product.

blubber—the fat of the whale which yields whale-oil.

By whom is the flesh of monkeys eaten?

What are the American Indians?

Are they increasing or diminishing?

Name some animals, the flesh of which is eaten by the Africans.

By whom is horse-flesh eaten?

What people eat the blubber of the whale and the flesh of the seal?

What does the fat of the seal furnish?

How are its sinews useful?

Into what is its skin made?

What is blubber?

Does it yield any useful substance?

Lesson 59. *Uses of Animals for Clothing.*

The ·wool of the sheep supplies us with ·stockings, with ·blankets, and with ·cloth. The ·furs of many animals are made into coats, caps, and muffs. The ·hair of some beasts is woven into shawls and dresses. The hides of animals are tanned to make leather. The furs of the beaver and the rabbit are made into ·hats.

Lesson 60. *Sundry Uses of Animals.*

The elephant and ·walrus afford us ·ivory. The large bones of animals are bought by the turner. The ·horns of animals are used for handles for knives. The ·hair of the horse is woven for hair-seating. The whale and the seal yield us ·oil for light. Parings of hoofs and horns are made into ·glue. Candles are made from fat.

Lesson 59.

wool—besides the large quantity furnished by the flocks of this country, much is sent from foreign countries.

stockings—manufactured largely in Leicestershire.

blankets—chiefly manufactured at Dewsbury.

cloth—Leeds is one of the chief seats of the woollen cloth trade.

furs—those of the musquash, sable, ermine, beaver, fox, bear, lynx, and squirrel.

hair—the hair of the camel, and that of various kinds of goats are used for clothing.

hats—many hats are also made of silk and cotton, to imitate furs.

With what does the wool of the sheep supply us?

Whence do we get much of the wool for stockings, &c.

Where are stockings largely manufactured?

Where are blankets made?

Name one of the chief seats of the woollen cloth trade.

Into what articles of dress are furs made?

What animals supply us with furs?

For what purpose is the hair of some beasts used?

What beasts yield hair for this purpose?

Of what part of animals is leather made?

For what are furs also useful?

Lesson 60.

walrus—also called the *morse*, a kind of seal with two large ivory tusks in its upper jaw.

ivory—* an animal substance, hard, white, opaque, natural, solid, smooth, durable—

horn—* hard, dull, hollow, tapering, opaque, (if thick), fibrous, semi-transparent (if thin), natural—

hair—it is also curled to stuff cushions, chairs, beds, sofas.

oil—in the countries where there are months of darkness, the animals yield oil for light.

glue—* an animal substance; brown, hard, bright, soluble, semi-transparent, artificial—

What animals afford us ivory?

Name some of its qualities.

What is the walrus?

What is it also called?

By whom are the large bones of animals bought?

How are the horns of animals useful?

Name some of the properties of horn.

What kind of hair is woven for hair-seating?

How is it also used?

What animals yield oil for light?

Where are these animals particularly useful?

Of what substances is glue made?

Tell me some of its properties.

SECTION VIII. OF BIRDS.

Lesson 61. *Of Birds.*

Animals produced from ·eggs are called *ovipara.* Birds, insects, and some other animals are ·*oviparous.* Birds have ·bills, ·feathers, ·wings, ·tails, and legs; their legs have toes and ·claws. In their throat they have a crop. Some have a ·comb, and others a ·tuft of feathers on their heads. Some birds walk, others climb, others perch, others swim.

Lesson 62. *Kinds of Birds.*

The hawk, the kite, and the eagle are birds of ·prey. Cuckoos, wood-peckers, and parrots are good ·climbers but ·bad walkers. The poultry kinds are ·good walkers but they do not fly well. The ·ostrich and the ·emu are good runners. Long-legged birds wade in marshes. ·Web-footed birds swim well.

Lesson 61.

oviparous—oviparous animals are those that lay eggs.

eggs—* the parts of an egg are the shell, the skin, the white, the yolk ; they are oval, hard, white, eatable, nutritious, natural ;—the shell is thin, brittle, smooth, semi-transparent—

bills—to peck and seize with.

feathers—for clothing instead of hair, wool, &c.

wings—instead of fore-legs ; to fly with.

tails—to assist their flight.

claws—to scratch or to seize with.

comb—the red toothed crest of flesh on the head.

tuft—sometimes called the top-knot.

What do you mean by ovipara?

Name the parts of an egg.

Tell me some of the qualities of eggs.

What animals are oviparous?

What are the parts of a bird?

How are birds clothed?

What is the use of their bills?

What are their claws for?

Where is their crop?

What birds have a tuft of feathers on their heads?

What is their comb?

Tell me some of the different actions performed by various birds.

Lesson 62.

prey—they prey upon smaller birds, upon small quadrupeds, and some upon fish.

climbers—showing that they live among the trees, either for their fruit or for the insects they afford.

bad walkers—showing that their natural habits are not to walk much.

good walkers—showing that their lives must be chiefly spent on the ground.

ostrich—a strong-legged bird of the deserts, which runs very swiftly.

emu—the ostrich of New Holland.

web-footed—formed for swimming like the duck.

Name some birds of prey.

On what animals do they prey?

Name some good climbers.

Are they adapted for walking?

What do we learn from their living among trees?

What kinds of birds are good walkers but bad flyers?

Where are their lives chiefly spent?

What birds are good runners?

What is the ostrich?

What is the emu?

What birds wade in marshes?

On what do they feed?

What birds swim well?

Give an example.

Lesson 63. *Peculiarties of Birds.*

Rooks build and live together in ·companies; finches and sparrows have ·strong bills; the cross-bill ·extracts seeds from fir-cones; the ·swallow feeds on insects; the woodpecker ·taps on the bark of trees to disturb the insects on which it feeds; owls prey by night; the ·cuckoo lays its eggs in the nests of other birds.

64. *Peculiarities of Birds. (Continued.)*

The ·ostrich runs as fast as a race-horse; ·wading birds have long necks; the ·stork destroys snakes; the ·albatross is the largest of all the sea-birds; the ·flight of the eagle is very rapid; the ·frigate-bird can neither walk nor swim well, it is formed for flight; the ·penguin has small wings, it walks badly, but swims well.

Lesson 63.

companies—social birds, a cluster of their nests is called a rookery.

strong bills—enabling them to feed on grain, seeds, or insects.

extracts—the seeds are concealed beneath the hard scales of the cones; but the bird obtains them by means of its curious bill.

swallow—it has an enormous "gape," and it captures its prey flying.

taps—when the insects are disturbed, it thrusts out its extensible tongue and seizes them.

cuckoo—insects, worms, and soft fruits are its chief food.

Name some birds that build in companies.
What is a rookery?
What kind of bills have finches and sparrows?
On what do their bills enable them to feed?
On what seeds does the cross-bill feed?
Where are the seeds concealed?
How is it enabled to obtain them?
On what do swallows feed?
How do they feed?
How does the woodpecker obtain its food?
When do owls prey?
Where does the cuckoo lay its eggs?

Lesson 64.

ostrich—its wings do not enable it to fly but help to increase its speed in running.

wading birds—as the heron, crane, stork, flamingo, spoon-bill, &c.

stork—much esteemed in marshy countries for the services it performs.

albatross—the spread of its wings is sometimes fourteen feet.

flight—the speed of many other birds is also remarkable, as that of pigeons and swallows.

frigate-bird—it builds on uninhabited islands; robs gulls of their prey; soars almost out of sight.

penguin—in the water it can swim and dive like a fish.

What bird runs as fast as a race-horse?
Are its wings useful?
What peculiarities have wading birds?
Name some wading birds.
How is the stork very useful?
Where is it much esteemed for its services?
Which is the largest of all the sea-birds?
To what size does it attain?
For what is the eagle remarkable?
What do you know about the frigate-bird?
Can the penguin walk well?
Describe its motions when in the water?

Lesson 65. *Plumage of Birds.*

The ·*plumage* of birds consists of a number of ·feathers of various sizes. These feathers are light, soft, and strong. Some birds have a very ·gay plumage. Among these are peacocks, parrots, macaws, humming-birds, and birds of paradise. Birds ·lose their old feathers, and obtain ·new ones every year. This change is called ·*moulting*.

Lesson 66. *Nests of Birds.*

Birds ·build *nests* for their eggs and young ones. These nests are made of ·moss, sticks, straw, wool, &c. Some of the smaller birds build their nests in ·hedges. The ·swallow builds in chimneys; the ·ostrich lays her eggs in the sand; the eagle builds on lofty rocks; the sea-birds build in cliffs on the coast.

Lesson 65.

plumage—consisting of feathers for warmth, and others for flight.

feathers—adapted for different purposes; in water birds downy, in ostriches light and loose; in most birds stiff and close, for flying.

gay—birds that live among the bright foliage, fruit, and flowers of hot climates, have a gay plumage, as the parrots, macaws, humming-birds, &c.

lose—during the time of moulting they are generally not in health.

new—the new feathers are warmer than the old ones and may be considered as their winter dress.

moulting—shedding a natural covering.

Of what does the plumage of birds consist?

Name the two kinds of feathers of which it is composed.

Mention some of the qualities of feathers.

What kind of feathers have water birds?

What kind have ostriches?

Why are the feathers of most birds stiff and close?

Name some birds that have a gay plumage?

Where are they found?

How often do birds change their feathers?

What is this change called?

Which are warmer, the old feathers or the new ones?

Lesson 66.

build—they do this without instruction, by instinct; it is wonderful that all birds of one kind make nests so exactly alike.

moss, &c.—some birds keep to the same kinds of material year after year; others pick up every thing that can be interwoven; the nests are generally lined with wool or feathers for warmth.

hedges—the goldfinch and many small birds make beautiful nests.

swallow—probably in hollow trees where there are no chimneys.

ostrich—in cold countries the ostrich sits on her eggs in the sand; in hot countries they are hatched by the power of the sun.

For what do birds build nests?

How are they taught to build them?

What is there remarkable about the nests of the same kinds of birds?

Of what materials are birds' nests made?

Why are they generally lined with wool or feathers?

Where do some of the smaller birds build their nests?

Where does the swallow build?

Where does the ostrich lay its eggs?

How are they hatched in hot countries?

Lesson 67. *Voices of Birds.*

Most birds have a ·voice. The cock ·crows; the hen ·clucks; geese ·hiss and ·scream; ducks quack; the pigeon coos; the swallow twitters; the cuckoo repeats "·*cuckoo*"; the ·bullfinch and the ·blackbird whistle; but the song of the ·nightingale is the sweetest of them all. The singing of birds commences in ·spring.

Lesson 68. *Migrations of Birds.*

Some birds visit different ·climates. The ·swallow, the cuckoo, and the nightingale ·arrive in spring, and depart in autumn; they pass the winter in ·warmer countries. Birds from ·colder climates, such as wild geese and wild ducks, pass the winter in our country. Some birds ·traverse wide seas and extensive countries.

Lesson 67.

voice—these sounds are their language which is understood by themselves.

crows—the crowing of the cock is a note of pleasure, or a shrill sound of defiance.

clucks—to call her brood of chickens.

hiss—to prevent the approach of strangers.

scream—when alarmed.

cuckoo—an unquestionable sign of mild weather.

bullfinch—may be taught tunes.

blackbird—some of its notes resemble those of the nightingale; the hen is brown.

nightingale—sings during most of the night.

spring—birds pair early in spring.

Have birds a voice?

In what way are the notes of birds serviceable to them?

What does the crowing of the cock indicate?

What bird clucks?

Why does it cluck?

What noises do geese make?

Why do they hiss?

When do they scream?

What birds quack?

What is the note of the pigeon called?

Of what is the coming of the cuckoo a sign?

What bird twitters?

Name two birds that whistle.

What bird sings sweetly?

When does the singing of birds commence?

Lesson 68.

climates—they go to different countries as the seasons change.

arrive—instinct teaches them when to come and when to depart.

swallow—the swallows generally assemble in large numbers several times before they depart.

warmer—they are said to migrate to the south of Europe and Africa.

colder—our summers are too warm for some birds, they therefore leave England for more northern countries.

traverse—instinct is their guide; many of them migrate by night.

What wonderful habit have some birds?

When do swallows arrive in this country?

What other birds visit us in spring?

When do they depart?

How do they know when to come and when to depart?

Where do they pass the winter?

How do swallows generally prepare for their journey?

What part of the year do birds from colder climates spend in this country?

What birds belong to this class?

Why do they not remain here during summer?

Lesson 69. *Uses of Birds.*

The ·flesh of many birds such as that of the goose, the hen, the duck, the partridge, the pheasant, the pigeon, the lark, the plover, &c. is good for food. Ducks, geese, and swans give us ·down and ·feathers for beds. Geese give us ·quills for making pens. The ·quills of crows are also used for fine writing and for drawing.

SECTION IX. REPTILES AND FISHES.

Lesson 70. *Reptiles.*

·Reptiles have ·cold red blood like fishes. Many of them live both on ·land and in ·water. Some reptiles have ·legs, as the frog, the toad, the lizard, the crocodile, the alligator, and the tortoise; others have no legs, but ·crawl on their belly, as snakes, serpents, and vipers. Some serpents are ·venomous.

Lesson 69.

flesh—domestic poultry and many other birds are excellent eating.

down—down is chiefly obtained from water birds; from the eider duck especially.

feathers—those of water birds are the best.

quills—metal pens are now extensively used instead of quills.

a quill—* the parts of the barrel, the shaft, the feather, the laminæ, the pith; a quill is an animal production; it is long, stiff, useful, natural, inanimate; —the barrel is transparent, hard, hollow, light, cylindrical, elastic; the shaft is feathered, white, stiff, opaque—

In what way is the flesh of many birds useful to us?

Name some of these birds.

What does the hen supply for the table besides flesh?

How do ducks, geese, and swans contribute to our comfort?

From what bird especially is down obtained?

What do geese give us for making pens?

What kind of pens are now extensively used instead of quill pens?

For what are crow quills used?

Name the parts of a quill.

Name some of its qualities?

Mention some qualities of the barrel.——of the shaft.

Lesson 70.

reptiles—creep, many swim, some leap and run; they have neither hair, fur, nor feathers.

cold—the blood of birds and beasts is hotter than the air in which they live, that of reptiles is warmed or cooled by the surrounding temperature.

land—water—some change from water to land, as the frog; some live either on land or in water.

legs—the legs of those that have these members just lift the body off the ground.

crawl—these animals are quite destitute of limbs, yet they move with rapidity and launch upon their victims in an instant.

venomous—their bite is poisonous.

What kind of blood have reptiles?

What difference is there between the blood of reptiles and that of beasts and birds?

How do different reptiles move about?

What is there remarkable about their covering?

Where do many of them live?

Are all reptiles provided with legs?

Name some reptiles that have legs.

What kind of legs have they?

What reptiles have no legs?

Yet what actions are they able to perform?

Lesson 71. *Peculiarities of Reptiles.*

Some reptiles have a ·smooth skin, others are covered with a ·shell or shield. The shell of the ·tortoise is very hard. The shell of one kind of turtle is beautiful, and is made into combs, &c. The ·flesh of another turtle is very delicate. Some lizards are harmless, others are dangerous. ·Frogs appear after warm showers.

Lesson 72. *Fishes.*

·Fishes live in seas, in rivers, in streams, and in lakes. Some fishes have a smooth ·skin, others are covered with ·scales. The bones of fishes are ·soft and white. Fishes lay thousands of ·eggs, which are called ·spawn. These eggs are hatched in the sea, in rivers, or in mud. Fishes have no voice.

Lesson 71.

smooth—that is, without scales or shells.

shell—the tortoise can protect itself by drawing its head and feet under its shell.

tortoise—one was recently received at the zoological gardens in London weighing 500 lbs. and supposed to be 180 years old.

flesh—turtle soup is made from it.

lizards—one of the lizards called the "monitor" is said to be attached to the human race, whom it warns of the approach of serpents, alligators, and other noxous animals, by a shrill whistle. One of these lizards saved the life of Lord Nelson.

frogs—called tadpoles before they become frogs.

How are reptiles clothed?

With what is the tortoise covered?

Explain how this shell is very useful to the tortoise.

Into what articles is tortoiseshell made?

Tell me the weight of the tortoise which was recently received at the zoological gardens in London.

How old is it supposed to be?

Name a reptile which has very delicate flesh.

How do lizards differ from each other in their characters?

When do frogs appear?

Lesson 72.

fishes—they have no arms, legs, or wings, but fins; they are formed to live in water.

skin—in some cases the scales are so small they cannot be seen.

scales—which are sometimes plates of considerable thickness arranged like slates upon a roof.

soft—much softer than the bones of other animals.

eggs—those fishes that are used for food produce more eggs than those which are not.

spawn—the spawn of some kinds of fish is eaten by other kinds.

Where do fishes live?

What have they instead of arms, legs, or wings?

How are some fishes clothed?

With what are others covered?

How do the scales of different fishes vary in size?

How are the scales of fishes arranged?

What sort of bones have fishes?

What are their eggs called?

What kind of fishes produce the most eggs?

Where are they hatched?

Have fishes any voice?

How is the spawn of fishes sometimes destroyed?

Lesson 73. *Uses of Fishes for Food.*

Both ·sea and ·river fish are useful for food. The chief sea fish eaten by man are the ·cod, the haddock, the sprat, the ·herring, the ·turbot, the sole, the ·mackerel, the ·flounder, the skate, &c. The chief river fish are the ·salmon, the ·trout, the perch, the roach, the eel, and the pike. Of fishes the shark is the most ·voracious.

SECTION X. OF INSECTS AND WORMS.

Lesson 74. *Insects.*

·Insects have six legs, but ·spiders and mites have eight. Insects are divided into three parts; the head, the ·thorax, and the abdomen. Some insects have ·stings, as the wasp, the bee, and the hornet. The most ·common insects are the ·fly, the moth, the butterfly, the beetle, the ant, the bee, the wasp, the ·earwig, &c.

Lesson 73.

sea fish—salt-water fish.
river fish—fresh-water fish.
cod—immense quantities are taken off the Yorkshire coast.
herring—it frequents our coasts in vast shoals.
turbot—an esteemed flat fish.
mackerel—the green, black, and silvery colours of this fish are very beautiful; it cannot be kept fresh many hours.
flounder, skate—inferior to many as food.
salmon—one of the finest fresh-water fishes of our own rivers.
trout—a delicate flavoured fish.
voracious—all fishes are greedy; the shark has extensible jaws, and a large one would swallow a man.

In what way are fishes useful?
Name the chief sea fish eaten by man.
What are sea fish?
Where is the cod caught in large numbers?
What fish frequents our shores in vast shoals?
What kind of a fish is the turbot?
What can you tell me about the mackerel?
What are fresh-water fish?
Name the chief fresh-water fish?
Which is the finest of them?
Of all fishes which is the most voracious?
What is there peculiar in its jaws?

Lesson 74.

insects—they have no skeleton like beasts, birds, reptiles, and fishes.
spiders and mites—the scorpions also belong to this class of animals; they all have eight legs.
thorax—the middle division of the body in insects—between the head and the abdomen.
stings—both for attack and defence.
common—every insect is highly beautiful if examined under a magnifying glass.
fly, earwig—some insects are called pretty, others ugly, some useful, others idle, others industrious; all, however, fulfil their parts in creation, and all are useful and beautiful.

How many legs have insects?
What animals have eight legs?
Name the three parts into which the body of an insect is divided.
In what other respect do insects differ from beasts, birds, reptiles, and fishes?
Which part of an insect's body is called the thorax?
Name some insects with stings.
What is the use of their stings?
Name some of the most common insects.
When does every insect appear very beautiful?
What should we always bear in mind with regard to every object in creation?

Lesson 75. *Changes of Insects.*

Insects undergo several ·changes. Most of them change three times. First, they are in a little ·*egg*, which changes into a ·*caterpillar*; the caterpillar grows to its full size, and then changes into a ·*chrysalis*. After some time the chrysalis bursts, the ·*winged insect* appears, lays its eggs, and soon dies.

Lesson 76. *Uses of Insects.*

Insects are useful in various ways. The bee gives us ·honey and ·wax. The silkworm produces ·silk. The ·cochineal insect yields the red lakes used by painters and dyers. The ·lac insect produces a resin from which sealing-wax is made. From the gall-fly we obtain ·gall-nuts, which are used in making ink and black dyes.

Lesson 75.

changes—these changes, and the rapidity of growth in the caterpillar, are worthy of notice.

egg—the eggs of insects are very curious and beautiful if magnified.

caterpillar—in this state they furnish a great supply of food to birds.

chrysalis—called thus from the golden spots on some kinds, *chrysal*, meaning golden; also called *pupa*, meaning a child, from the appearance of some being like a child in swaddling bands.

winged insect—in this state it is perfect in all its parts, and lives only a short time.

What do insects undergo?

How many times do most of them change?

What are insects at first?

Into what do they change?

What do you know respecting the insect while it is in this state?

What takes place when the caterpillar has grown to its full size?

Why is the insect in this state called a chrysalis?

Why is it also called a pupa?

What takes place when the insect has been a chrysalis for some time?

What does it do after this?

Lesson 76.

honey—* an animal production; sweet, fluid, thick, sticky, natural, yellowish, wholesome—

wax—* (bees' wax) an animal production; yellow, solid, opaque, dull, fusible, hard, odorous—

silk—* the cocoon, or outward covering of the chrysalis of the silkworm; it is light, strong, lustrous; a single cocoon yields about 600 yards of fine silk thread—

cochineal—this insect feeds on a kind of cactus.

lac the insect punctures trees and the resin flows out.

gall-nuts—a disease on oak-leaves caused by the gall-fly.

Are insects useful in any way?

Name some that are useful.

How is the bee useful to us?

Mention some qualities of honey.

What kind of a substance is bees' wax?

What insect produces silk?

What is silk?

What length of silk thread is yielded by one cocoon?

What does the cochineal insect supply?

What does the lac insect produce?

What is made from this resin?

With what does the gall-fly supply us?

Where are gall-nuts formed?

For what are they used?

Lesson 77. *Worms and Shells.*

Some animals have ·soft bodies. They are formed either with ·rings or with ·shells instead of bones. The bodies of the ·earth-worm and the leech are ringed. The snail and the oyster have shells. Some of the soft-bodied animals live ·upon the land, such as the snail; others live ·in the water, such as the oyster, &c.

Lesson 78. *Uses of Worms.*

Of soft-bodied animals the ·earth-worm loosens the soil by boring its way through it. Leeches are useful in ·extracting blood. The ·cuttle-fish produces a black fluid from which ·*sepia* is made. The shell of the common oyster produces ·pearls. From another kind of oyster-shell ·pearl buttons and ornaments are made.

Lesson 77.

soft bodies—as the earth-worm, the snail, the slug, the leech, &c.

rings—the bodies of leeches and earth-worms are composed of a number of little rings.

shells—as the snail, the oyster, &c.

earth-worm—the rings of its body are furnished with small curved bristles, by means of which it pushes itself along the earth.

on land—different kinds of slugs, worms, snails, &c.

in water—the cockle, muscle, star-fish, &c.

What kind of a body has the earth-worm?

Name some other animals that have soft bodies.

How are their bodies formed?

How is the earth-worm enabled to push itself along?

What provision have the oyster and snail?

Name some other soft-bodied animals that have shells.

Where do soft-bodied animals live?

Name some that live on land.

Mention some that live in the water.

Lesson 78.

earth-worm—the lumps of fine earth called *worm-casts* are the excrements of the earth-worm, and are a fine manure for grain and grass.

extracting—instead of using the lancet.

cuttle-fish—there are several species; all have a horny beak for tearing their prey, and all have an ink bag.

sepia—the ink of the cuttle-fish, used as a water-colour.

pearls—of which costly necklaces, and other ornaments, are made.

pearl—the oyster which produces mother of pearl is found in the Indian seas

What kind of a body has the earth-worm?

How is it useful?

What are worm-casts, and in what way are they useful?

What service do leeches render to man?

Instead of what instrument are they used?

What does the cuttle-fish produce?

What are the peculiarities of the cuttle-fish?

What is sepia?

What does the shell of the common oyster produce?

What articles are made from another kind of oyster-shell?

Where are pearl oysters found?

SECTION XI. OF PLANTS.

Lesson 79. *Kinds of Plants.*

·Trees, ·shrubs, ·grasses, ·herbs, ·ferns, ·mosses, ·lichens, and ·fungi are plants. Fungi grow on the ground and on decayed trees; lichens grow on stones and trees; mosses grow in ·woods and on old walls; grasses, in fields; ferns, in shady places; herbs and flowers, in gardens. Trees and shrubs grow in woods and ·plantations.

Lesson 80. *Trees and Shrubs.*

Trees and shrubs are ·woody plants. Trees throw out their ·branches from the ·trunk, but ·shrubs throw out their branches from the root. Some trees are grown ·in gardens, and in ·orchards; others are grown in ·woods and in ·forests. Some trees are planted for ·ornament, others for fruit, others for ·timber.

Lesson 79.

trees—tall woody plants with branches.
shrubs—low woody plants.
grasses—the chief herbage of the fields.
herbs—plants and flowers of various kinds, but not woody.
ferns—called brake, or bracken.
mosses—the smallest kind of plants, they are generally soft and green, and without stems.
lichens—sometimes called mosses, but lichens are generally dry, hard, and scaly.
fungi—the mushroom, puff-ball, &c.
woods—large tracts of ground covered with trees.
plantations—portions of ground planted with young trees.

Name some of the different kinds of plants.
What are trees?
What are shrubs?
What plants form the chief herbage of fields?
What are herbs?
What are ferns also called?
Where do they grow?
What are mosses?
Where are they found?
How may lichens generally be distinguished from mosses?
Where do lichens grow?
What kind of plants are fungi?
Where do they grow?
Where do trees and shrubs grow?
What are woods?
What are plantations?

Lesson 80.

woody—supplying timber for building purposes and furniture.
branches—the smaller side stems of trees.
trunk—the main stem.
shrubs—many of them are evergreens.
in gardens—chiefly for fruit, shade, and ornament.
orchards—places enclosed for the growth of fruit trees, as cherries, apples, &c.
woods, forests—planted chiefly for the growth of large timber trees.
ornament—both native trees, and hardy trees from foreign countries.
timber—oak for ship building, &c.

What are trees and shrubs?
With what substance do they supply us?
How do trees and shrubs differ in their growth?
What is the trunk of a tree?
What are the branches?
What kind of plants are called evergreens?
Where are trees grown?
What trees are grown in gardens?
What are orchards?
Whence are large timber trees chiefly obtained?
Whence have we obtained some of our ornamental trees?
For what is oak timber used?

Lesson 81. *Forest Trees.*

·Forest trees are employed for a great variety of purposes. ·Larches, pines, and firs are used for house-building; the ·oak, for ship-building; the ·elm, for water-mills, and for pumps. The ·ash is used for tool-handles; ·beech, for bowls; ·walnut, for gun-stocks; lime, for carving; and the ·box, for wood-engraving.

Lesson 82. *The Corn Plants.*

The most valuable of the grasses are the ·corn-plants. They ·contain a large quantity of meal which is ·suitable for human food. They grow ·high above the earth; their stems are ·hard, smooth, hollow, and light. The corn-plants are grown in ·many ·countries; the grain when in the ear is covered with a husk.

Lesson 81.

forest trees—some of them do not attain perfection till they are 100 years old.

larch, pine, fir—the wood of these trees is called deal.

oak—the English oak grows slowly, and is more durable than foreign oak.

elm—a native tree of which there are many varieties.

ash—a very tough kind of timber, like the oak it is late in leaf.

beech—a smooth barked tree, the wood is hard and brittle.

walnut—a beautiful timber for furniture on account of its veins.

lime—a good tree for growing in towns.

box—never attains a large size in [England.

What do forest trees supply for the use of man?

How long are some forest trees in attaining perfection?

What timber is used for house-building?

For what is oak used?

What do you know about the English oak?

To what purpose is elm applied?

What kind of wood is used for tool-handles?

What articles are made of beech?

For what purpose is walnut used?

In what way is lime used?

What kind of wood is used for wood-engraving?

Lesson 82.

corn plants—wheat, barley, oats, rye, millet, rice, maize.

contain—the whole of each grain when freed from the husk is good for bread; and every other part of the plant is useful.

suitable—because it yields much nutriment.

high—on stiff stems which are stronger for being jointed.

hard, &c.—formed thus for their careful protection.

many—thus when one country has too little it may purchase from another.

countries—the wheat climate is too cold for rice, and the rice climate is too hot for wheat.

Which are the most valuable of all the grasses?

Name some of the corn-plants.

What do they contain that is suitable for human food?

Why is it suitable for human food?

What do you know about the growth of the corn plants?

What kind of stems have they?

How are their stems strengthened?

Are the corn plants grown only in one country?

What advantage arises from this?

Why do not wheat and rice grow together in the same country?

How is the grain protected in the ear?

Lesson 83. *Garden Produce.*

The garden supplies many ·wholesome vegetables. The most common are ·potatoes, ·cabbages, ·cauliflowers, ·carrots, ·parsnips, beet, ·spinach, turnips, ·onions, broccoli, ·asparagus, and ·seakale. The principal ·salad herbs are mustard, cress, lettuce, and radishes. The chief ·pot-herbs are mint, thyme, marjoram, sage, &c.

Lesson 84. *Medicinal Plants.*

Many ·medicines are obtained from plants. Of some plants the root is used, as the ·rhubarb; of others, the flowers, as the ·camomile; of others, the juice, as the ·foxglove and the ·poppy; of others, the leaves, as the ·senna. The healing properties of plants are known to chemists who prepare medicines for the ·apothecary.

Lesson 83.

wholesome—good for nutriment.
potatoes—furnish us with tubers.
cabbages—supply the solid heart formed by leaves.
cauliflower—we eat the flower-buds before they open and become flowers.
carrots, parsnips, &c.—the tapering roots are eaten.
spinach—the green leaves are used for food.
onions—the bulbs are eaten.
asparagus, seakale—we eat the young stems.
salad herbs—prepared with vinegar, &c., or eaten with salt.
pot herbs—used in cookery ; in soups and broth, as condiments, and in sauces.

What does the garden supply for our use?
What is meant by wholesome?
Name some of the most common garden vegetables.
Name some vegetables of which we eat the roots.
What part of the cabbage do we eat?
Of what plant do we eat the flower-bud?
Which are the principal salad herbs?
How are salad herbs prepared?
Which of them are merely eaten with salt?
Mention the chief pot herbs.
For what purposes are they used?

Lesson 84.

medicines—various plants and their juices used to cure diseases.
rhubarb—a purgative medicine.
camomile—used for fomenting wounds and sores ; the flowers are made into a medicinal tea.
fox-glove—valuable as a medicine, though poisonous.
poppy—yielding opium and laudanum, both powerful medicines, but both poisonous; fomentations are made from poppy-heads.
senna—one of the common purgative medicines.
apothecary—as so many medicines are poisonous, the apothecary's advice is requisite before using them.

Name some plants from which medicines are obtained.
Why are medicines used?
What part of the rhubarb is used as a medicine?
What is the nature of rhubarb?
How are camomile flowers used?
What part of the fox-glove and poppy is medicinal?
What is senna?
To whom are the healing properties of plants known?
For whom do chemists prepare medicines?
Why is an apothecary's advice about medicine requisite?

Lesson 85. *Garden Flowers.*

The plants cultivated for their flowers are the ·polyanthus, the ·stock, the ·wallflower, the ·larkspur, the ·rose, the ·sunflower, the ·pansy, the ·tulip, the hyacinth, the holly-hock, &c. *Annuals* are sown and die within a year: *perennials* increase at the root and seldom die. The roots of the tulip and hyacinth are called *bulbs.*

Lesson 86. *Ferns, Mosses, Fungi.*

·*Ferns* are used for litter for cattle, and for thatching houses with. ·*Mosses* and ·*lichens* grow on stones, on walls, on trees, and on the ground. Some mosses are used for medicine, and some lichens for ·*dyeing.* Mushrooms, truffles, and ·toadstools are called *fungi.* Some of the fungi are eatable, but others are poisonous.

Lesson 85.

polyanthus—a species of coloured primrose.

stock—the double Brompton stock, a beautiful and fragrant flower.

wallflower—one of the sweetest scented of the early flowers; there are many varieties, some of them are double.

larkspur—a good assortment contains nearly every colour; some varieties are double.

rose—one of the favourite flowers of all ages and of all countries.

sunflower—so named from its turning towards the sun.

pansy—the varieties are innumerable.

tulip—formerly more esteemed than at present.

Name some plants that are cultivated for their flowers.

What kind of a flower is the polyanthus?

Mention one of the sweetest scented of the early flowers.

What colours are contained in a good assortment of larkspurs?

What do you know about the rose?

Why is the sunflower so called?

What plants are called annuals?

What is the difference between annuals and perennials?

Name some plants that have bulbous roots.

Lesson 86.

ferns—very abundant in woods; the seeds are found at the back of the leaf.

moss—*soft, green, natural, vegetable, flexible, tough, light, fibrous, native and foreign, odorous, combustible—

lichens—they may frequently be seen on exposed stones on mountains, and on the bark of trees in the garden and in the wood.

dyeing—one kind is used in dyeing scarlet, another kind in dyeing blue.

toadstools—they look so much like mushrooms that people have been poisoned by eating them in mistake.

To what uses are ferns applied?

Where are they abundant?

In what parts of the plant is the seed found?

Where do mosses and lichens grow?

Where may lichens frequently be seen?

Mention some of the qualities of moss.

How are some mosses used?

In what art are some lichens used?

What colours do they produce?

What plants are called fungi?

How do some of the fungi differ from others?

What danger is there in eating mushrooms?

Lesson 87. *Uses of Plants.*

Many articles of food and of ·luxury are derived from plants, as ·tea, coffee, ·cocoa, ·chocolate, the spices, sugar, treacle, arrow-root, and sago. The ·bread-fruit tree affords food, cloth, and timber to the South Sea Islanders. The ·date-palm supplies much food to the inhabitants of Africa, and is useful for other purposes.

Lesson 88. *Uses of Plants. (Continued.)*

The ·cocoa-nut contains a pleasant ·beverage within its ·kernel, the shell is made into cups, and the ·fibres of the husk into mats, &c. Houses are built of the wood of the cocoa-palm, and roofs are covered with the plaited ·leaves. The cocoa of the grocer is made from the fruit of the ·cacao-plant, not from that of the cocoa-palm.

Lesson 87.

luxury—fruits, puddings, and other articles not necessary for existence.

tea—the dried leaves of a tree, made into a beverage of very general use.

cocoa, chocolate—both are prepared from the seeds of the cacao-tree.

bread-fruit—it grows in the South Sea Islands; its large fruit, when cooked, tastes like the finest wheaten bread.

date-palm—the fruit, called dates, is the chief support of the Arabs; especially in the deserts, where a few fertile spots are covered with them.

Whence do we derive many articles of food and luxury?

Mention some of the kinds of food that we obtain from plants.

What is meant by luxury?

What is tea?

From what seeds are cocoa and chocolate prepared?

What benefits does the bread-fruit tree afford to the South Sea Islanders?

What does bread-fruit resemble in taste when cooked?

On what fruit do the Arabs chiefly subsist?

For what is the date-palm useful to the inhabitants of Africa?

Lesson 88.

cocoa-nut—the fruit of a palm tree; it grows only in hot climates.

beverage—the milky liquid filling the hollow kernel.

kernel—half an inch in thickness round the inside of the shell.

fibres—called *coir*, and used for strong cordage, for mats, and also for stuffing mattresses.

leaves—they are fourteen or fifteen feet long, and winged like ferns.

cacao—the seeds grow within a pod; they are roasted and powdered; sweetened with sugar, and flavoured with spices.

In what climates does the cocoa-palm grow?

What does the hollow kernel contain?

What kind of a kernel has a cocoa-nut?

Into what is the shell of the cocoa-nut made?

What are the fibres of the husk called?

How are they used?

For what purpose is the wood used?

In what way are the leaves useful?

Of what size are they?

From what fruit is the cocoa of the grocer made?

How is it prepared?

Lesson 89. *Varieties in Vegetables.*

Plants ·vary from each other in their ·parts. In some plants the ·roots are tapering, in others they are fibrous. In some the ·stem is woody, in others it is hollow. In some the ·leaves are roundish, in others they are angular. Blossoms vary in colour, shape, smell, &c. ·Seeds ripen in shells, in pulp, in pods, and in husks.

Lesson 90. *Growth of Plants.*

Plants are nourished by ·sap. The sap rises through the roots into the stem, from the stem into the branches, and runs through the leaves. Some plants require great ·heat to make them grow, others grow in ·cold places. Some plants grow from ·seeds, others from ·pieces of the root, others from parts of the plant itself called ·slips.

Lesson 89.

parts—the root, stem, leaves, buds, flowers.

roots—some are woody and solid, others stringy or fibrous.

stem—the upright and main support of the plant from the root to the top; woody and solid in trees; hollow in wheat.

leaves—the variety in the shape and substance of leaves is very great, as may be best shown by specimens.

blossoms—they vary in shape, colour, scent, size, &c.

seeds—nuts in shells, gooseberries in pulp, peas in pods, corn in husks.

How do plants vary from each other?

Name the parts of a plant.

How do the roots of different plants vary?

What plant has a tapering root?

What part of a plant is called the stem?

What plants have woody stems?

Tell me some plants that have hollow stems.

How are we enabled to distinguish the leaves of different plants?

What difference have you observed in the blossoms of plants?

Lesson 90.

sap—it ascends from the roots carrying nutriment from the earth to the leaves, it descends near the bark of the tree or plant.

heat—sheltered spots under walls to shield them from the cold are a sufficient protection for some plants, others require hot-houses to bring them to perfection.

cold—many of the mountain plants will not grow in level and sheltered countries.

seeds—as peas, beans, onions, &c.

pieces—as horse-radish, mint, &c.

slips—side branches from the stem or root.

How are plants nourished?

Whence do plants derive their nutriment?

Describe the circulation of sap in a plant.

What do some plants require to make them grow?

Where do other plants grow?

What plants cannot thrive in hot situations?

What plants do not thrive in warm situations?

In what different ways may plants be propagated?

Mention some that grow from seeds.

What are slips?

What plants can you name that grow from slips?

SECTION XII. OF THE EARTH.

Lesson 91. *Divisions of Land.*

The earth is an immense ·globe. Its ·surface is composed of land and water. The land contains plains, mountains, valleys, and islands; the water consists of oceans, seas, and rivers. There are many ·countries in the earth. In these countries are ·cities, ·towns, ·villages, fields, gardens, mines, roads, fens, ·moors, forests, &c.

Lesson 92. *Tracts of Land.*

Large tracts of level land are called ·*plains*. The high parts are ·*hills* and ·*mountains*. Burning mountains are called ·*volcanoes*. The tracts of land between the slopes of high hills are ·*valleys*. Bodies of land with water all around them are ·*islands*. Hollow rocks in the earth are called ·*caverns*.

Lesson 91.

globe—it is not a wide plain as it appears to us; and our own country is a very small part of it.

Of what form is the earth?

What does it appear to be?

surface—the part we dwell upon; the solid earth also exists underneath its seas and oceans.

Of what is its surface composed?

What is underneath the oceans and seas?

countries—as England, France, Spain, Egypt, &c.

What natural divisions does the land contain?

Of what divisions does the water consist?

cities, towns—as London, Liverpool, Birmingham, Sheffield, Leeds: generally very populous places.

What countries can you mention?

What divisions do countries contain?

villages—most villages consist of only a small number of farms and scattered habitations.

Of what do most villages consist?

Name some cities.——towns.——villages.

moors—tracts of uncultivated land.

What are moors?

Lesson 92.

plains—some plains are deserts, others are covered with forest trees, others are very fertile.

What are plains?

How do plains vary in their character?

mountains and hills—the very high parts of the solid earth; as the very low parts are filled up by oceans and seas.

What are hills and mountains?

How are the very low parts of the earth filled up?

volcanoes—these burning mountains throw out fire, ashes, and smoke.

What are volcanoes?

What substances do they throw out?

valleys—being sheltered by hills and generally watered by rivers and streams they are warm and fertile.

What tracts of land are called valleys?

Why are they often very fertile?

What are bodies of land with water all around them called?

islands—as Great Britain, the Isle of Wight, Jersey.

What islands do you know of?

caverns—some are the resort of wild beasts.

What places are called caverns?

Of what animals are they sometimes the resort?

Lesson 93. *Collections of Water.*

The large bodies of water which separate the different parts of the globe are called ·*oceans* and ·*seas*. Running waters are ·*rivers* or ·*streams*. Large collections of water which are surrounded by land are ·*lakes*. Water gushing out of the earth is a ·*spring*. ·*Wells* are supplied by springs. Tracts of wet land are *marshes*.

Lesson 94. *Changes in Water.*

Frozen water is ·*ice*, and mountains of ice are called ·*icebergs*. The heat of the sun turns water into ·*vapour*; the vapour forms ·*clouds*, and clouds produce *rain*. Water made very hot turns into ·*steam*. Water for drinking should have neither colour, smell, nor taste. Sea-water is not fit for drinking because it is salt.

Lesson 93.

oceans—there are five principal ones; the Atlantic, the Pacific, the Indian, the Arctic, and the Antarctic.

seas—not so large as oceans; as the Baltic, the Mediterranean, &c.

rivers—as the Thames, the Clyde, the Shannon.

streams—smaller than rivers, some are called brooks.

lakes—the sea of Galilee and the Dead Sea are lakes.

springs—places where the streams under the earth find vent.

wells—for the supply of water, either open or with pumps attached.

What are oceans and seas?

Tell me the names of the five principal oceans.

What do they separate?

Are seas as large as oceans?

What are running waters called?

Can you mention the names of any rivers?

What are running waters that are smaller than rivers called?

What are lakes?

What is a spring?

What are often dug at springs?

What are watery tracts of land called?

Lesson 94.

ice—*water rendered solid by cold; it is cold, clear, transparent, reflective, soluble, natural, colourless, tasteless, heavy, solid, inodorous—

icebergs—in the polar seas they float about and sometimes damage ships.

vapour—water slightly expanded by heat; visible vapour is called mist or steam.

clouds—the storehouses of the rain.

steam—water greatly expanded by heat; visible in white streams of hot vapour, in the cold air; but then quickly changed again to water.

How is water rendered solid?

What is it then called?

What qualities has ice?

What are icebergs?

In what parts of the ocean are they found?

How are ships sometimes damaged by them?

What effect has the heat of the sun upon water?

What is visible vapour called?

What does the vapour form?

What do clouds produce?

How is water turned into steam?

What are the qualities of good water for drinking?

Why is sea-water unfit for drinking?

Lesson 95. *Substance of the Earth.*

There are different kinds of ·earth, as ·sand, gravel, lime, clay, chalk, &c. Sand is obtained from the sea-shore or from sand-pits; gravel, from gravel-pits. ·Salt is usually dug from mines. The ores of ·iron, of ·lead, of ·silver, of ·copper, of ·tin, and of ·gold, as well as ·coal and ·sulphur, form part of the earth, and are dug out of it.

Lesson 96. *Earths and Salts.*

·Flint is used for making glass; red clay, for bricks and tiles; ·potter's clay, for jugs, mugs, and plates; ·marble, for chimney-pieces; ·rotten-stone, for polishing metals. Some kinds of ·chalk are used for drawing; ·vitriol and ·alum are employed in dyeing. Salt-petre and charcoal are used in making gunpowder.

Lesson 95.

earth—meaning earthly minerals.
sand—is small grains of, or granulated silex or flint.
salt—* a mineral substance; it is white, sparkling, granulous, hard, soluble, opaque, sapid, inodorous—
iron—the most useful metal. It is found in nearly all countries.
lead—the softest and most easily fused of all the metals.
silver—a perfect metal, next in value to gold.
copper—the most sonorous or sounding metal.
tin—the softest metal next to lead.
gold—the most precious metal.
coal, sulphur—combustible minerals.

What different kinds of earth are mentioned in the lesson?
What is meant by earth?
What is sand?
Whence is it obtained?
Where do we get gravel from?
Whence is salt usually procured?
What are its qualities?
What other minerals are dug out of the earth?
What can you tell me about iron?
What peculiarities has lead?——silver?——copper?——tin?——gold?

Lesson 96.

flint—also called *silex*, one of the hardest substances in nature; it is found in granite, and in many other rocks.
potter's clay—plastic, used for common earthen-ware.
marble—a kind of limestone which takes a fine polish.
rotten-stone—a soft kind of stone, which crumbles and powders easily—hence its name.
chalk—Italian chalk is natural; French chalks, both black and white, are artificial.
vitriol—now generally called sulphuric acid.
alum—made from a kind of clay slate called alum shale.

For what is flint used?
What is flint also called?
Where is it found?
Of what are bricks and tiles made?
What is potter's clay used for?
What is marble?
For what is it used?
What do you know about rotten-stone?
For what purpose are some kinds of chalk used?
In what art are alum and vitriol employed?
What other name has vitriol?
From what is alum made?
What substances are used in making gunpowder?

Lesson 97. *Metals.*

The metals in common use are gold, silver, copper, iron, lead, tin, zinc, and mercury. Gold and silver are called ·*precious* metals; they do not ·rust. Copper, iron, lead, tin, and zinc, are common and useful. Iron is hard, lead is soft, ·mercury is liquid. Gold, silver, and copper are made into ·money. Brass is a ·mixt metal.

Lesson 98. *Combustible Minerals.*

Minerals are dug from ·mines. ·Sulphur is a yellow mineral, and burns with a choking fume. Coal is a black mineral, and is used for firing. There are several kinds of coal, as ·pit-coal, ·anthracite or stone coal, ·cannel coal, and ·jet. Bitumen is a kind of pitch. ·Naphtha and ·asphalt are bituminous minerals.

Lesson 97.

precious—both valuable and beautiful.

rust—iron rusts by being exposed to air and moisture; the rust of iron is *oxide* of iron; there are oxides of nearly all metals except gold and silver.

mercury—also called quicksilver, the only fluid metal; it becomes solid in the cold regions of the earth.

money—in nearly all civilized countries these metals are used for coins.

brass—composed of about two-thirds copper and one-third zinc.

What metals are in common use?

Which of them are called precious?

Why are they so called?

Which metal is the most useful?

What is the rust of iron called?

Name two metals that do not rust.

Which is the softer, lead or iron?

Which of the metals is liquid?

What is quicksilver sometimes called?

What metals are used for money?

Mention a mixed metal.

Of what is brass composed?

Lesson 98.

mines—places where minerals are dug, generally deep in the earth.

sulphur—also called *brimstone*; obtained chiefly from the neighbourhood of volcanoes.

pit-coal—common coal from pits.

anthracite—also called *stone coal*; it burns without smoke.

cannel coal—also called *candle coal* from its bright flame.

jet—takes a high polish.

naphtha—a mineral oil.

asphalt—a mineral pitch, which is hard and solid, flames readily, and leaves no ashes.

Whence are minerals obtained?

What are mines?

What is sulphur?

What is its other name?

Whence is it chiefly obtained?

What does it emit when burning?

What mineral do we use for firing?

Name some of the different kinds of coal.

What is anthracite?

Why is one kind of coal called candle coal?

What is bitumen?

What is naphtha?

What is asphalt?

Lesson 99. *Uses of Metals.*

·Iron is made into heavy tools and sharp instruments. ·Tin is spread over thin iron plates, which are used to make tin boxes, candlesticks, &c. ·Gold and ·silver are made into costly ornaments. ·Lead is made into pipes and cisterns, and is used for gutters on roofs of houses. ·Copper and zinc are mixed together to make brass.

Lesson 100. *Precious Stones.*

·Precious stones are used for ornament. The ·diamond is transparent and ·colourless; the ruby is red; the sapphire is blue; the amethyst is violet; the emerald is green; the topaz is yellow; the ·garnet is dark red. There are other precious stones; such as the onyx, the opal, &c. Of all these the diamond is the most valuable.

Lesson 99.

iron—* the most elastic, tenacious, and useful of all metals; it is also heavy, malleable, sonorous, liable to rust, hard, fusible, solid, susceptible of a high polish, and reflective—

tin—* is the softest of metals next to lead, and it is the lightest; it is heavy, malleable, ductile, fusible, white, opaque, reflective, and not very elastic—

gold—* a perfect metal; yellow, malleable, ductile, heavy, indestructible—

silver—* also a perfect metal; white, opaque, solid, reflective, mineral—

lead—* heavy, fusible, very soft, bluish gray, solid—

copper—* reddish brown, opaque, sonorous—

Into what articles is iron made?

Name some iron tools and instruments.

Tell me some of the qualities of iron.

How is tin used?

What qualities has tin?

Of what metals are costly ornaments made?

Name some of the qualities of gold.——of silver.

For what is lead used?

Mention some of the qualities of lead.

How is brass made?

What qualities has copper?

Lesson 100.

precious stones—esteemed precious for their beauty and rarity rather than for their utility.

diamond—used by the glazier to cut glass; it is the hardest substance in nature.

colourless—the diamond is admired and valued for its clearness and freedom from colour; other stones, for their brilliant tints.

garnet—this stone is one of the most beautiful; it has the excellent qualities of many rarer gems, but as it is the most abundant of all, it is the least esteemed.

For what are precious stones used?
Why are they esteemed?
What is the hardest substance in nature?
How is it useful to the glazier?
Why is it so much admired?
What precious stone is blue?
Which is red?
Of what colour is the amethyst?
What is the colour of the emerald?
What gem is yellow?
Which is dark red?
Why is it the least esteemed?
What other gems can you name?
Of all the gems which is the most valuable?

SECTION XIII. OF SUBSTANCES.

Lesson 101. *Kingdoms of Nature.*

We obtain nearly all things about us from ·*animals*, *vegetables*, or *minerals*. This pen was part of a bird's wing, and is therefore an ·animal substance. This paper is made of linen or of cotton, and is therefore a ·vegetable substance. This knife-handle is ·ivory, from the elephant's tusk; its steel blade is ·mineral.

102. *Animal Substances. (Imports.)*

Those things which are sent to us from foreign countries are called *imports*. Many of our imports are animal productions, such as ·fur, ·wool, ·hides, ·feathers, quills, and ·silk; ivory, whalebone, ·tortoiseshell, and ·horns; ·tallow, ·wax, ·spermaceti, and ·honey; leather, bristles, leeches, and many other articles.

Lesson 101.

animals — vegetables — minerals — called the three kingdoms of nature.

animal substance—obtained from an animal, as bone; or made from any part of an animal, as a pen from a quill; or produced by an animal, as honey.

vegetable substance—obtained from a vegetable, as linen from flax; any part of a vegetable, as wood; produced by a vegetable, as cotton wool, India-rubber.

mineral—any portion of the earth's crust; as stone, sand, clay, coal, iron, &c.

From what natural objects do we obtain nearly all the things we use?

What are animals, vegetables, and minerals called?

What substances are called animal substances?

Of what is paper made?

What kind of a substance is it therefore called?

Why is linen said to be a vegetable substance?——wood?——India rubber?

To which kingdom of nature does ivory belong?

What parts of a pocket-knife are mineral?

What is meant by mineral?

Lesson 102.

furs—chiefly from the cold countries.

wool—from extensive grazing countries.

hides, horns, tallow—from countries where cattle are reared or where they abound in a wild state.

eathers—from the cold countries visited by flocks of wild ducks and geese.

silk—from countries in which the silkworm breeds.

tortoiseshell—from the warm countries in which the tortoise breeds.

honey, wax—from the flowery mountains of the South.

spermaceti—from the sperm whale fisheries.

What are imports?

Name some of our imports which are animal substances.

From what countries are furs chiefly obtained?

What countries send us feathers?

Whence do we get wool?

What countries produce hides, horns, and tallow?

What countries send us silk?

Whence do we import ivory?

Where does the tortoise breed?

Whence do we obtain honey and wax?

Whence do we get spermaceti?

103. *Vegetable Substances. (Imports.)*

Our vegetable imports consist of ·timber, ·plants, ·barks, and ·roots. ·Oak, deal, ·teak, and ·mahogany are imported in large quantities for building purposes, and for furniture makers. ·Rosewood, satin-wood, and ebony are imported for fine cabinet work. ·Logwood is imported for dyeing; and many vegetables for ·medicine.

Lesson 104. *Resins & Gums. (Imports.)*

Many trees yield ·*resins* and *gums*. Firs produce resin; a species of laurel yields ·camphor; a species of acacia produces ·gum-arabic. ·Copal and ·mastic are resins used for making varnish. ·Myrrh and ·aloes are used in medicines. ·India-rubber, and ·gutta-percha repel the wet, and are used for various other purposes.·

Lesson 103.

timber—for building with, from the forests of Europe and America.

plants—for our gardens and fields.

bark—for tanning, dyeing, and medicines.

roots—chiefly for dyes, or medicines.

oak, *teak*—for ships, building, and furniture.

mahogany—chiefly for furniture.

rosewood, *&c.*—chiefly for veneering other furniture, so as to exhibit the beautiful coloured veins of these woods.

logwood—for dyeing, and for making ink.

medicine—many of our best medicines are obtained from plants.

Of what substances do our vegetable imports consist?

Whence do we import timber?

Why do we import plants?

For what are different kinds of bark used?

For what purposes are roots imported?——oak and teak?

What wood is largely imported for furniture-makers?

For what purpose are rosewood, satin-wood, and ebony imported?

Of what use is logwood?

From what natural sources do we obtain many of our best medicines?

Lesson 104.

resin—called *rosin* in the solid state; the turpentine from which it is formed flows from many of the pines and firs.

camphor—* obtained from a kind of laurel; it is white, semi-transparent, hard, solid, very inflammable, light, medicinal, aromatic, volatile—

gum-arabic—from a kind of acacia, produced in the hottest countries.

copal, *mastic*, *myrrh*, *aloes*—all these are gum-resins.

Indian-rubber, *gutta-percha*—milky juices of trees, obtained by making incisions in the bark.

Whence do we obtain resins and gums?

What kind of trees produce resin?

What is resin called in the solid state?

From what tree is camphor obtained?

Tell me some of its qualities.

What tree yields gum-arabic?

How is the gum obtained from the tree?

What are copal and mastic?

For what are they used?

What are gutta-percha and Indian-rubber?

How are they useful?

Lesson 105. *Roots & Oils. (Imports.)*

Roots and other products of plants are imported on account of their utility. ·Ginger is used as a spice; ·ipecacuanha, ·gentian, and ·rhubarb, as medicines; ·orris-root, as a perfume. Many plants yield ·oil. Olive-oil is obtained from ·olives; castor-oil from a kind of bean; linseed-oil from the seeds of the flax-plant.

Lesson 106. *Mineral Productions.*

Many of the minerals produce substances ·unlike themselves. Some of the metals, as iron, copper, lead, zinc, &c., are produced from ·ores that look more or less like ·stones. The common tools of the poor man are produced from iron ore; and money, which all people require, is ·coined from gold, silver, and copper.

Lesson 105.

ginger—* dry, pungent, dull, hard, fibrous, aromatic or spicy, tough, wholesome, foreign, opaque, medicinal, vegetable, grows in hot climates—

ipecacuanha—used as an emetic.

gentian—very bitter ; used as a tonic.

rhubarb—used as a purgative.

orris-root—has the odour of violets; it is often used in making tooth-powders.

oil—* (vegetable oils) fluid, yellowish, soft, semi-transparent, liquid, greasy, useful, light, thick, oleaginous—

olives—olive trees grow in the South of Europe.

Why are roots and other products of plants imported?

How is ginger used?

Mention some of its qualities.

What roots are imported for their medicinal properties?

How is ipecacuanha used?

What kind of a medicine is gentian?——rhubarb?

For what is orris-root used?

What kind of a scent has orris-root?

From what is olive-oil expressed?

Name some of its properties.

Where does the olive tree grow?

From what is castor-oil obtained? ——linseed-oil?

Lesson 106.

unlike—clay when moulded is soft and plastic, when burned in a kiln it is harder than many kinds of stone.

ores—the metals are mixed with earthy substances which are separated by smelting and refining.

stones—very few people would be aware that the more common iron ores contained any portion of metal.

coined—the metal is first refined, then rolled into sheets of a proper thickness, then stamped in presses, in which dies are fixed.

When is clay soft?

When is it hard?

In what respects is clay different to kiln-burnt bricks?

Name some metals.

From what are metals produced?

What do ores more or less resemble?

How are metals purified?

Name some common tools used by the poor man.

From what mineral are they made?

Can you describe the process of coining money?

Lesson 107. *Waste Materials.*

The things we often ·waste might be turned to account. Shavings of wood, paper-cuttings, and sawdust are used in ·packing up goods; old woollen garments, torn into shreds, can be woven again into ·coarse cloth; cotton and linen ·rags are reduced to pulp, and made into paper; and broken ·glass is re-melted at the glass-house.

Lesson 108. *Materials of Little Value.*

Materials of little value may be made useful. Common clay is made into ·buttons which look like ·valuable stones. The ·woollen waste of the factories is made into beds. ·Tailors' cuttings are used for fastening trees against walls. ·Dried leaves are often swept up in autumn and made into beds by the poor.

Lesson 107.

waste—"waste not, want not" is a proverb which should be remembered.

packing—to keep the goods packed dry, or free from injury by shaking against each other.

coarse cloth—such as druggets, common trousering, &c.; a small quantity of new wool is mixed with the old shreds.

rags—they must be sorted, the cotton from the linen rags, and the white from the coloured.

glass—although so brittle, it can be rendered fluid by the intense heat of the glass-furnace.

What valuable proverb about waste should always be remembered?

Name some materials which are sometimes wasted that may be turned to account.

What waste materials may be used for packing goods?

Explain how they are useful for this purpose.

How may old woollen garments be turned to account?

What coarse cloths are thus made?

Of what materials is paper made?

How is broken glass turned to account?

How is glass rendered fluid?

Lesson 108.

buttons—so cheap and beautiful were these buttons, that at one time, 5,000 gross were made weekly at one place.

valuable stones—nearly all precious stones can be imitated in glass or porcelain.

woollen waste—cheaper than feathers, and excellent for beds.

tailors' cuttings—not only the list which forms the strip or border of rolls of cloth, but also the useless bits that are cut out in shaping garments.

dried leaves—they may be gathered for bedding for pigs, or heaped up to rot so as to form manure for land.

Name some materials of little value that may be made useful.

From what substance can buttons be made to look like valuable stones?

What proof can you give that they were in great demand?

How many articles are there in one gross?

How can nearly all the precious stones be imitated?

How is the woollen waste of factories turned to account?

For what are tailors' clippings used?

How may dried leaves be made useful?

Lesson 109. *Nothing is Useless.*

·Nothing is useless, and therefore nothing should be wasted. Large bones are useful for making the handles of knives and forks, and small ones are ground for manure. Dried branches of trees make good fuel, and acorns are food for pigs. The small bits of the hides, horns, and hoofs of animals are made into glue.

SECTION XIV. THE AIR AND THE HEAVENS.

Lesson 110. *The Earth and Universe.*

·The earth is not flat as it ·appears to us, but an immense ·globe composed of land and water. The ·sun does not move over the earth from east to west, as it seems to us; but the earth revolves round it once every year. Many of the distant ·stars are suns round which worlds like our own are always revolving.

Lesson 109.

"NOTHING USELESS."

The smallest coal-ashes are used again in the manufacture of bricks.

Wood-ashes contain flint; used as manure they again enter plants, and give strength to their stems.

Soot is a valuable manure.

Sewage water is full of fertilizing ingredients.

The smallest waste of coal-pits formerly thrown away, is now made into excellent fuel.

The skins of rats are made into a very soft and delicate leather used for gloves.

The slag of iron furnaces is used to mend roads.

Why should nothing be wasted
For what purpose are large bones useful?
What is done with small ones?
In what manufacture are the smallest coal-ashes used?
Why are wood-ashes good for land?
How is soot useful?
Of what use are the dried branches of trees?
Why is sewage water valuable to the farmer?
What animals eat acorns?
Of what is glue made?
How is the waste of coal-pits turned to account?
What is made of rat-skins?

Lesson 110.

the earth—the world in which we live.

appears—our senses deceive us in many things; the stars shine by day though we cannot see them; and the sun appears to rise and set.

globe—it is so large—24,000 miles round it that every part seems flat, except the mountain districts, to those who can only see a few miles.

sun—it is stationary in the heavens, and 95,000,000 miles distant from the earth; many other orbs revolve round it besides the earth.

stars—they are called fixed stars.

What is the apparent shape of the earth?
What is its real shape?
How can the earth be a globe when it appears flat?
Of what is our earth composed?
How many miles is it round the earth?
In what way are we daily deceived by the appearance of the sun?
How far is the sun from the earth?
In what time does the earth revolve round the sun?
What are many of the stars supposed to be?
What are they called?
What are perpetually revolving round them?

Lesson 111. *The Poles.*

If I hold an ·orange between my thumb and forefinger to represent the earth, my finger, being uppermost, indicates the ·*north pole*, and my thumb the ·*south pole*. The orange shows the ·shape of the earth pretty nearly. It is a globe, slightly flattened at the poles. The poles are the extremities of the ·*axis*.

Lesson 112. *Motions of the Earth.*

The earth moves round its own *axis* once every ·day; it moves round the sun once in a ·year. As it moves on its axis the ·half next the sun is light, and the half from it dark. The light is day; the darkness night. The ·changes in the position of the earth *towards* the sun, or *from* it, cause the changes of the seasons.

Lesson 111.

orange—but the earth is more globular than an orange.

north pole—on a common globe there is an iron pivot at this part, but there is no such pivot in the earth itself.

south pole—another pivot shows the south pole on a common globe.

shape—that is, the earth is a little less curved at the two poles than at any other part of its surface.

axis—this is quite imaginary, for there is no real axis ; but a name is given to describe its motion, as if there were an axis.

What fruit is here mentioned as representing the earth ?
Which is more globular, the earth or an orange?
How may the poles be illustrated with an orange ?
Where are the poles on a common globe ?
Are there such iron pivots in the earth itself ?
What is the real form of the earth?
At what parts is the surface of the earth least curved ?
What are the extremities of the axis called ?
Has the earth any real axis ?
Then why do we say that the earth revolves round its axis?

Lesson 112.

day—in twenty-four hours ; it is thus the measure of time.

year—thus a revolution of the earth round the sun measures a year.

half—only half a globe can be illuminated at once by one light, the other half will be in shade ; thus when it is day with us, it is night at the opposite part of the earth.

changes—during our summer the north pole inclines towards the sun ; it is then winter in the opposite half of the earth ; when the south pole inclines towards the sun, it is winter in the half of the globe we inhabit.

How long is the earth in turning round on its axis once?
How many hours has a natural day ?
What journey does the earth perform in a year ?
As the earth turns round which part of it is light ?
In what state is the other half ?
What is the cause of this ?
When it is day with us where is it night ?
What is the light called ?
What is the darkness called ?
How are the season caused ?
What is the position of the earth during our summer ?

Lesson 113. *Equinoxes and Solstices.*

·One day in spring is exactly twelve hours long all over the earth, and one night also. The same thing happens in ·autumn. These times are the ·*equinoxes*. One day in summer is the ·longest day of the year, and one day in winter is the ·shortest. These days are in the middle of the *summer* and of the *winter* ·*solstices*.

Lesson 114. *The Moon.*

The ·moon ·moves with the earth round the sun; it also moves round the earth. The moon is one of the most beautiful ·orbs in the firmament. It gives us ·light during many nights of the year. Its ·changes are frequent. The moon revolves round the earth in about twenty-nine days, and divides the year into months.

Lesson 113.

one day—about the 21st. March; the sun rises exactly in the East at 6 o'clock in the morning, and sets in the West at 6 o'clock in the evening.

autumn—about the 22nd. September.

equinox—the Spring equinox is on 21st. March, and the Autumn equinox is on 22nd. September; the days and nights are then twelve hours long everywhere.

longest—the 21st. June.

shortest—the 21st. December.

solstices—the summer and winter solstices are on the above dates.

At what periods of the year does it happen that one day is exactly twelve hours long all over the earth?

About 21st. March where does the sun rise?

At what time of the day?

Where does it set, and at what time?

On what day does the same thing happen again?

What are 21st. March and 22nd. September called?

Which is the longest day of the year?

Which is the shortest?

What are these periods of the year called?

Lesson 114.

moon—237,000 miles distant from the earth.

moves—as the earth moves round the sun the moon accompanies it.

orb—all the heavenly bodies are orbs.

light—if it were a luminous body, it would always appear round, like the sun; but it only reflects the light of the sun on the earth.

changes—gradually filling up from new to full; and appearing at its four principal changes horned, half-moon, gibbous, and full.

What orb accompanies the earth round the sun?

How far is the moon from the earth?

What bodies are called orbs?

Prove that the moon is not a luminous body like the sun.

In what time does the moon revolve once round the earth?

Into what portions of time does the moon thus divide the year?

In what forms does the moon appear at its four principal changes?

Explain each of these forms by a drawing.

Lesson 115. *The Atmosphere.*

The whole earth is surrounded with ·*air*. We feel it and breathe it. Men, animals, and plants ·could not live without air. When the air moves quickly it is called ·*wind*. A wind that blows round and round is called a ·*whirlwind*. The ·*mists* that ascend from the earth form clouds, and descend again to the earth as rain.

Lesson 116. *Meteors.*

Bright lights which float in the air and soon vanish are called ·*meteors*. When the sun shines on falling rain there is a meteor called the ·*rainbow*. A rainbow caused by the moon is a ·*lunar* rainbow. ·*Halos* are rings of vapour round the sun or moon. ·*Lightning* is electricity discharged from the clouds. *Clouds* are meteors.

Lesson 115.

air—supposed to extend to the height of between 40 and 50 miles around the surface of the earth.

could not live—the lungs would cease to act in men and other animals.

wind—it varies in speed and violence from a gentle breeze to a destructive hurricane.

whirlwind—most frequent and violent in hot countries.

mists—if the air is as warm as the ascending vapour the vapour is invisible; but if the air is colder the drops forming the mists are visible.

With what substance is the whole earth surrounded?

How high around the earth is it supposed to extend?

Can we see air?

How do we know that it exists?

What would happen to plants and animals if there was no air?

What is air moving quickly called?

What is a whirlwind?

Where are whirlwinds most frequent and violent?

How are clouds formed?

Explain how mists are formed.

Lesson 116.

meteors—as the aurora borealis, shooting stars, &c.

rainbow—its colours are red, orange, yellow, green, blue, indigo, and violet.

lunar rainbow—an arch of light much fainter in its colours than the solar rainbow.

halos—sometimes consisting of one ring, at other times of more than one, each having the sun or moon for its centre.

lightning—most common after very hot and sultry weather; it is generally discharged with a loud report in the clouds—thunder.

What are meteors?

What meteors can you mention?

What meteor appears in the cloud opposite the sun when it is shining on falling drops of rain?

Tell me the colours of the rainbow.

What is a lunar rainbow?

How does it differ from a solar rainbow?

What are halos?

In what part of these circles does the sun or moon always appear?

What is lightning?

When is it most common?

What is thunder?

What meteors produce rain?

SECTION XV. OF TIME.

Lesson 117. *Divisions of the Day.*

The ·day consists of ·twenty-four hours, counted from midnight to noon, and from noon to midnight again. The parts of the day are ·morning, ·forenoon, ·noon, ·afternoon, ·evening, ·night, and ·midnight. When the sun rises it is day, when it sets it is night. Before sunrise and after sunset we have ·twilight.

Lesson 118. *Divisions of Time.*

·Seven days make one week. Four weeks make one ·month. Twelve months make one ·year. The ·days of the week are Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday. The hours of the day are shown by ·clocks. The returns of light and darkness mark the day and night.

Lesson 117.

day—from sunrise to sunset is commonly called day.

24 *hours*—a natural day, being a complete revolution of the earth on its axis.

morning—the earlier part of the day.

forenoon—the three hours preceding noon.

noon—twelve o'clock or mid-day.

afternoon—after twelve o'clock.

evening—the decline of the day.

night—the three hours preceding midnight, sometimes all the hours between sunset and sunrise.

midnight—twelve o'clock at night

twilight—the light immediately preceding sunrise and immediately after sunset.

Of how many hours does the day consist?

What is a day of this kind called?

How are the hours counted?

What does the earth perform during one natural day?

Name the parts of the day.

Which part is called morning?

When is it forenoon?——noon?——afternoon?

What is the decline of the day called?

When is it night?

Tell me the time of midnight.

When is the day generally said to commence?——end?

What is twilight?

Lesson 118.

seven—the six days of Creation and the Sabbath or day of rest.

month—originally meant to express moons—but there are 13 moons or lunar months in a year.

year—one revolution of the earth round the sun.

days of the week—their names have been derived from the idols of our Saxon forefathers.

locks—supposed to have been invented in the thirteenth century.

How many days make one week?

Of what does the division of the week into six working days and a day of rest remind us?

Which is the day of rest?

Name the six working days.

How many weeks make one month?

What do twelve months make?

What was originally meant by month?

How many moons or lunar months are there in a year?

By what instruments are the hours of the day marked?

When were clocks invented?

How are days marked?

Lesson 119. *Months and Seasons.*

A year consists of twelve months; ·January, ·February, ·March, ·April, ·May, ·June, ·July, ·August, ·September, ·October, ·November, and ·December.

Thirty days hath September,
April, June, and November,
February hath twenty-eight alone,
And all the rest have thirty-one,
Except in ·leap-year, then's the time,
That February's days are twenty-nine.

There are four ·seasons in the year.

Lesson 120. *Years and Centuries.*

365 days make a ·year; 100 years make a ·century. We count our lives by years, we count the ·age of the world by centuries. The world has existed nearly ·sixty centuries. ·Forty centuries passed from Adam to Christ, and eighteen centuries and sixty-six years from the birth of Christ ·until now.

Lesson 119.

January—the coldest month.
February—the dampest month.
March—the windiest month.
April—the most variable month.
May—the most pleasant month.
June—the most flowery month.
July—the hottest month.
August—the richest month.
September—the healthiest month.
October—the dryest month.
November—the foggiest month.
December—the gloomiest month.
leap-year—every fourth year.
Seasons—Spring, Summer, Autumn, and Winter.

Of how many months does a year consist?
Name the months.
Which is the most variable month?
Which is the foggiest?
Which is the coldest?
Name the sixth month.
How many days has it?
Which month has 28 days?
When has February 29 days?
How often is it leap-year?
Name the ninth month.
Which is the richest month?
Which is the hottest month?
How many seasons are there?
Name them.

Lesson 120.

year—366 days in leap year.

century—we have passed the middle of the nineteenth century from the birth of Christ. Recent events being dated from that time.

age of the world—the time it has existed.

sixty centuries—60 multiplied by 100—6000 years.

forty centuries—the most important events of these 4000 years are recorded in the Old Testament.

birth of Christ—or the Christian era; written A.D. (Anno Domini) the year of our Lord.

What do 365 days make?
How many days are there in leap year?
How many years make a century?
In what century of the Christian era are we living?
How do we measure our lives?
What do we count by centuries?
How old is the world?
How many years are sixty centuries equal to!
How many centuries passed between the time of Adam and that of Christ?
What length of time has passed since the birth of Christ?
What does A.D. mean?

SECTION XVI. OF CLIMATES, ETC.

Lesson 121. *The Cardinal Points.*

If we look towards the sun at noon our face is turned to the ·*south*, our back towards the ·*north*, our right hand is towards the ·*west*, and our left hand towards the ·*east*. In a map the bottom is south, the top north, the left hand west, the right hand east. These are the ·Cardinal Points.

Lesson 122. *The Equator & the Zones.*

The line that runs through the map of the world from left to right is called the ·*Equator*. The Equator lies in the ·*torrid* zone. The points at the top and bottom of the map are the ·*poles*. The poles are in the ·*frigid* zones. About half way between the Equator and the poles is the middle of the ·*temperate* zones.

Lesson 121.

south—as the sun *appears* to move from east to west, it is midway between these points, or south, at noon.

north—exactly opposite the south; at night the north pole star shows this point.

west—the point where the sun sets at the equinoxes, midway between the south and the north.

east—the point exactly opposite the west, and where the sun rises at the equinoxes.

cardinal points—thirty-two points are marked on the mariner's compass.

If we look at the sun when it is noon, towards what point is our face turned?

What point is behind us?

Where is the west?

What point is on our left?

Now, tell me one way of discovering the cardinal points.

Which points are exactly opposite to each other?

How is the north shown at night?

How are the east and wests points indicated at the equinoxes?

Name the cardinal points and at the same time point to the corresponding parts of the map.

How many points are marked on the mariner's compass?

Lesson 122.

equator—or equaller; it divides the globe into equal parts; viz. the northern and southern hemispheres.

torrid—the hot or burning zone; the sun is always vertical in some part of it.

poles—the north and south poles, the points of the imaginary axis.

frigid—the cold or frozen parts of the earth; they are opposite each other.

temperate—neither so hot as the torrid zone, nor so cold as the frigid zones. We live in one of the temperate zones.

Which line on a map of the world is called the equator?

What division is made by the equator?

In what zone does it lie?

What is meant by the torrid zone?

What are the points at the top and bottom of the map called?

What are the poles?

What zones lie round the poles?

What is meant by frigid?

Where are the temperate zones?

How do the temperate zones differ from the torrid and the frigid zones?

In which of the zones do we live?

Lesson 123. *The Torrid Zone.*

If a broad belt were wrapped round the middle of a globe, east and west, so as to cover one-third of the surface, it would represent the *torrid zone.* In it live the largest, the most beautiful, and the most dangerous animals. Beasts and birds of prey, venomous reptiles, and noxious insects are found there, besides others more useful.

Lesson 124. *The Frigid Zones.*

The two *frigid zones* extend from the poles to the two temperate zones; about one quarter of the distance from each pole to the equator. The white bear, the reindeer, the dog, the whale, the walrus, and the seal, are found there. For months the sun never rises in the frigid zones, during other months it never sets.

Lesson 123.

torrid zone—round the middle of the earth's surface; its breadth being about 3,000 miles.

largest—the elephant, the hippopotamus, the ostrich, the boa-constrictor, the shark, &c.

beautiful—birds of paradise, humming birds, pheasants, &c.

dangerous—lions, tigers, crocodiles, leopards, &c.

venomous—lizards, snakes, &c.

noxious—musquitoes, scorpions, chigoes, &c.

useful—the cochineal and lac insects.

How might the torrid zone be represented on a globe?

What is the breadth of this zone?

By what animals is it inhabited?

Name some of the largest that are found there.

Which are the most beautiful?

Now, name some of the most dangerous.

Where are the most venomous reptiles found?

What beasts and birds are also to be found there?

What noxious insects inhabit the torrid zone?

What useful insects?

Lesson 124.

frigid zones—two, called the *North* and the *South* frigid zones.

extend—from the north pole to the arctic circle, and from the south pole to the antarctic circle.

white bear—the skin is very useful; some of them are twelve feet long.

whale—valuable for its oil and whalebone.

walrus—sought after for its oil and tusks.

seal—its flesh, its skin, and its oil, are all useful.

sun—the moon and the aurora borealis afford considerable light in the absence of the sun.

How many frigid zones are there?

How are they distinguished from each other?

Where are they situated?

Name some animals that are found in the frigid zones.

How much of the earth's surface do they occupy?

What part of the white bear is very useful?

For what is the whale valuable?

Why is the walrus sought after?

What parts of the seal are useful?

What is there remarkable about the days and nights in the frigid zones?

How have these zones light in the absence of the sun.

Lesson 125. *The Temperate Zones.*

The ·*temperate zones* lie ·between the torrid and the frigid zones. The temperate zones are the most ·healthy parts of the earth. In them the most ·useful animals abound. Beasts, such as horses, oxen, sheep, antelopes, deer, and goats; and birds, such as nightingales, pigeons, and fowls may be found here; also useful fishes.

Lesson 126. *Inhabitants of the Zones.*

The ·natives of the torrid zone are mostly of black, or dark ·complexions; they are ·indolent in their habits. In both the ·temperate zones the natives have white or light skins; they are industrious and intelligent. The people of the ·frigid zones are dwarfish, and have little knowledge; they live by hunting and fishing.

Lesson 125.

temperate zones—two, called the *North* temperate zone, and the *South* temperate zone.

between—the north temperate zone is between the torrid zone and the north frigid zone; and the south temperate zone is between the torrid zone and the south frigid zone.

healthy—the climate being *temperate*, not so hot as the torrid, nor so cold as the frigid zones.

useful animals—those reared by the farmer for labour and food; and very few of the more dangerous animals.

How many temperate zones are there?

How are they distinguished from each other?

Where are they situated?

What is their character?

Where is the north temperate zone?——the south?

What animals abound in the temperate zones?

Name some of them.

Why are the temperate zones the most healthy parts of the earth?

What kind of animals are not so abundant in the temperate zones as in the torrid zone?

Lesson 126.

natives—those born in a country.

complexion—colour of the skin.

indolent—the earth yields so abundantly that they have little occasion for labour to sustain life.

temperate zones—the earth must be cultivated diligently in these zones, hence laborious works are necessary; men must also be better sheltered from the changes of the seasons than in the hot zones, hence arts are invented.

frigid zones—intense cold prevents field labours, and only the milder parts of these zones can be cultivated.

What do you mean by the natives of a country?

Of what colour are the natives of the torrid zone?

What is their character?

What is meant by complexion?

Why is much labour unnecessary in the torrid zone?

What complexions have the natives of the temperate zones?

What is their character?

Why are they more industrious and intelligent than the natives of the torrid zone?

What peculiarities have the natives of the frigid zones?

How do they live?

Lesson 127. *Climates.*

Each zone is ·hotter at the parts nearest to the equator, and colder at the parts distant from it. The variations of heat constitute the ·*climates.* The heat at the equator causes ·luxuriant vegetation, and ·snow is never seen. At the poles there is ·constant ice and snow, but neither animal life nor vegetation.

Lesson 128. *Productions of Climates.*

The first, or hottest climate, produces such spices as ·ginger, ·nutmeg, and ·pepper; and cooling fruits, such as the cocoa-nut, and bread-fruit. The next climate produces fragrant spices, such as ·cinnamon, ·myrrh, and ·frank-incense; and also delicious fruits, such as the pine-apple, the date, and the tamarind.

Lesson 127.

hotter—the hottest part of the torrid zone is at the equator; of the north and south temperate zones the parts nearest the torrid zone are hottest; of the frigid zones, the warmest parts are those nearest the temperate zones.

climates—in each zone there are several climates.

luxuriant—so that little labour is necessary for the production of food.

snow—except on the summits of high mountains.

constant—the sun is so low it has not power to melt the ice.

Which are the hotter parts of each zone?

Where are the colder parts?

Which is the hottest part of the torrid zone?

Which parts of the temperate zones are the hottest?

Which are the warmest parts of the frigid zones?

What constitute the climates?

What effect has the heat at the equator on vegetation?

Where is snow never seen?

Where is there constant ice?

Why is this the case?

Why is there neither animal life nor vegetation in the polar regions?

Lesson 128.

ginger—the root of a plant.

nutmeg—* vegetable, the kernel of a fruit, hard, oval, brown, opaque, dry, roughish, natural, inanimate, foreign, pungent, odorous, aromatic—

pepper—* vegetable, a dried berry, foreign, hard, wrinkled, spherical, pungent, odorous, aromatic, wholesome, sapid—

cinnamon—* vegetable, the bark of a tree, natural, brown, brittle, pungent, odorous, aromatic, opaque, sweet, dry, foreign, light, medicinal—

myrrh, frankincense—gum resins used in medicines, and for incense.

In what part of the earth is the first climate?

What spices does it produce?

What is ginger?

What is nutmeg?

Mention some of its qualities.

Name some of the qualities of pepper.

What is cinnamon?

Tell me some of its qualities.

What cooling fruits does the first climate produce?

What fragrant spices grow in the second climate?

What delicious fruits?

What are myrrh and frankincense?

129. *Productions of Climates. (Cont.)*

The third climate produces the ·cotton-plant, the ·sugar-cane, the ·rice, the maize, the ·almond, the ·palm, and ·tobacco. The fourth produces the orange, the olive, the ·tea-shrub, and the melon. The fifth produces the fig, the ·mulberry, the cork-tree, and the onion. In this climate vines begin to be cultivated.

130. *Productions of Climates. (Cont.)*

The sixth climate abounds in ·grassy plains, and in it ·wheat and vines are cultivated. The seventh also produces vines and much corn. The eighth produces ·apples, ·barley, and hops, which are also found in the ninth. In the tenth the best oaks and elms are found, and many small fruits. The eleventh produces ·hemp and ·flax; and the twelfth—·oats, ·rye, ·firs, ·pines, &c.

Lesson 129.

cotton-plant—it produces a pod, or other seed vessel, full of cotton-wool and seeds.

sugar-cane—cultivated only in hot countries.

rice—it feeds more people than any other grain.

almond—there are two kinds, one sweet, the other bitter; the kernel yields oil.

palms—yielding several kinds of fruits, wine, oil, wax, cordage, &c.

tobacco—used for smoking, and ground into snuff.

tea-shrub—it is considered that two distinct species grow in China.

mulberry—on which the silkworm feeds.

What plants does the third climate produce?

Describe the produce of the cotton-plant.

Where does the sugar-cane grow?

Mention some of the productions of the palms.

What are the productions of the fourth climate?

How many species of the tea-shrub are considered to grow in China?

What are the productions of the fifth climate?

Why is the mulberry of great importance?

What trees begin to be cultivated in this climate?

Lesson 130.

grassy plains—affording subsistence for large herds of bisons, wild horses, and other flocks and herds.

wheat—corn, wine, oil, milk, and honey were among the productions of the land promised and given to the Israelites.

apples—cider and beer are produced in colder climates than wine.

barley—grows well where it is too cold for wheat.

hemp and flax—for cordage and linen.

oats, rye—grow in countries too cold for barley.

firs, pines—hardy mountain trees.

In what climate are grassy plains extensive?

To what animals do they afford subsistence?

What are the objects of cultivation in this climate?

What other climate yields us vines and corn?

What are the productions of the eighth and ninth climates?

Where are the best oaks and elms found?

What are the productions of the eleventh climate?

How is the place of wheat supplied in the colder climates?

What are the productions of the twelfth climate?

131. *Productions of Climates. (Cont.)*

In the very cold climates there are no trees, but only ·stunted shrubs, and ·mosses, and ·lichens. Near to the ·polar circles there is ·no vegetation at all, but continual ice and snow. The plants of warmer climates are often reared in the warm, ·sheltered parts of colder climates; the more tender plants are grown by ·artificial means.

132. *Productions of Climates. (Cont.)*

Many plants grow in ·various climates. Some, which are natives of hot countries, grow ·during summer in colder regions. Many plants from hotter and colder climates ·flourish in ·Britain. Every part of the earth furnishes plants for our ·fields and ·gardens, where they are reared by paying attention to their habits.

Lesson 131.

stunted—dwarfish for want of warmth.

mosses and lichens—some of them valuable for food both for animals and man, others medicinal, others used in dyeing.

polar circles—boundaries of the frigid zones.

no vegetation—the cold is too intense for even mosses and lichens to grow.

sheltered parts—valleys having an aspect towards the mid-day sun.

artificial means—in houses partially formed of glass and heated by stoves.

In what climates are there no trees?

What plants grow there?

Why are the shrubs stunted?

For what purposes are mosses and lichens useful?

Where is there no vegetation?

Why is there none?

In what parts of colder climates are the plants of warmer climates often reared?

Which are the sheltered parts?

How are the more tender plants grown?

What is meant by artificial means?

Lesson 132.

various climates—these are generally the most useful plants, as rice, wheat, maize, vines, apples, nuts, &c.

during summer—none grow so vigorously as in their own climate.

flourish—they are planted in exposed or sheltered parts according to their natural habits.

Britain—the ships of this country bring plants from all parts of the globe.

fields—potatoes, turnips, wheat, mangold wurzel, &c.

gardens—apricots, cherries, mulberries, &c.

Name some plants which grow in various climates.

During what part of the year do some plants that are natives of hot countries grow in colder regions?

How does the difference of climate affect their growth?

Whence have many of the plants been obtained that flourish in Britain?

How do we obtain plants from all parts of the earth?

What foreign plants grow in our fields?——in our gardens?

How are these plants reared?

SECTION XVII. SOCIAL LIFE.

Lesson 133. *Domestic Relations.*

Those children who have the same ·parents belong to one ·*family*, and those whose fathers or mothers belonged to one family are ·*relations*, or *relatives.* Our nearest relatives are fathers, mothers, brothers, and sisters. Our next relatives are ·grandfathers, ·grandmothers, ·uncles, ·aunts, and ·cousins.

Lesson 134. *Trade and Agriculture.*

·Manufacturers and tradesmen live in towns. They employ ·men and ·machinery in making silk, linen, cloth, calico, ·cutlery, ·hardware, &c. Farmers and their labourers live in ·villages. They ·cultivate the earth. Manufacturers, tradesmen, and farmers serve each other best by keeping each one to his own business.

Lesson 133.

parents—father and mother.

family—father, mother, and children.

relations—as the father or mother's brothers, sisters, uncles, aunts, and cousins.

grandfathers—the fathers of our parents.

grandmothers—the mothers of our parents.

uncles—the brothers of our fathers or mothers.

aunts—the sisters of our fathers or mothers.

cousins—the children of our father's or mother's brothers and sisters.

What children belong to one family?

What are those children called whose fathers or mothers belonged to one family?

Who are our parents?

Of what members is a family composed?

Name some relations.

Who are our nearest relatives?

Who are our next relatives?

Who are our grandfathers?

Who are our grandmothers?

What are uncles?

What are the sisters of our fathers or mothers called?

Who are our cousins?

Lesson 134.

manufacturers—those employers of labour who make goods for sale.

men—workpeople; sometimes women, girls, and boys.

machinery—such as lathes, looms, presses, &c., often moved by steam engines.

cutlery—all kinds of cutting instruments.

hardware—articles made of iron and other metals; as grates, fenders, stoves, pans of different kinds, &c.

cultivate—so as to render the soil fruitful, and the crops abundant.

Where do manufacturers and tradesmen live?

What are manufacturers?

Whom do they employ?

What do they employ besides workpeople?

Give examples of their machinery.

What articles do they make?

What is hardware?

Who live in villages?

How are they employed?

Why do they cultivate the earth?

How do manufacturers, tradesmen, and farmers serve each other best?

Lesson 135. *Tradesmen, Mechanics, &c.*

Grocers, drapers, ironmongers, &c. are called ·*shopkeepers*. Hatters, tailors, shoemakers, &c. are ·*tradesmen*. Watchmakers, smiths, and cabinet-makers are ·*mechanics*. Men who work at trades to earn wages are called ·*journeymen*. Boys who are bound to masters for a ·term of years, to learn trades, are called *apprentices*.

Lesson 136. *Divers Employments.*

Men who do any kind of work for day wages are called *labourers*. The men and women who live in families to do the ·work are called ·*servants*. The richer people ·employ servants to wait upon them, and to do their work; thus many ·poor people are ·employed, and obtain wages for their labour.

Lesson 135.

shopkeepers—they generally purchase the articles they sell from merchants or from manufacturers.

tradesmen—generally they employ workmen to make the articles or do the labour, while they assist in and direct the operations.

mechanics—those who are chiefly employed on machines, instruments, and furniture.

journeymen—those who are employed by masters; they are paid weekly for their labour.

term—generally for seven years.

What are grocers, drapers, and ironmongers called?

From whom do they generally obtain the articles they sell?

Name some tradesmen.

How are tradesmen generally engaged?

What are watchmakers, smiths, and cabinet-makers called?

What are mechanics?

What are men who work at trades to earn wages called?

When are their wages paid?

What are apprentices?

For how many years are they generally bound?

Lesson 136.

work—ploughing, digging, hedging, mowing, weeding, &c.

servants—they receive food and lodging, and sometimes clothes and wages.

employ—to light fires, sweep rooms, clean furniture, wait at table, prepare food, wash clothing, &c.

poor—thus the poor are instructed in the duties of a family, and become useful.

employed—some families also require a coachman, grooms, gardeners, a steward, and a farmer.

Who are called labourers?

Mention some of the various occupations of labourers.

Who are called servants?

How are they remunerated for their services?

Who employ servants?

Why do they employ servants?

Tell me some of the duties which servants have to perform.

What benefits do the poor derive from being employed as servants in the families of the rich?

What men servants do some families require?

Lesson 137. *Professions.*

Those occupations that require a good education and much knowledge are called ·*professions*. They consist of preachers of the gospel, teachers, lawyers, physicians, and surgeons. Preachers make known to us our ·religious duties. Teachers ·instruct the young. Lawyers give ·advice respecting the laws. Physicians and surgeons heal ·diseases.

Lesson 138. *Buildings of a Town.*

In towns the houses are built together; there are ·streets, courts, ·shops, work-houses, ·prisons, ·court-houses, ·alms-houses, ·infirmaries, churches and chapels, schools, ·libraries, a market-hall, and other public buildings. In most towns a market is held weekly, and fairs are held at certain periods every year.

Lesson 137.

professions—these employments require a long education, that those who practise them may learn from the experience of others.

religious—the proper understanding of the laws of God, that we may fulfil what is required of us.

instruct—in reading, writing, arithmetic, drawing, &c.

advice—they tell people how to act in difficulties.

diseases—some diseases requiring much atttention, and peculiar treatment, medicine, &c.

What occupations are called professions?

What is requisite for those who practise them?

Mention some professions.

In what do preachers instruct us?

What do you understand by religious duties?

What are they called who instruct the young?

In what arts do they instruct them?

Who give advice respecting the laws?

When do people apply to lawyers?

How are physicians and surgeons employed?

Lesson 138.

streets—passages, generally paved, for people and vehicles to pass from one part of a town to another part.

shops—to work in at manual trades; and also with large windows to exhibit articles for sale.

work-houses—for the lodging and boarding of the poor.

prisons—for the confinement of offenders against the laws.

court-houses—for the magistrates to assemble in.

alms-houses—for the aged poor, rent free.

infirmaries—for the sick, and for those who have met with accidents.

libraries—collections of books.

Where are numbers of houses built together?

Mention some of the buildings which a town contains.

Why are work-houses built?

What is the use of prisons?

What places are for the magistrates to assemble in?

What are alms-houses?

Who derive benefit from infirmaries?

What are the buildings called in which public worship is held?

Who are instructed in schools?

What are libraries?

Where is the market held?

Can you tell me anything about fairs?

Lesson 139. *Gas.*

Towns were formerly lighted with ·oil lamps; now nearly all towns are lighted with ·*gas*, which is an ·inflammable air made from coal, and ·conveyed under ground by pipes to the streets and houses. Towns are lighted to ·protect the property of the ·inhabitants, and to light them as they walk through the streets.

Lesson 140. *Water.*

Many ·towns have fresh ·water supplied to the houses from rivers or from ·reservoirs. The water flows under ground, sometimes for many miles through large ·pipes; it is then conveyed into houses by smaller pipes. In former times, water was drawn from ·wells, and carried, which was laborious, and took much time.

Lesson 139.

oil lamps—the light was very faint compared with that of gas, and robberies were frequent in the darker parts of the streets.

gas—made from oil, rosin, naphtha, wax, &c.

inflammable—that flames readily.

conveyed—inside pipes that are made so close at the joints that none can escape.

protect—light is a protection because the evil disposed will not do those acts in the light which they would do in the dark.

inhabitants—they walk with more safety in the light than in the dark.

How were towns formerly lighted?

Show how this method of lighting was defective.

With what are nearly all towns lighted now?

What is gas?

From what substances is it made?

What is meant by inflammable?

How is gas conveyed to the streets and houses?

For what reasons are towns lighted with gas?

In what way is light a protection to property?

Lesson 140.

towns—there are many conveniences in towns which cannot be had in villages.

water—sometimes water is supplied from springs and reservoirs, at a distance of many miles.

reservoirs—large pools of water made to contain a supply in case of drought, they should be higher than the highest part of the town that is to be supplied.

pipes—cast iron pipes are generally used.

wells—the wells of ancient times were for supplying cattle as well as man.

Whence do many towns derive their supply of fresh water?

How is the water conveyed to the towns?

Then, how are the houses supplied?

What are reservoirs?

How high should the reservoir be compared with the town it has to supply?

What kind of pipes are generally used to convey the water from the reservoirs to the towns?

How was water obtained in former times?

Lesson 141. *Fire.*

·Fires are required in all climates for cooking food; and in cold climates for warmth also. In some places fires are made of ·wood, in others of peat, which is dug out of ·bogs; but in England, the chief fuel used is coal. Coal is a mineral; it is dug out of deep places or pits, which are called ·*coal-mines*.

Lesson 142. *Ventilation.*

We cannot enjoy good health without ·pure ·air. Rooms that are low and damp, rooms in which sick people are confined, and all bedrooms should be ·well ventilated. Fires and lights burning in a room ·consume the air, and make ventilation more necessary. Those who work in ·close rooms should walk much out of doors.

Lesson 141.

fires—yielding light and warmth, and required for cooking, and for many arts.

For what purposes are fires required in all climates?

In what climates are they required for warmth?

wood—used in woody countries where there is no coal; in Ireland peat is much used; and in the arctic regions, where they have neither wood nor coal, oil.

What are the different substances used for making fires?

In what countries is wood used?

What substance is used in Ireland?

bogs—many of which have a large bed of vegetable matter (peat) beneath the water.

Out of what places is peat dug?

Why is oil used for making fires in the arctic regions?

coal-mines—a number near each other is called a *colliery*, and the men who work in them are colliers.

To what kingdom of nature does coal belong?

From what places is it obtained?

What is a number of coal-mines near each other called?

What are colliers?

Lesson 142.

pure—without any disgreeable smell.

What kind of air is it requisite for us to breathe in order that we may enjoy good health?

air—*pure air is inodorous, insipid, invisible, colourless, elastic—

Mention some of the qualities of good air.

well ventilated—that is, pure air should be admitted without draught, and the impure air should escape freely.

In what state should all rooms be kept?

What do you mean by well ventilated?

In what way are fires and lights burning in a room pernicious?

consume—the oxygen of the air is the pure part which is consumed; oxygen is essential to life.

What part of the air do fires consume?

close rooms—the air of close rooms in towns is deficient of oxygen and cannot purify the blood.

What is it necessary for those to do who work in close rooms?

What is the quality of the air in close rooms?

Lesson 143. *Roads and Railways.*

Roads are formed from ·place to place in nearly all countries. The mode of travelling on ·roads is on horseback, in gigs, in coaches, in carts, or by ·railway. Large trains of carriages, containing passengers and merchandise, are conveyed very ·rapidly along railways. People travel ·by water in ships or in steam-boats.

SECTION XVIII. OF GOVERNMENT.

Lesson 144. *The British Nation.*

The people of England, Scotland, and Ireland are the British ·nation. They are governed by ·laws which are made in the two houses of ·Parliament. The houses of Parliament consist of ·noblemen and ·gentlemen who pass the laws; which however, must be assented to by the sovereign before they are in ·force.

Lesson 143.

place to place—thus people are enabled to travel from one town to another.

roads—the turnpikes on roads receive a small payment from passengers on horseback or in vehicles, which is expended in repairing roads.

railways—most of the large towns in this country have railways to and from them.

rapidly—at from 20 to 40 miles in an hour.

by water—at about ten miles an hour.

How are people enabled to travel from one country to another?

How is money expended which is received at the turnpikes?

What are the different modes of travelling on roads?

How are most of the large towns in this country connected?

What is the use of railways?

At what rate do railway trains travel?

How can people travel by water?

At what rate do ships and steamboats travel?

Which is the most rapid mode of travelling?

Lesson 144.

nation—called the United Kingdom of Great Britain and Ireland

laws—the laws of the country.

parliament—the house of lords and the house of commons.

noblemen—who by their birth and station have a right to assist in making laws.

gentlemen—chosen by the people of the different counties, cities, and boroughs in the kingdom.

force—a new law can be put in force after the Royal assent has been given to it.

What people compose the British nation?

What do you mean by the United Kingdom of Great Britain and Ireland?

What do you understand by laws?

What do you mean by the two houses of Parliament?

Whose assent to the laws is required before they are in force?

What right have noblemen to assist in making the laws?

What gentlemen also assist in this important duty?

When can a new law be enforced?

Lesson 145. *Evil-doers.*

Those who ·break the laws of their country are liable to punishment. ·Theft, which is taking another person's goods, is punishable by law with ·imprisonment. ·Forgery, which is signing another person's name, to deceive any one, is punishable with ·transportation. Treason and murder are crimes which are punishable with ·death.

Lesson 146. *Trial by Jury.*

·Trial by jury means trial before twelve of our countrymen, who ·attend at a court with the judge to ·determine whether prisoners are or are not guilty of crime. It is their business to hear the ·accusation, to listen to the ·witnesses, to attend to the defence, and to bring in the ·verdict, upon which the judge passes ·sentence.

Lesson 145.

break—such offenders, if found out, are apprehended.

theft—sometimes a thief is caught in the act of stealing.

imprisonment—deprivation of liberty, generally within a prison

forgery—imitation of hand-writing in order to obtain money.

transportation—either to a distant colony of convicts; or to hard labour with other convicts, under the inspection of officers, in our own country.

death—generally by hanging.

To what are they liable who break the laws of their country?
What is done with them if they are found out?
What is theft?
With what is it punishable?
What is forgery?
How are they punished who are found guilty of forgery?
What do you mean by transportation?
What other crimes can you mention?
What crimes are punishable with death?
What kind of death is generally inflicted upon murderers and traitors?

Lesson 146.

trial—to *try* if the party accused is guilty or innocent.

attend—at a court of sessions, or at a court of assize.

determine—by examining witnesses, who are to tell "the truth and nothing but the truth."

accusation—from the party who knows most about it.

witnesses—those who saw the offence committed, or who know anything connected with it.

verdict—whether guilty or not.

sentence—the punishment awarded.

What does trial by jury mean?
For what purpose does the jury attend with the judge?
On what occasions do they attend?
How are they to determine whether the prisoners are guilty or innocent?
Who make the accusation?
What are the witnesses?
To what else does the jury attend besides the accusation?
How does the judge act when he knows the verdict of the jury?
What do you mean by verdict?
What is meant by sentence?

Lesson 147. *War.*

War is one of the ·greatest calamities that a nation can suffer. For in war people are ·killed, houses are ·plundered, lands are ·wasted, towns and villages are ·burned. War reduces many to ·beggary, makes wives become ·widows, and children orphans. War is the cause of much ·wickedness and sorrow.

Lesson 148. *The Army and Navy.*

The ·army of Great Britain consists of many regiments of ·horse and ·foot soldiers. Most of them live in ·barracks in England, Ireland, and Scotland; but some of them ·reside in the ·colonies, for their defence. The ·navy protects our ·commerce in all parts of the world. Soldiers and sailors when aged or wounded receive ·pensions.

Lesson 147.

greatest—because it produces both misery and vice.

killed—both the innocent and the guilty.

plundered—by the conquering army.

wasted—the fruits of the soil are destroyed.

burned—to do the enemy all the injury possible.

beggary—if a man's property is destroyed he is reduced to beggary.

widows—their husbands being killed, and their children made fatherless.

wickedness—many vices prevail during a war.

Mention one of the greatest calamities that a nation can suffer.

Enumerate some of the miseries that are occasioned by war.

By whom are houses plundered?

What is meant by lands being wasted?

Why are towns and villages burned?

To what state are many reduced by war?

What does it cause many wives and children to become?

How are they made orphans and widows?

Of what other evils is war the cause?

Lesson 148.

army—men armed for war.

horse—called cavalry.

foot—called infantry.

barracks—large buildings in which officers and men are lodged.

protect—to keep off invaders.

colonies—countries under the rule of a parent state.

navy—the ships belonging to the government of a country.

commerce—carried on by merchant ships trading abroad.

pensions—a certain rate of payment per day for past services.

What is an army?

Of what soldiers does the army of Great Britain consist?

What are the horse soldiers called?

What are the foot regiments called?

Where do most of the soldiers of Great Britain live?

What are the buildings in which they live called?

How are some of our soldiers engaged abroad?

What are colonies?

What is a navy?

What does the navy protect?

What provision is there for soldiers and sailors when aged or wounded?

Lesson 149. *Money.*

·Money consists of gold, silver, or copper ·stamped by the government into ·coins of a certain value. The principal coins used in England are ·sovereigns, ·shillings, and ·pence. ·Bank-notes are printed strips of paper with promises to pay the sums marked on them. Exchanging goods for other goods is called ·barter.

Lesson 150. *Property.*

Houses, furniture, books, cattle, fields, forests, manufactures, &c. are *property.* ·Property is sometimes ·obtained from parents and friends; but it is also got by ·skill and by diligence. Persons who have money to spare often employ a part of it in promoting ·useful undertakings, as rail-roads; or ·benevolent ones, as hospitals.

Lesson 149.

money—sovereigns, shillings, pence, farthings, &c.

stamped—without the stamp they would not be money.

coins—formed of different metals.

sovereigns—these, and half-sovereigns are of gold.

shillings—these, and crowns, half-crowns, florins, sixpences, fourpennies, and threepennies are of silver.

pence—these, half-pence, and farthings are of copper.

bank-notes—called paper money.

barter—money payments are better than barter.

What metals are made into money?

By whom is money made?

How are gold, silver, and copper converted into money?

Would they be money without the stamp?

Name the principal coins used in England.

Of what are sovereigns made?

What coins are made of silver?

Which are made of copper?

What are bank-notes?

What kind of money are they called?

What is barter?

Which is better, a money payment or barter?

Lesson 150.

property—the different kinds mentioned in the lesson would sell for their value in money.

obtained—when parents die they generally leave their property to their children.

skill, &c.—those who have knowledge, skill, and industry often become wealthy, if they are careful.

useful, &c.—railways, canals, water works, gas works, schools, infirmaries, churches, &c.

benevolent—being willing to do good with it, by subscribing to schools, relieving the unfortunate, and in many ways lightening the sorrows of the afflicted.

What different kinds of property are mentioned in the lesson?

How is property sometimes obtained?

To whom do parents generally leave their property?

When does this happen?

In what other way may property also be obtained?

How do those who have knowledge, skill, and industry often become rich?

How do some persons who have money to spare employ part of it?

What examples of useful undertakings can you give?

Lesson 151. *Taxes.*

·Taxes are sums of money ·paid by the people for the support of the Government. ·Life and property must be protected, violence and fraud must be ·punished, laws must be obeyed, and social ·order maintained. The persons employed to do these things for us are paid out of the taxes that are collected.

SECTION XIX. OF OTHER NATIONS.

Lesson 152. *Countries of Europe & Asia.*

The four great ·divisions of the earth are *Europe*, *Asia*, *Africa*, and *America*. Each part comprises many nations. The chief nations of *Europe* are ·Russia, ·Austria, Prussia, ·Spain, ·Portugal, Italy, ·Great Britain, France, Belgium, and Holland. Those of ·*Asia* are Hindostan (or India), China, Japan, Persia, Arabia, Turkey, and Palestine.

Lesson 151.

taxes—on horses, dogs, carriages, wines, tea, soap, paper, &c.

paid—the taxes are collected by the officers appointed by the government.

life—the government pays police, men and others, whose business it is to protect life and property.

punished—therefore the expense of building prisons, and maintaining gaolers is necessary.

order—policemen are to preserve order and to prevent crime, as well as to detect offenders.

Why do people pay taxes?
What animals and articles in common use can you mention on which taxes are paid?
Who collect the taxes?
What benefits do people derive from the government they support?
In what way does government protect life and property?
What expenses does the punishment of offenders incur?
What other duties have policemen besides that of detecting offenders?
How are policemen and other officers appointed by government for the good of the country paid?

Lesson 152.

divisions—Australia is sometimes considered a fifth great division; it is the largest island of the globe.

Russia—a great agricultural and commercial state.

Austria and Prussia—noted for manufactures, agriculture, and minerals.

Spain and Portugal—winegrowing and sheep feeding countries.

Great Britain, &c.—all commercial, manufacturing, and agricultural states.

Asia—most of the countries except China and the British colonies, are only partially civilized.

Name the four great divisions of the earth.
What island is sometimes considered as a fifth great division?
Does Europe consist of one nation only or of several?
Can you mention the chief nations of Europe?
What do you know about Russia?
For what are Austria and Prussia noted?
What are the chief productions of Spain and Portugal?
For what are Great Britain, France, &c. distinguished?
Which are the chief countries of Asia?
In what state are most of the Asiatic countries?

153. *Countries of Africa & America.*

The chief countries of *Africa* are ·Egypt, ·Barbary, Guinea, ·the Cape of Good Hope, ·Negroland, and ·Abyssinia. In *America* are the ·United States, ·Canada, ·Mexico, and ·Brazil. The people of Europe are called *Europeans;* those of Asia, *Asiatics;* those of Africa, *Africans;* and those of America, *Americans.*

Lesson 154. *Savage Nations.*

Some nations exist in a ·savage state. They dress in ·skins, and ·feed on wild fruits, roots of plants, and the flesh of animals caught in the chase. The ·North American Indians, the Indians of South America, the natives of ·Australia and ·New Zealand, and most of the Negroes in the interior of Africa are in a savage state.

Lesson 153.

Egypt—a fine agricultural country.
Barbary—agricultural and piratical.
the Cape—colonies of the English and Dutch are settled there; many savage tribes, in the adjacent country.
Negroland—a hot and an unhealthy country.
Abyssinia—hot, fertile, and mountainous.
United States—once a colony of Great Britain, now a powerful republic.
Canada—fertile, but has very long winters.
Mexico—a fine climate in the more elevated parts.
Brazil—a rich country abounding in forests.

Mention the chief countries of Africa.
What kind of a country is Egypt?
What can you tell me of Barbary?
What countries own the colonies of the Cape?
What is the general character of Negroland?
What is the general character of Abyssinia?
Name the chief countries of America.
What were the United States formerly?
What is their present condition?
What are the people of Europe called?
What people are called Asiatics?
What people are called Americans?
What people are called Africans?

Lesson 154.

savage—men without the knowledge of civilized life, and without laws, generally governed by chiefs.
skins—their dress is but partial.
feed—they do not cultivate the earth nor rear domestic animals, consequently they are sometimes deficient of food.
N. A. Indians—they generally live in tribes.
Australia—its savage tribes are in the worst condition of any of the human race.
New Zealand—the New Zealanders are fast adopting civilized manners.

In what state do some nations exist?
How are they generally governed?
What can you tell me of their clothing?
On what do they feed?
How do they differ from civilized nations in their habits of industry?
What is the consequence of this?
What people in America are living in a savage state?
What other people can you mention that are savages?
Of what country are the savage tribes in the worst condition?
What savage tribes are fast adopting civilized manners?

Lesson 155. *Barbarous Nations.*

Those nations are called ·*barbarous* that have no certain dwelling-place, but ·wander about to obtain food for their flocks, or to make ·war. These nations are found chiefly in the deserts of ·Africa, ·Tartary, ·Arabia, and ·Persia. Some of them possess villages, practise agriculture, and obtain European manufactures by ·barter.

Lesson 156. *Half-civilized Nations.*

The people of some countries are ·partly civilized. Such are found in ·Africa, in ·China, in ·Hindostan, in Japan, in Persia, and in ·Turkey. They cultivate the soil, and know a few arts. They have laws and some books, but they are very ignorant of the useful arts. Many of their customs are barbarous.

Lesson 155.

barbarous—they live a life of war and plunder.

wander—they sometimes live in tents which they carry from place to place.

war—for the sake of plunder.

Africa—as several tribes of the Moors.

Tartary—the Tartars are also a wandering and plundering peo ple.

Arabia—chiefly peopled by wandering Arabs.

Persia—the barbarous tribes of this country are the Toorks, Uzbeks, Moguls, and Koords.

barter—money is only used in settled states of society.

What nations are called barbarous?
What kind of a life is theirs?
What do you know of their habitations? [war?
What is their object in making
In what countries are barbarous nations chiefly found?
What African tribes are barbarous?
What is the general character of the Arabs?
Mention the barbarous tribes of Persia?
What possessions have some of these tribes?
What art is practised by some of them?
How do they obtain European manufactures?

Lesson 156.

partly—the state of half civilization is more the fault of the rulers than the people.

Africa—some of the tribes of Africa are fast advancing in civilized customs.

China—the people consider themselves as the most civilized in the world, and all others as barbarians; but they have many disgusting habits, and idolatry prevails.

Hindostan—the sway of Britain contributes to more civilized habits and laws.

Turkey—Mahommedanism is the religion of the state, but a large number of the population are Christians.

Are any nations in the state between barbarism and civilization?
What state do you call this?
Whose fault is it generally that they are not more civilized?
Where are half-civilized nations to be found?
What opinion have the Chinese of themselves?
How do they look upon all other nations?
Show that the Chinese are not the most civilized people.
What is the state religion of Turkey?
Do half-civilized nations pay any attention to agriculture?
What knowledge have they?

Lesson 157. *Civilized Nations.*

The nations of Spain, Portugal, Italy, Russia, and Poland, may be called ·civilized. The arts and sciences are known among the ·learned, but most of the people are very ·ignorant. The other nations of Europe, and the people of the United States of ·America, are the most enlightened in the earth.

SECTION XX. OF TRADE AND COMMERCE.

Lesson 158. *Commerce.*

One country produces ·wheat in large quantities; another, ·grapes. In other countries ·figs, ·olives, ·dates, ·oranges, ·spices, tea, coffee, ·gums, ·cotton, ·sugar, and tobacco abound. Other countries are noted for their ·manufactures. The exchange of the productions of one country for those of another is called commerce.

Lesson 157.

civilized—that is they live in towns and cities, cultivate the earth, rear flocks, manufacture their produce, and exchange it for other productions. They have books, arts, and universities, and generally profess the Christian religion.

learned—in all these nations many learned men have from time to time risen up.

ignorant—the greater part of the people must remain ignorant in all countries till wise laws are established.

America—in some respects equal to the mother country, in others very defective.

May Spain, Portugal, &c. be called civilized?

Why may they be called civilized?

What means have they for attaining knowledge?

What religion do they generally profess?

Among whom are the arts and sciences known?

In what state is the greater part of the people?

Which are the most enlightened nations in the world?

Mention the other nations of Europe.

In what condition are the United States compared with England?

Lesson 158.

wheat—Egypt, the countries of the Baltic, the United States, &c.

grapes—France, Italy, Spain, &c.

figs—Turkey, Spain, Portugal, &c.

olives—France, Italy, Northern Africa, &c.

dates—the verge of the African and Arabian deserts, &c.

oranges—Portugal, Spain, Italy, Malta, &c.

spices—the Indian Archipelago.

gums—Egypt, Arabia, East Indies.

cotton—America, East and West Indies, &c.

sugar—West Indies, North America, &c.

manufactures——Great Britain, France, Belgium, Germany, &c.

Are the productions of all countries alike?

Give examples of the different productions of various countries.

What countries can you mention that are famous for the growth of corn?

Where are grapes abundant?

In what countries do figs grow?

Which are the olive countries?

Where are dates found?

What countries produce oranges? ———spices?———gums?

Whence do we get cotton? ———sugar?

What countries are noted for their manufactures?

What is commerce?

Lesson 159. *Exports and Imports.*

Great Britain exports iron, steel, salt, and many ·manufactures; and ·imports wine, cotton, leather, timber, gold, silver, &c. France exports ·wine, ·brandy, fruit, and ·fancy goods; and imports cotton, tea, coffee, spices. ·Russia exports tallow, leather, hemp, fur; its chief imports are the produce of ·tropical climates, and manufactures.

Lesson 160. *Ships.*

Countries that are separated from each other by the ·ocean are reached by means of ·ships, which are urged by ·sails only, or provided with ·engines worked by steam. Ships ·convey both persons and goods. The owners of ships are often merchants; the men who work them are sailors; and the master is called the captain.

Lesson 159.

manufactures—hardware, cutlery, &c., showing it is a manufacturing state.

imports—articles that its climate, extent, and resources do not allow it to produce.

wine, brandy, &c.—showing its genial climate, for their production.

fancy—showing the taste of the people for the beautiful.

Russia—its exports of tallow and leather show that it is an agricultural country.

tropical—showing that its climate cannot produce sugar, spices, &c., and that it has not facility for manufactures.

Tell me some of the exports of Great Britain.

What manufactures does it export?

What articles does Great Britain import?

What articles does France export?

What kind of a climate is required for the production of wine, brandy, &c.

What trait in the character of the French is shown by their fancy goods?

What articles does France import?

Name some Russian exports.

What articles does Russia chiefly import?

What would the imports and experts of Russia lead you to suppose respecting its climate?

Lesson 160.

ocean—some countries are separated from others by rivers, some by mountains, some by seas.

sails—the power of the wind on the sails forces them forward, and the sailors guide them by the rudder.

engines—the power of steam, acts on their paddles, and they go forward even against the wind.

convey—a vast amount of goods and passengers arrive and depart daily from the principal ports of this kingdom.

How are countries separated from each other?

What means of communication have those countries which are separated by the ocean?

By what means are ships driven along?

How are they guided?

How are steam ships enabled to sail against the wind?

For what purposes are ships employed?

What are the owners of some ships called?

How are sailors employed?

Who is called the captain?

Lesson 161. *Machinery.*

Many ·operations are performed by ·machinery which either could not be done at all, or would require ·great toil and expense. The plough, the harrow, and the threshing-machine ·save the labour of the spade, the rake, and the flail. The ·railway, the coach, and the waggon save the pack-horse and the foot passenger.

Lesson 162. *Language.*

We express our ·wants, our ·thoughts, and our ·feelings by means of *language.* Language enables us to give names to ·persons, ·places, ·objects, ·virtues, ·vices, &c. It expresses ·qualities; such as hard, soft, old, new, &c. We speak also of ·actions and of ·events. Language may be written as well as spoken.

Lesson 161.

operations—such as dragging a train of heavily laden carriages at a great speed.

machinery—men require wages, horses require corn, machinery is generally moved by fire; the expense of coal is less than keeping horses to labour, or paying wages for human labour.

great toil—the labour of two men sawing timber for a day has been calculated as equal to raising half a hundred weight eight miles.

save labour—and thus cause the article produced to be sold cheaper.

How are many operations that require great power performed?

What would be the consequence of having no machinery?

What laborious occupations can you mention that are performed by machinery?

How is machinery generally moved?

Why is the labour performed by machinery cheaper than horse labour, or human labour?

What effect has machinery on the price of the article produced?

What instruments save the labour of the spade, rake, and flail?

What inventions save the labour of the pack-horse and foot passenger?

Lesson 162.

wants—children soon learn to express their wants.

thoughts—things that arise in the mind.

feelings—whether pleasurable or painful.

persons, places—as John, London.

objects—as book, slate, tree, star.

virtues—temperance, truth, justice.

vices—lying, idleness, dishonesty.

The above words are called nouns.

qualities—words of this kind are called adjectives.

actions—words of this class are verbs.

events—things that have taken place.

What are we enabled to express by language?

What are thoughts?

Of what two kinds may our feelings be?

What is that class of words called which consists of the names of persons, objects, &c.?

Mention some persons.

What places can you name?——objects?——virtues?——vices?

What are those words called which express the qualities of nouns?

Name some adjectives.

What words speak of actions?

What are events?

In what different ways may language be expressed?

Lesson 163. *History.*

History is a ·record of what has happened in ·former times. The ·oldest history is that which tells us how the world was made. The most important history is that of the spread of the ·gospel. The history of England gives us an account of kings, of ·wars, and of ·great men in England for about 1900 years.

Lesson 164. *Newspapers and Books.*

Information is conveyed by ·newspapers and by ·books. Newspapers contain accounts of ·accidents, ·crimes, deaths; ·trades, ·inventions, ·amusements; and many other things either important or agreeable to be known. Books are written either for instruction or for amusement. By reading, mankind become ·wiser and happier.

Lesson 163.

record—an event written down.

former years—events are recorded which occurred nearly 6,000 years ago.

oldest—that is the Bible history, it includes the earliest events in the history of mankind.

gospel—it teaches us the religion which Christ taught on earth when he came to fulfil God's promises to man.

wars—when the country was less civilized than at present.

great men—those who have laboured for the good of their country.

What is history?
What is a record?
Over what period of time does history extend?
Which history is the oldest?
What book contains an account of the creation?
Of what are we informed by the most important history?
What is taught by the gospel history?
What information is contained in the history of England?
About how many years are included in the history of England?
Who are meant by the great men spoken of in history?

Lesson 164.

newspapers—afford information of what is daily passing in our own and other countries.

books--which contain the experience of those who wrote them.

accidents—floods, fires, shipwrecks, explosions, &c.

crimes—robberies and other evil deeds.

trades—which are flourishing, and which are not.

inventions—to lessen labour, or to teach with greater facility.

amusements—such as exhibitions of different kinds.

wiser—if they remember and put in practice the good they learn.

What is the use of newspapers and books?
On what different subjects is information given in newspapers?
What knowledge is afforded by newspapers?
What knowledge do books contain?
What accidents are noticed in newspapers?——crimes?
What is said in them about trades?
For what purposes are books written?
How are mankind benefited by reading?
What is it necessary that we should do in order to become wiser and happier?
How do people become wiser?

Lesson 165. *Self-Improvement.*

·Self-improvement is one of the first duties of life. Persons ·improve themselves by ·study, by ·observation, and by ·practice. Whatever a man's occupation is, he may improve himself by giving ·attention to it. And whatever his position in life, he may improve himself in his love to man and in his ·obedience to God.

SECTION XXI. OF MATTER, MOTION, ETC.

Lesson 166. *Divisibility of Matter.*

All things we can see are formed of substance called ·*matter*. Matter may be ·divided and subdivided so often that it will at length be ·very small indeed. The smallest portions of matter are called ·atoms; the power of being ·divided into atoms is called the *divisibility* of matter. The odour of flowers consists of atoms.

Lesson 165.

self-improvement—becoming wiser and better by means of one's own exertions.

study—deep thought on a subject so as to understand it.

observation—the attainment of an intelligent knowledge of what passes around us.

practice—carrying into effect our studies and observations.

attention—without much attention no improvement in learning or in art will take place.

obedience—to the warnings, and commands in the Bible.

Mention one of the first duties of life.

What is meant by self-improvement?

By what means may persons improve themselves?

What is study?

What is meant by observation?

What is the carrying into effect of our studies and observations called?

How may a man improve himself in his occupation?

What do you mean by attention?

In what respects may every man improve himself?

What is meant by obedience to God?

Lesson 166.

matter—the materials of which things are composed.

divided—odours are particles of matter, but we cannot see them.

very small—if smoke were to be greatly magnified it would be found to consist of solid matter.

atoms—particles of extreme minuteness.

divided—perhaps there is no end to the divisibility of matter; if this be the case matter is *infinitely* divisible.

Mention some things that you can see.

Of what substance are all those things formed?

Is it possible to divide matter?

Give an example in which matter is divided and subdivided to such an extent that we can only perceive it by the sense of smell.

If smoke were to be greatly magnified of what would it be found to consist?

What are atoms?

What is the power of being divided into atoms called?

Of what does the odour of flowers consist?

Lesson 167. *Indestructibility of Matter.*

We cannot destroy ·one particle of matter. We may ·break and powder stone, but the dust will remain. We may ·boil away water, but it will be ·changed to steam, condensed in the cold air, and again changed to water. We can ·burn coal, wood, and paper, but the smoke and ashes will be left. This is called ·*indestructibility.*

Lesson 168. *Attraction.*

Things are ·drawn together by *attraction.* Atoms of matter, as coal, wood, and stone, are held together by ·*cohesive attraction.* Bodies are drawn to the earth by the *attraction* of ·*gravitation;* by the same kind of attraction, the earth revolves round the sun. A sponge ·absorbs water through its pores by ·*capillary attraction.*

Lesson 167.

one particle—every particle that existed at the creation exists now, though large masses have changed their form.

break—this is only changing its form.

boil—another change of form, the steam again becomes water.

burn—the ashes, smoke, gases, and vapour still exist, and would again, if they could be collected, make up the first weight.

indestructibility—the property of resisting destruction.

What impossibility is mentioned in this lesson?

Hence, what quantity of matter exists now, compared with that which existed at the creation?

How may we change the form of a stone?

Prove that it is only changed and that the matter of which it was composed is not destroyed.

How may water be made to change its form?

What is the effect of the cold air on steam?

Show that when coal is burnt it is not destroyed but only changed in form.

What is meant by indestructibility?

Lesson 168.

drawn together—as the iron to the magnet; the loadstone towards the north; children who love learning to their school.

cohesive—this kind of attraction holds solid bodies together.

gravitation—a stone falling tends to the earth; the planets tend to move round the sun, by gravitation.

absorbs—draws up, its pores are tubes.

capillary—all porous substances exhibit capillary attraction, as bread and sugar, which absorb water.

How are things drawn together?

By what substance is iron attracted?

Give other example of attraction.

How many kinds of attraction are mentioned in the lesson?

Name the four kinds.

What is the nature of cohesive attraction?

By what kind of attraction are bodies drawn to the earth?

What other example can you give of the attraction of gravitation?

Name the kind of attraction by which a sponge absorbs water.

What kind of substances exhibit capillary attractio n?

169. *Peculiar Properties of Matter.*

All bodies have ·*weight* or ·*density*; although some are much lighter than others. Some substances are ·*hard*; as glass and iron. Some are ·*elastic*; as India-rubber and whalebone. Some are *brittle*; as glass and china. Metals that can be beaten thin are ·*malleable*; and those that can be drawn into wire are *ductile*.

Lesson 170. *Motion.*

·*Motion* is change of place. By motion the blood ·circulates; the heart ·beats; the lungs contract and dilate. Bodies are put into motion by ·*force*. When a ball is struck the force of the blow puts it into motion. ·Bodies can neither put themselves into motion nor ·stop themselves when in motion; this property is called *inertia*.

Lesson 169.

weight—even a feather has some density, though not so much as a bullet.

hard—there are different degrees of hardness ; down, though soft, has hardness, though it is not so hard as steel.

elastic—by this property bodies return to their shape ; air can be compressed, but if set free, fills the space it occupied at first.

malleable—gold is said to be the most malleable metal, because it can be beaten thinner than any other.

What properties are here said to be possessed by all bodies ?
Do all bodies possess the same degree of weight and density ?
Instance two bodies which have different degrees of density.
Have all bodies the same degree of hardness ?
What bodies possess very different degrees of hardness ?
What elastic bodies can you mention ?
What is meant by elastic ?
Name some brittle substances.
Which of the metals are malleable?
Why is gold said to be the most malleable metal ?
What is the meaning of ductile ?

Lesson 170.

motion—the opposite of rest, the blood changes its place in our bodies, the sap, in trees.

beats—when the motions of the heart cease, our life terminates.

force—the power which causes motion ; we are enabled to walk, and work by the force of the muscles.

bodies—those at rest require force to put them in motion.

stop—those moving require force to stop them.

What is motion ?
Mention some of the internal motions of the body.
What internal motion have trees ?
What happens when the motion of the heart ceases ?
How are bodies put in motion ?
By what means are we enabled to walk and work ?
How may a ball be put into motion ?
Can bodies stop themselves when in motion ?
When is a body unable to move?
What is required both to stop bodies when in motion, and to put them into motion when at rest ?

Lesson 171. *Form.*

All things have ·*form*. Some objects are straight, others are curved; some are ·regular, and others are ·irregular. A bench is *straight*, a ring is *circular*, and the horns of a cow are *curved*. A ball is *spherical*. A *triangle* has three sides. A *square* has four sides. A lump of earth is irregular in its ·form.

Lesson 172. *Magnitude.*

Objects are ·great or ·small. The greatest ·works of man in a country are small ·compared with the ·country itself; the largest country is small compared with the ·earth; the earth is small compared with the sun; and the sun is small compared with the universe. Many small objects cannot be seen without a ·microscope.

Lesson 171.

form—the shape of an object; as the form of the head, of the hand, of a serpent, &c.

regular—as a square, a circle, a book, a bullet.

irregular—as fragments of coal or stone.

form—some forms are *superficial*, others are *solid*. Superficial forms have only length and breadth without thickness. Superficial measure is therefore length and breadth only. Solids have thickness, as a sphere, or a cube.

What is form
How do objects vary from each other in their form?
Name some straight objects
What curved objects can you mention?
What examples can you give of objects that are regular in their form?
What objects are irregular?
What is the form of a ring?
Of what form are the horns of a cow?
What is the form of a ball?
How many sides has a triangle?
How many corners?
How many sides has a square?
Of what form is a lump of earth?

Lesson 172.

great—as a steam engine, a whale.

small—as a pin's head, an ant.

works—the crystal palace was 1851 feet long, but though so large, it could not be compared with London.

compared—London is but a small spot compared with England.

country—England is but a small country to Europe.

earth—Europe is the smallest buarter of the globe.

microscope—which instrument magnifies them.

Are all objects of the same size?
Mention some objects, the sizes of which differ very much.
What great objects have you seen?
Of all animals which is the greatest?
What is the size of the greatest works of man compared with the size of a country?
When does the largest country appear small?
Is there any object in nature which is much larger than the earth?
Of what vast whole is the sun only a small part?
What instrument is necessary in order to render many small objects visible?

Lesson 173. *Measurement.*

The ·size of many objects can be measured by a ·rule, on which inches and parts of inches are marked. Twelve inches are called ·a foot, and three feet ·a yard. ·Tables, doors, and boxes are measured by feet and inches. Cloth, calico, carpets, &c. are measured by yards. Distant places are measured by ·miles.

Lesson 174. *Colour.*

All ·objects about us have ·*colour.* The sky is blue, grass is green, blood is red. ·Seven colours are seen in the rainbow, but only three of them are principal colours; red, blue, and yellow. All other colours are made by mixing these. ·White is not a colour, and ·black is the absence of all ·colour.

Lesson 173.

size—length, breadth, height, thickness, all denote size.

rule—an inch is a twelfth part of a foot, half inches, quarter inches, and eighths are marked on common rules.

a foot—supposed to have been originally taken from the length of a man's foot.

a yard—thirty-six inches, or three feet.

tables, &c.—if you want to know the number of feet in a door, you must multiply the length by the breadth; this is called square measure.

miles—1760 yards make one mile.

With what instrument may many objects be measured?

What parts are marked on common rules?

How many inches are there in a foot?

From what object is this measure supposed to have been originally taken?

How many feet are there in a yard? How many inches?

What objects are measured by feet and inches?

How may the number of feet in a door be ascertained?

What fabrics are measured by yards?

By what measurement are distant places spoken of?

Lesson 174.

objects—but we could not see their colour without light.

colour—if there was no light there would be no colour.

seven—red, orange, yellow, green, blue, indigo, and violet.

white—reflects the rays of light, but does not separate them.

black—absorbs all the rays of light.

colour—is one of the means by which the eye distinguishes objects, which light enables it to see.

Through what medium are we enabled to see the colour of objects?

What effect has the absence of light on the colour of objects?

What is the colour of the sky?

Of what colour is grass?—blood?——————gold?————copper?

How many colours are seen in the rainbow? Name them.

What colour reflects rays of light?

What colour absorbs light?

Which are the three chief colours?

How are all other colours made?

Is white a colour?

What is the absence of all colour called?

What is the difference between black and white?

SECTION XXII. THE MECHANICAL POWERS.

Lesson 175. *The Lever.*

·Mechanics use ·tools, ·implements, and ·machines to assist them in their operations. One of these implements is called the ·*lever*. Some levers are used to ·raise or move ·heavy objects. A poker is a lever with which we raise the hot coals of the fire; a spade is a lever, that is used to cut, lift, and move masses of earth.

Lesson 176. *The Lever. (Continued.)*

In lifting a lump of coal with the ·tongs we use a lever, the *power* being applied by the hand to the two legs of the tongs. In the treddle of a ·turning-lathe the power is applied by the foot. A ·pump-handle is a bent lever, the power being applied at its end. A ·clawed hammer when used to draw nails is also a bent lever.

Lesson 175.

mechanics—men who are brought up to perform certain operations in a trade.

tools, &c.—hammers anvils, files, tongs, pincers, saws, &c.

machines—lathes, presses, engines.

lever—an implement to lift with; as a crow-bar, &c.

heavy—the strength of the lever must be in proportion to the weight to be moved.

raise—stones that are fast bedded together in a quarry are moved by crow-bars.

What are mechanics?
How are they assisted in their operations?
Mention some of the tools used by mechanics.
Name some of their machines.
What is the use of the lever?
What examples can you give of the lever?
How must the strength of the lever be proportioned?
Of what use is a crow-bar in a quarry?
What lever is used to raise the hot coals of the fire?
What kind of an implement is a spade?
For what purposes is it used?

Lesson 176.

tongs—a kind of lever which is only suitable where the weight is small.

turning-lathe—by this machine children's toys, and other objects are made circular in form; a turner uses many cutting tools.

pump-handle—in this case a lever is used to bring up water from a great depth; the handle is connected with a perpendicular rod, and thus forms a bent lever.

clawed hammer—used to drive nails into wood, and also to draw them out.

What implement is used in lifting a lump of coal with the tongs?
Where is the power applied?
In what cases is this kind of lever suitable?
What is the use of a turning-lathe?
How is the power applied to it?
What kind of a lever is a pump-handle?
At what part of it is the power applied?
For what purpose is a pump-handle used?
When is a clawed hammer used as a bent lever?
For what other purpose may it also be used?

Lesson 177. *The Wheel and Axle.*

The ·*wheel and axle* are used to lift heavy weights. On board ships this instrument is called the ·*capstan*; the cable is attached to the capstan, and the ·anchor to the ·cable; the anchor is raised or lowered by means of the capstan. The ·crane, and the grindstone are also applications of the wheel and axle.

178. *The Inclined Plane. The Wedge.*

A ·sloping plank or ladder, used to roll goods up ·slight elevations, is an ·*inclined plane.* When ships are ·launched they are made to descend an inclined plane into the water. The ·*wedge* is used in splitting blocks of wood. In ·quarries and coal-pits it is driven between layers of stone or coal to separate them.

Lesson 177.

wheel and axle—used in the common grindstone, and in drawing up water from a well in a bucket.

capstan—with this machine, aided by bars, as levers, to turn it, a heavy anchor is easily raised by a few men. Thus the machine saves the labour of many men.

anchor—an instrument for holding a ship at rest in the water.

cable—the rope or chain attached to the anchor.

crane—by means of the crane heavy bales, and other substances are raised or lowered with ease.

What mechanical power is used for raising heavy weights?

What is this instrument called on board ship?

What advantage is derived from the use of the capstan.

What is an anchor?

Sketch an anchor on the black board.

How is the anchor connected with the capstan?

What is the cable?

Mention some other applications of the wheel and axle?

What laborious operations are easily performed by means of a crane?

Lesson 178.

sloping—raised higher at one end than at the other.

slight—the less the slope the easier to get the load up it.

inclined plane—a hilly road, gradually rising; a flight of stairs, the roof of a house.

launched—the descent is made very gradual into the water.

wedge—nails, awls, needles, chisels, and axes, are wedges.

quarries—places where stone is obtained for building and other purposes.

What is an inclined plane?

For what purpose is it used?

What is meant by sloping?

What effect has the slope on the labour of getting the load up the inclined plane?

What other examples can you give of the inclined plane?

By what means are ships launched?

To what purpose is the wedge applied?

Give examples of very common objects which are wedges.

How is the wedge used in quarries and coal-mines?

What are quarries?

Lesson 179. *The Screw. The Pulley.*

The ·*screw* is chiefly used in ·presses, which are worked by ·levers; the thread of the screw is the projecting ridge round it. If the threads are near each other the screw is ·easier to turn than if they are wide apart. The ·*pulley* is used for raising weights; a rope passes over it, and the pulley turns round with the rope.

Lesson 180. *Mechanical Contrivances.*

The best machines cannot be made ·to act of themselves; ·power must be applied to them. The power employed is ·labour, wind, water, or steam. A grindstone is turned by a ·man, a windmill is moved by the wind, a steam-engine by steam; when the power is no longer ·applied to the machine it is at rest.

Lesson 179.

screw—it is very properly called a winding wedge.

presses—for squeezing oils and juices from vegetables; as linseed, apples, grapes, olives; also used in printing, in packing, and in coining.

levers—such presses are always connected with levers, moved by men, animals, or steam.

easier—but the operation is more slowly performed.

pulley—a simple pulley is a grooved wheel in which a rope passes with very little friction.

In what machines is the screw chiefly used?

How are they worked?

What different kinds of power are applied to the levers?

For what purposes are presses used?

What is the thread of a screw?

What effect has the distance between the threads of the screw upon the speed of the operation?

How does this also affect the labour required?

What is a simple pulley?

For what is the pulley used?

What is the object of the pulley?

Lesson 180.

o *act*—they are contrived to work, but they must be put into action by an intelligent being, and a suitable force must be applied.

power—as in the windmill, the water-wheel, or the steam engine, and this power must be connected with the machine.

man—but a large number of grindstones for sharpening sickles, scythes, swords, knives, &c., are turned by a steam engine or a water wheel.

applied—the power can be taken off and the machinery stopped with little trouble.

Can machines be made to act of themselves?

What application is necessary in order to put them into motion?

What are the different kinds of power by which machines are worked?

Give an instance in which human labour is applied.

How is a windmill moved?

What power is applied to the steam engine?

By what means is a large number of grindstones turned in a manufactory?

What takes place when the power is no longer applied to the machine?

181. *Applications of Mechanical Power.*

Machines save ·labour and ·time; a hammer to drive nails is better than a stone or ·a brick; a grindstone is better than a flat stone to put an edge on a chisel. A ·saw is ·superior to an axe for cutting a log of timber into boards, it does the work better and prevents waste. The ·saw-mill cuts faster and better than the hand-saw.

Lesson 182. *Mechanism in Nature.*

Mechanical contrivances are seen in the structure of many ·animals. Our ·limbs are levers with power of motion. The ·arch of a bridge is formed of wedges, so is the arch of the human foot. The ·teeth of animals are cutting instruments. Some insects have screws and piercers with which they can pierce wood or stone.

Lesson 181.

labour—some steam engines perform as much work as 100 horses could do.

time—we can travel as many miles in an hour on a railway as we could walk in a day.

superior—because it does the work more quickly.

prevents—it also saves time and expense.

saw—hand saws were first used, then long saws in saw pits, then horse saw-mills, and then steam saw-mills.

saw-mill—in which both perpendicular and circular saws are employed.

What saving is effected by the employment of machinery?

What amount of labour is performed by some steam engines?

Give an instance in which much time is saved by the use of machinery.

Which is preferable for driving nails, a brick or a hammer?

What mechanical contrivance is better than a flat stone for sharpening a chisel?

Why is a saw superior to an axe for cutting a log of timber into boards?

Show how the saw has been gradually improved.

What kinds of saws are employed in a saw mill?

Lesson 182.

animals—in the short wings of the sparrow, the long ones of the albatross; the paddles of the turtle, the springing power of the tiger; the long legs of the ostrich, the short ones of the duck.

limbs—as the legs, arms, fingers; the power of motion existing in the muscles.

arch—in the arch every stone acts as a wedge, so do the bones forming the arch of the foot.

teeth—some are wedges, others are crushing instruments, others meet like a pair of scissors.

What mechanical contrivances are seen in the structure of many animals?

Give some examples.

Why is the albatross provided with such long wings?

By what contrivance is the turtle enabled to swim well?

What are our limbs?

In what parts does the power of motion exist?

What work of art resembles the natural arch of the human foot?

Of what parts is an arch composed?

What mechanism is exhibited by the teeth of animals?

By what means are some insects enabled to pierce wood or stone?

SECTION XXIII. OF THE SENSES.

Lesson 183. *The Sight.*

We have five senses—·seeing, ·hearing, ·smelling, ·tasting, and ·feeling. The organ of sight is the *eye*. By means of the eye we discern the colours and the forms of objects—the sun, the moon, the stars, the blue sky, the green grass, and the gay flowers. One who cannot see is blind. The blind are much to be pitied.

Lesson 184. *Hearing and Speech.*

The organ of hearing is the ·*ear*. By means of the ear we hear ·noises, and music, and ·speech. Children learn to speak by ·imitating the voices of others. Those who have never heard are ·dumb. The dumb cannot speak because they cannot hear. They make known their wants by pointing to objects, and by signs.

Lesson 183.

seeing—by means of light, objects both near and distant are seen, and the eye can accommodate itself to a very bright light or to a dim one.

hearing—sounds at a considerable distance are brought to our ears by the air.

smelling—to exercise this sense we must be near the object yielding odour.

tasting—the substance must touch the tongue and palate.

feeling—can only be exercised in contact with objects.

Of how many senses are we possessed?
Name the five senses.
Which part of the body is the organ of sight?
By what means is the eye enabled to see objects?
What knowledge is conveyed to our minds through the medium of the eye?
Name some objects both natural and artificial which you can see.
How are sounds brought to our ears?
Which are the organs of taste?
What persons are blind?
How should we regard those persons who are deficient of any of the senses we enjoy?

Lesson 184.

ear—shaped like a trumpet, the outer part widened to collect sounds, the inner part a narrow tube.

noises, &c.—vibrations of sound in the air.

speech—by which means we converse, and impart verbal instruction to the young.

imitating—spoken language is learnt by hearing; the speech of young children, by imitation.

dumb—the organs of speech of the deaf and dumb are perfect; and if they could hear, they would imitate sounds and words like others.

For what purpose is the ear adapted?
What is the shape of the ear?
Of what service is the ear?
What are sounds?
How is speech a means of social benefit?
How do children learn to speak?
Under what affliction do they labour who have never enjoyed the sense of hearing?
Why are the dumb unable to speak?
Are dumb persons possessed of the organs of speech?
What effect would the gift of hearing have upon them?
By what means are the wants of dumb persons made known?

Lesson 185. *The Taste and Smell.*

People ·taste with the tongue and palate, and they ·smell with the nose. The taste and smell help us to discern what things are proper for ·food, and what are improper. Some ·flavours are very distinct. Vinegar is sour, hops are bitter, veal is insipid. Some substances have an agreeable smell, and others are very unpleasant.

Lesson 186. *Feeling or Touch.*

We ·learn whether ·objects are hard or soft, rough or smooth, warm or cool, damp or dry, fine or coarse, sharp or blunt by ·*feeling*. When we have a ·head-ache, or are cut, or struck, or burnt we feel pain. When we are at ease, or when we have sensations which are ·agreeable we feel pleasure.

Lesson 185.

taste—the skin which covers the organs of taste is very delicate, and easily excited by substances having a powerful flavour.

smell—the thin membrane that lines the inside of the nose is very susceptible of the small particles diffused in the atmosphere from odorous substances.

food—whenever we take food, a fluid called saliva is formed in the mouth which moistens the food and assists mastication.

flavours—the pleasures we derive from this sense are owing to the great variety of flavours.

Which is the organ of smell?

Mention the organs of taste.

With what kind of a skin are the organs of taste covered?

How is the inside of the nose admirably adapted for smelling?

In what way are we benefited by the senses of taste and smell?

What difference is there in the flavours of various substances?

Mention some substances that are sweet.—bitter.—sour.—insipid.

Is the odour of every substance the same?

What difference is there between the odour of an onion and that of a rose?

Lesson 186.

objects—their shape, their size, their kind of surface, their temperature, their weight, their hardness or softness; and thus we acquire a knowledge of many of the qualities of objects.

feeling—the hair, nails, and teeth do not possess this sense.

head-ache—or any other feeling produced in the body, as numbness from cold, burning heat moisture from perspiration, &c

agreeable—as when the frame thrills with joy from any gratification of the mind.

What knowledge of external objects do we receive by means of the sense of feeling?

What parts of the human body do not possess the sense of feeling?

What sensation do we feel when we are struck or burnt?

On what other occasions do we feel pain?

What feeling is excited when we are at ease, or have agreeable sensations?

What are the pleasures afforded by the sense of taste?

By what means are we enabled to derive pleasure from music?

Lesson 187. *Use of the Senses.*

The senses are not confined to man, but also exist in other ·animals. The horse learns to know his master, the dog follows the scent of the hare. Animals ·refuse to eat what their smell ·disapproves. Man obtains most of his ·knowledge by means of the senses. He thus acquires ·ideas which language enables him to express.

Lesson 188. *Health.*

Health is ·sustained by food, but people who eat and drink ·too much destroy it. Health is promoted by ·exercise; but those who work too hard, or take too little exercise cannot enjoy health. Air and ·cleanliness are essential to health; but those who live in impure ·air, or who indulge in dirty habits cannot be healthy.

Lesson 187.

animals—many have some one sense in great perfection, but in no other animal are they all so perfect as in man.

refuse—most animal and vegetable substances emit odours by which animals are guided.

disapproves—what is rejected by one animal is frequently eaten by others.

knowledge—particularly that which relates to objects and their qualities.

ideas—even a child who is observant will have its mind stored with ideas which an unobservant child will not possess.

Are the senses confined to man?

On what other creatures are they bestowed?

Which of the senses is possessed by the harrier in great perfection?—the eagle?—the vulture?—the hare?

How are animals guided in the choice of their food?

Show that animals differ from each other in their taste.

What are the means by which man obtains most of his knowledge?

What knowledge in particular is acquired by means of the senses?

How is man enabled to express his ideas?

Lesson 188.

sustained—food is therefore called sustenance.

too much—by overloading the stomach disease is brought on, and health is destroyed.

exercise—some hard working men and women have perhaps too much exercise; boys are often too violent in their exercise; but more people suffer from taking too little, than from taking too much.

cleanliness—without cleanliness there cannot be health.

air—fresh air is as necessary to health as wholesome food.

By what means is health sustained?

Why is food called sustenance?

How is the health of some people impaired?

What bad effects arise from overloading the stomach?

Mention one means of promoting health.

What effect has too much or too little exercise on the body?

Why is it requisite that we should breathe pure air and practise cleanly habits?

What punishment attends the indulgence in dirty habits?

What blessing are they unable to enjoy who live in impure air?

Lesson 189. *Bodily Defects.*

Some people are ·blind, others ·deaf, others are humpbacked, others lame. Some squint, others have clubbed feet or hands. Some men are so tall that they are giants, others are so short that they are dwarfs. People ought not to be either mocked or reproached for their bodily ·defects. Let us rather pity and help them.

Lesson 190. *Diseases.*

When every part of the body acts ·properly we are in health. When some part does ·not act properly we become ill. Sickness is occasioned by ·excessive labour, by want of ·proper food, by breathing ·bad air, and by unhealthy occupations. ·Diseases that are communicated from one person to another are called ·*contagious.*

Lesson 189.

lind—they are instructed in knowledge verbally, and by the use of their other senses they learn many of the qualities of objects, but they have no idea of colour; they are also instructed in mechanical trades.

deaf—they can learn and practise any ordinary trade, but they can only be instructed in language through the sense of sight, while they can acquire knowledge by this and their other senses.

defects—sometimes the result of accident or disease, sometimes existing from birth.

With what bodily defects are some people afflicted?

Of what idea is a person who never saw, totally destitute?

Which of the senses enables the deaf to receive instruction in language?

Show that the deaf are capable of becoming useful members of society.

What are giants?

Who are called dwarfs?

Would it be right to mock or reproach people for their bodily defects?

What disposition ought we rather to exhibit towards them?

Lesson 190.

properly—when food is enjoyed, and digested, and the circulation of the blood is regular.

not properly—when the digestion is weak, or the lungs or heart act irregularly.

excessive—labouring too many hours.

proper food—many are too poor to obtain a sufficient supply, others too idle to work for it.

bad air—inhaling of which corrupts the blood instead of purifying it.

diseases—sometimes brought on by sudden exposure to cold.

contagious—such as itch, small-pox, &c.

In what state are we when every part of the body acts properly?

What happens when the functions of the stomach, heart, or lungs, are not properly performed?

Mention some of the causes by which sickness is occasioned.

What is meant by excessive labour?

What causes prevent some people from obtaining a proper supply of food?

What effect has bad air on the blood?

What diseases are called contagious?

What contagious diseases can you mention?

Lesson 191. *Death.*

The ·senses do not act in a dead body. During life the ·soul is in the body, and the body is sensible. At ·death the soul leaves the body and the body becomes insensible. The body and soul are ·one being. The body is visible, but the soul is ·invisible. The body is *mortal*, the soul is ·*immortal*.

SECTION XXIV. ATTRIBUTES OF GOD.

Lesson 192. *Eternity of God.*

God ·created all things. He created the ·sun, the ·moon, and the stars; the ·heavens and the earth; and all things that are in them. There was a time when the ·only being that existed was God. All creatures fade and ·perish; but God exists for ever. He is from ·everlasting, to everlasting; He is ETERNAL.

Lesson 191.

senses—the eye does not see, nor the ear hear; the body has no sense of smell, nor taste, nor feeling.

soul—while the soul is in the body the senses act.

death—the separation of the soul, the immortal part, from the body, the mortal part.

one being—during life; at death the soul survives the body.

invisible—we cannot see it, though it controls our actions.

immortal—when the body dies the soul enters on a new existence which will endure for ever.

When will the senses cease to act?

For how long is the body sensible?

When does it become insensible?

When does the soul quit the body?

After this separation what is the state of the body?

Of what two parts do we consist?

What is the invisible part of man called?

What is meant by invisible?

What is the visible part of man called?

What influence is exercised over the body by the soul during life?

What becomes of the soul at the death of the body?

Explain mortal.——immortal.

Lesson 192.

created—"all things were made by Him." John i. 3.

sun—He made "the sun to rule by day." Psalms cxxxvi. 8.

moon—"the moon and stars to rule by night." Psalms cxxxvi. 9.

heavens—"the Lord who made heaven and earth." Ps. cxv. 15.

only being—"I am the first and I am the last." Isaiah xliv. 6.

perish—"we must perish but He shall endure." Heb. i. 12.

everlasting—"before the mountains were brought forth, or ever thou hadst formed the earth and the world, even from everlasting to everlasting thou art God." Psalms xc. 2.

Who is the great Creator?

What passage of Scripture declares that God made all things?

For what purpose does the Psalmist say God made the sun?

What luminaries were created to rule by night?

In what words is the eternity of God declared by Isaiah?

In what respect is the nature of every creature different to that of God?

In what words is the eternity of God expressed in Ps. xc. 2?

What is meant by eternal?

Lesson 193. *God Unchangeable.*

Flowers are beautiful, but they ·fade; ·animals become feeble and die. ·Mankind are continually changing from infancy to old age; and all things change. Some people ·weep to-day, and ·rejoice to-morrow; some are ·rich to-day, and ·poor to-morrow; some are in ·health to-day, and ·dead to-morrow. God alone ·NEVER CHANGES.

Lesson 194. *God Almighty.*

·Kings are mighty among mankind, but God is ·mightier than the mightiest kings. Men can ·build strong towers, but they cannot ·create ·stones and clay. They can perform skilful works, and make curious things, but they cannot give them life, sense, and intelligence. God alone can do ·all things. He alone is ·ALMIGHTY.

Lesson 193.

'ade—"we all do fade as a leaf." Isaiah lxiv. 6.

nimals, mankind—"they die and return to their dust." Ps. civ. 29.

veep—being in trouble or sorrow.

'ejoice—feeling pleasure, gratitude, or joy.

'ich—having abundance of worldly goods.

oor—being suddenly deprived of their wealth.

iealth—perhaps not thinking of sickness or death.

lead—death sometimes comes on in a moment.

iever changes—"I am the Lord, I change not." Malachi iii. 6.

Do flowers ever lose their beauty?

What event happens to all animals?

To what short-lived object are we compared by Isaiah?

In what words does the Psalmist speak of the death of mankind and animals?

Mention some of the changes to which mankind is subject.

What other things are the same as man in this respect?

Mention some of the changes to which all mankind are liable.

Who alone never changes?

What is declared respecting the unchangeableness of God in Malachi?

Lesson 194.

kings—the rulers of the earth.

nightier—He is "King of kings."

build—with the materials God has provided, and the intelligence and power he has given them.

'reate—God only can create, He only can bestow life, sense, and understanding.

ll things—"He giveth to all life, and breath, and all things." Acts xvii. 25.

lmighty—"I am the Almighty God." Genesis xvii. 1.

What are kings?

Among whom are they mighty?

Who is mightier than the mightiest kings?

What name has God which distinguishes him from all earthly princes?

Mention some operations which it is possible for men to perform.

How are they enabled to perform them?

Can men create matter?

Who alone can create?

Though men can perform skilful works and make curious things, what properties are they unable to impart to matter?

Who alone is able to do all things?

What is meant by almighty?

Lesson 195. *God Ever-Present.*

All things are ·kept in being by God; things in heaven, and things on the earth. He is the ·Preserver of the universe; and he is ·everywhere present at the same moment. Wherever we go, we may say, "God is in ·this place;" and whatever we do, "Thou God seest me." He is EVER-PRESENT and ·ALL-SEEING.

Lesson 196. *God All-Wise and Good.*

The ·WISDOM of God is seen in the skill displayed in ·creation; and his ·GOODNESS in making all things for the happiness of his creatures. The structure of the ·human body, the constant supply of ·food and raiment, the changes of the ·seasons, and the wonders of the ·heavens declare to us, that ·God is ALL-WISE and GOOD.

Lesson 195.

kept—"thou givest them their meat in due season." Ps. cxlv. 15. "Are not two sparrows sold for a farthing? and one of them shall not fall on the ground without your Father." Matt. x. 29.

Preserver—"thou Lord hast made and preservest them all." Neh. ix. 6.

everywhere—"the darkness hideth not from thee." Ps. cxxxix. 12.

this place—wherever we may be.

all-seeing—"His eyes behold the nations." Ps. lxvi. 7. "He that formed the eye shall he not see." Psalm xciv. 9.

By whom are all things kept in being?

What does the Psalmist say about God's care of his creatures?

In what words is the watchfulness of God over his works set forth by our Saviour?

By whom is the whole universe preserved?

Where is God?

What may we say wherever we go?

By whom are all our actions observed?

What texts prove this?

What attributes of God are illustrated in this lesson?

Lesson 196.

Wisdom—"His understanding is infinite." Ps. cxlvii. 5.

creation—every living creature being formed to enjoy life; and every part of the universe showing the great power and skill of its Maker.

Goodness—"the earth is full of the goodness of the Lord." Ps. xxxiii. 5.

human body—"fearfully and wonderfully made." Ps. cxxxix. 14.

food and raiment—"who giveth food to all flesh." Ps. cxxxvi. 25.

seasons—Genesis viii. 22.

heavens—"the heavens declare the glory of God and the firmament showeth his handy work." Ps. xix. 1, 6.

How is the wisdom of God set forth?

In what words does the Psalmist speak of the understanding of God?

How is the goodness of God displayed?

What is said in the Psalms respecting the goodness of the Lord?

How are the omniscience and goodness of God declared to us?

What does David say respecting the formation of the human body?

What promise did God make to Noah concerning the seasons?

What Scripture text do you remember in which the heavens are said to set forth the glory of God?

Lesson 197. *God Perfect.*

Men have defects of the ·body, o the ·senses, and of the ·mind. All men have ·faults, ·follies, and ·sins of some kind or other. The best men that ever lived had their faults and defects. God alone has no ·imperfection. He is ·PERFECT. The works of man may be improved, but no work of God can be improved; for "his work is perfect."

Lesson 198. *God Just and Merciful.*

God wishes men to ·avoid evil, and to do right. He ·encourages those who have done wrong in striving to do right, by being more ready to ·forgive than to punish. Those who ·continue in sin he will punish ·hereafter, because he is JUST, but those that turn to him, with purpose of heart, he will reward, because he is also MERCIFUL.

Lesson 197.

body—in its form, or deficiency of one or other of its members.

senses—want of sight, or of hearing.

mind—want of understanding.

faults—neglect of duties, thoughtlessness, &c.

follies—arising from want of intelligence or love of trifles.

sins—such as deceit, cheating, theft, &c.

imperfections—all the above defects of character are imperfections.

Perfect—"your Father which is in heaven is perfect." Matt. v. 48.

What defects exist among mankind?

What bodily defects have you seen or heard of?

Of what senses are some people deficient?

What is meant by deficiency of mind?

Why can no man be called perfect?

What are the faults of some people?

Of what sins are some guilty?

Who alone has no imperfection?

How do we express this attribute of God?

What said our Saviour respecting the perfection of God?

Why is it impossible to improve any of God's works?

Lesson 198.

avoid—"abstain from all appearance of evil." 1 Thess. v. 22.

encourages—"Let the wicked forsake his way, and the unrighteous man his thoughts;

forgive—and let him return unto the LORD, and he will have mercy upon him; and to our God, for he will abundantly pardon." Isaiah lv. 7.

continue—he "will by no means clear the guilty." Ex. xxxiv. 7.

hereafter—when "the dead shall be judged according to their works." Rev. xx. 12.

What is the wish of God respecting the actions of men?

What advice did St. Paul give the Thessalonians on this subject?

How are all people encouraged in striving to do right?

What passage in the Bible assures us that God will pardon penitent sinners?

Whom will God punish hereafter?

Why will God punish them?

What did God himself declare to Moses respecting the guilty?

Whom will God reward hereafter?

Why will he reward them?

Lesson 199. *God a Spirit.*

There is only ·one God, and ·no man has ever seen him; he has no bodily parts like man; but he is ·invisible; He is a ·SPIRIT. We can know but ·little of this Great Being. We can see his ·works, and feel gratitude to him for his goodness, but we cannot ·understand how Great, Wise, Merciful, and Good he is to his creatures.

Lesson 200. *God to be Honoured.*

It is our duty to ·HONOUR God at ·all times, and in everything we do; to think, to speak, and to do what is right and just, and avoid all that he forbids. We honour God when we ·love him with all our heart, and all our soul, and all our strength; and when we love our ·neighbours as ourselves.

Lesson 199.

one God—"the first and the last."

no man—"no man hath seen God at any time."

invisible—"the King eternal, immortal, invisible." 1 Tim. i. 17.

spirit—"God is a Spirit." John iv. 24. "A spirit hath not flesh and bones." Luke xxiv. 39.

little—"we see through a glass darkly."

works—the visible creation.

understand—because "his greatness is unsearchable, and his ways past finding out."

Is there only one God or more than one?

Has any living man ever seen God?

What does the Bible say on this subject?

What is God?

Name some text showing that God is a Spirit.

In what respects does a spirit differ from a human being?

With what feelings ought we to regard God's works and goodness?

Why are we unable to comprehend how Great, Wise, Merciful, and Good God is to his creatures.

Lesson 200.

honour—"them that honour me I will honour, and they that despise me shall be lightly esteemed." 1 Samuel ii. 30.

all times—God should be in our thoughts at all times, so that we may habitually think of him and speak of him, and obey his word.

love him—this is declared by Jesus Christ to be the first and great commandment.

neighbours—our Saviour declares that this is the second commandment and calls on his disciples to obey them both.

Why ought we to honour God?

What should be our aim in every thing we do?

Why is it the interest of every one to honour God?

By what rule should our thoughts and words be guided?

What things ought we to avoid?

How may we honour God?

Which is the first and great commandment?

Which is the second?

Who declared this?

On whom does he call to obey both these commandments?

POEMS FOR GRADATION I.

Lessons 1, 2, 3. THE WORKS OF GOD.

God made the sky that looks so blue;
He made the grass so green;
He made the flow'rs that smell so sweet,
In pretty colours seen.

God made the sun that shines so bright,
And gladdens all I see;
It comes to give us heat and light:
How thankful should we be!

God made the pretty bird to fly;
How sweetly has she sung!
And though she flies so very high,
She won't forget her young.

God made the cow to give nice milk;
The horse for me to use;
I'll treat them kindly for his sake,
Nor dare his gifts abuse.

God made the water for my drink;
He made the fish to swim;
He made the tree to bear nice fruit,
Oh, how should I love him!

8. THE BABY.

Come here, my dear boy, look at baby's two hands,
And the two little feet upon which baby stands.
Two thumbs and eight fingers, together make ten:
Five toes on each foot—the same number again.
Two arms and two shoulders, two elbows, two wrists;
Now bend up your knuckles—make two little fists.

Two legs and two ancles, two knees and two hips:
His fingers and toes have all nails on their tips.

With his hands and his feet he can run, walk, or crawl,
He can dance, jump, and caper, or play with his ball:
Take his hoop or his cart, and have a good race,
And that will soon give him a fine rosy face.
Oh! what would my boy do without his two hands?
Or the two little feet upon which he now stands?
They're the kind gifts of God for him to enjoy,
Then be thankful to Him my dear little boy.

14. THE SENSE OF SEEING.

The Lord is good, who gave to me
The sense of sight, for I can see.
I see my father's cheerful look:
He shows me pictures in the book.
I love to climb upon his knee,
And see him sweetly smile on me.
And mother, too, and sister dear,
How many things are pleasant here—
Our baby's face, so soft and bright,
Oh, is not that a pretty sight?

When I go out I see the sky,
And merry little birds that fly;
The houses, and the busy street;
The garden, and the flowers sweet;
The daisied grass, the lofty tree,
The blossoms, and the busy bee.
I see bright colours all around,
In the blue sky, and on the ground;
I see the sun, the cheerful light,
I'll praise the Lord who gave me sight.

22. A LESSON FOR LITTLE ONES.

Say, little child, who gives to thee
Thy life and limbs, so light and free?
Thy moving eyes to look around,
Thy ears to catch the softest sound?
Thy food and clothing, friends and home?
'Tis God from whom those blessings come;
And what shouldest thou do? canst thou guess?
To prove to Him thy thankfulness
For life and friends, for clothes and food?—
"Be good."

And tell me, little one, I pray
Who gives thee pleasure in thy play?
Who makes the happy girl and boy
To run, and leap, and shout for joy,
When looking on the clear blue sky:
The clouds that float, the birds that fly;
Trees, flowers, and every pretty thing?
'Tis God from whom those blessings spring,
And in return what shouldest thou do?
"Be good, and love Him too."

28. WHAT CLOTHES ARE MADE OF.

The pretty sheep gives us the wool from its side,
To make us a jacket to use;
And the dog or the seal must be stript of its hide,
To give us a pair of new shoes.

The grey rabbit also contributes his share,
He helps to provide us a hat;
For this must be made of his delicate hair,
And so we may thank him for that.

And many poor animals suffer besides,
And each of them gives us its share,
Pull off their warm clothes, or give us their hides;
That we may have plenty to wear.

Then as the poor creatures are suffer'd to give
So much to bring comfort to man,
It must be our duty as long as they live,
To do all for them that we can.

30. THE COTTON TREE.

Fair befal the cotton tree!
Bravely may it grow,
Bearing in its seeded pod
Cotton, white as snow.

Spin the cotton into thread:
Weave it in the loom;—
Wear it now, thou little child,
In thy happy home!

Thou *hast* worn it little child,—
Wondrous cotton tree!
Did this paper—did this book
Spring and grow from thee?

Yes! God's gracious gift of mind
Made the cotton tree;
Speed forth knowledge, peace, and love
Over land and sea.

And ten thousand cotton trees
Spring up fresh and fair,
That unwritten thoughts of love
O'er all the world shall bear!

40. GOOD DESIRES.

O that it were my chief delight,
To do the things I ought!
Then let me try with all my might
To mind what I am taught.

Wherever I am told to go
I'll cheerfully obey;
Nor will I mind it much although,
I leave a pretty play.

When I am bid I'll freely bring
Whatever I have got;
And never touch a pretty thing,
If mother tells me not.

When she permits me, I may tell
About my little toys;
But if she's busy or unwell,
I must not make a noise.

And when I learn my hymns to say,
And work, and read, and spell,
I will not think about my play,
But try and do it well.

For God looks down from heaven on high,
Our actions to behold;
And he is pleased when children try
To do as they are told.

42. WORK AND PLAY.

Work while you work, play while you play,
This is the way to be cheerful and gay.

All that you do, do with your might;
Things done by halves are never done right.

One thing each time, and that one done well,
Is a very good rule, as many can tell.

Moments are useless trifled away;
So work while you work, and play while you play.

48. THE FIELDMOUSE.

WHERE the acorn tumbles down,
Where the ash tree sheds its berry,
With your fur so soft and brown,
With your eye so round and merry,
Scarcely moving the long grass,
Fieldmouse, I can see you pass.

Little thing, in what dark den,
Lie you all the winter sleeping?
Till warm weather comes again,
Then once more I see you peeping
Round about the tall tree roots,
Nibbling at their fallen fruits

Fieldmouse, fieldmouse, do not go,
Where the farmer stacks his treasure;
Find the nut that falls below,
Eat the acorn at your pleasure,
But you must not steal the grain
He has stacked with so much pain.

Make your hole where mosses spring,
Underneath the tall oak's shadow,
Pretty, quiet, harmless thing,
Play about the sunny meadow,
Keep away from corn and house,
None will harm you little mouse.

54. THE FOX AND THE CAT.

A FOX and a cat as they travelled one day,
With moral discourses cut shorter the way;

"How great," said the fox, "to make justice our guide!"
"How godlike is mercy," Grimalkin replied.

So onward they journeyed, and moralized still,
Till they came where some poultry picked chaff by a mill.
Sly Reynard beheld them with gluttonous eyes,
And made, spite of morals, a pullet his prize;
A mouse just then chanced from her covert to stray,
Which greedy Grimalkin secured as her prey.
A spider who sat in her web on the wall,
Beheld the poor victims, and pitied their fall.
She cried, "Of such murders how guiltless am I!"
So ran to regale on a new-taken fly.

The faults of our neighbours with freedom we blame,
But tax not ourselves, though we practise the same.

PROVIDENCE. (From the German.)

Each little mouse with eye so clear,
He hath his little mother dear,
Who keeps him warm and brings him bread,
He doth nor cold nor hunger dread.

No poor, dear little bird we see
In garden hop from tree to tree,
But his warm feather clothes has got,
That rain and snow can harm him not.

There is no painted butterfly,
No meanest worm 'neath summer sky
But knows his leaf or fragment flower,
And happy spends his little hour.

No creature in the world we find
But has his portion due assigned,
His clothing, bed, and little home,
Where he may freely go and come.

And who such care for all doth take?
The good God who did all things make,
Who looks on all so tenderly,
And careth day and night for me.

64. BOY, NEST, AND BIRD.

With all my might I make request,
Dear boy, harm not my little nest;
O! do not try to peep therein,
Where lie my little children.
They'll scream with terror and surprise,
If thou show'st them thy large round eyes.

The boy much longed the birds to see,
Yet quietly far off stood he,—
In peace the poor bird reached her nest,
And warmed her young with downy breast,
Then warbled forth her song of joy,
To the kind-hearted little boy.

68. THE RUNAWAYS.

The Nightingale, Swallow, and Swift,
The Wrynecks, and Chiff-chaffs, and Plovers,
Their quarters in Autumn must shift,
Of cold winter weather no lovers.

The Cuckoo in April is heard,
Oh, then he's a merry "new-comer:"
But he is a sun-loving bird,
And stays with us only in summer.

74. BIRDS' FOOD.

Long-legs, hasten away
Cockchafers, leave your play!
The searching Rook for you doth look,
Throughout the livelong day.

Snails with wreathed shell,
Slugs of grove and dell,
The parent Thrush on you will rush,
And bear you off to his cell.

Beetles take to your heels!
Hither the Night-jar steals,
And Moths doth seek, with gaping beak;
He's partial to evening meals.

Flies, both great and small,
The marlet quits the wall;
And Swift and Swallow will swiftly follow,
And they will swallow you all.

Worms, go under the earth;
Grubs, return to your berth;
The Lapwing will take you, and Robin will shake you,
The winter's his time of dearth.

Ants, in clustering hills,
Fear the Partridge's bills;
They hunt in the stubble, to work you trouble,
And each has a beak that kills.

Bees, take care of yourselves;
Tits are ravenous elves,
The bee-eating bird I lately heard,
Where into the bank she delves.

At sound of the Cuckoo's voice
No insects need rejoice;
Cuckoo! Cuckoo! He's coming for you;
Of grubs he takes his choice.

Glow-worms, hide your light;
The warbling bird of night
On you will sup! He'll gobble you up;
You'd better not shine so bright.

Spiders, scamper away;
Off with your eggs, I pray;
The Woodpecker's drumming—he soon will be coming;
He'll find where your nests you lay.

Gnats that wheel and flit,
Beware of little Tomtit;
'Tis not for the fruit that Fly-catcher mute
On yonder bough doth sit.

Dragon-flies brightly blue!
Kingfisher hawks for you;
See, over the stream, like a rainbow gleam,
She's hovering now in view.

Creatures that live in the sludge,
Jack Snipe will poke and drudge;
The mire he'll rout, till he turns you out,
And who his fare would grudge?

Hop away, croaking Frog,
The Bittern is come to the bog;
The Bittern that booms in the evening glooms,
As loud as the baying dog.

Fish of river and lake,
The Heron comes out of the brake;
His neck's doubled back, but he means to attack,
He'll cause you to quail and quake.

Fish of sea and ocean,
The Osprey's loud commotion,
Her downward dash, and sputter and splash,
Must frighten you, I have a notion.

80. TREES.

The Oak is called the king of trees,
The Aspen quivers in the breeze,
The Poplar grows up straight and tall,
The Peach-tree spreads along the wall,
The Sycamore gives pleasant shade,
The Willow droops in watery glade,
The Fir-tree useful timber gives,
The Beech amid the forest lives.

FRUIT.

The Nectarine on yonder wall
  Grows red, when ripened fully;
The ruddy Peach admired by all,
  Is somewhat rough and woolly;
The Apricot of amber hue,
  In tarts the taste delighting;
And purple Plum, so fair to view,
  Are equally inviting.

86. THE VIOLET.

Down in a green and shady bed,
  A modest violet grew,
Its stalk was bent, it hung its head,
  As if to hide from view.

And yet it was a lovely flow'r,
  Its colours bright and fair:
It might have graced a rosy bow'r,
  Instead of hiding there.

Yet there it was content to bloom
  In modest tints array'd:
And there diffused its sweet perfume
  Within the silent shade.

Then let me to the valley go,
  This pretty flow'r to see;
That I may also learn to grow
  In sweet humility.

90. BUTTERCUPS AND DAISIES.

Buttercups and daisies, oh, the pretty flowers;
Coming ere the spring-time, to tell of sunny hours.
While the trees are leafless; while the fields are bare,
Buttercups and daisies spring up here and there.

Ere the snow-drop peepeth; ere the crocus bold;
Ere the early primrose opes its paly gold,
Somewhere on a sunny bank buttercups are bright;
Somewhere 'mong the frozen grass peeps the daisy white.

Little hardy flowers like to children poor,
Playing in their sturdy health by their mother's door,
Purple with the north wind, yet alert and bold;
Fearing not and caring not, though they be a-cold!

What to them is weather! what are sunny showers.
Buttercups and daisies are these human flowers,
He who gave them hardship and a life of care,
Gave them likewise hardy strength, and patient hearts to bear.

Welcome yellow buttercups, welcome daisies white,
Ye are in my spirit visioned, a delight!
Coming ere the spring-time of sunny hours to tell—
Speaking to our hearts of Him who doeth all things well.

96. THE MINERALS.

Limestone and sand—gravel and clay—
Are under our feet;—dig, dig away.

Iron and lead—copper and tin—
Silver and gold;—dig deeper in.

Flint for our glass—clay for our bricks—
Slate for our roofs;—sharpen the picks.

Brimstone for matches—salt for our food—
Coal for our firing;—better than wood.

Diamonds bright—emeralds, and rubies,
Will not be found by idlers and boobies

Dig, dig away—who would be poor?
Hard work, I say, is the true Koh-i-noor.

108. THE CRUST OF BREAD.

I MUST not throw upon the floor
The crust I cannot eat;
For many little hungry ones
Would think it quite a treat.

For wilful waste makes woeful want,
And I may live to say,
Oh, how I wish I had the bread
That once I threw away.

110. THE LITTLE STAR.

TWINKLE, twinkle little star,
How I wonder what you are,
Up above the world so high,
Like a diamond in the sky.

When the blazing sun is gone,
When he nothing shines upon,
Then you show your little light,
Twinkle, twinkle, all the night.

Then the traveller in the dark,
Thanks you for your tiny spark;
He could not see which way to go,
If you did not twinkle so.

In the dark blue sky you keep,
While you through my curtains peep,
And you never shut your eye,
Till the sun is in the sky.

116. WARNINGS OF THE WEATHER.

You rail at the sky when 'tis low'ring and dark,
Then clouds on your brow let us never remark.
You rail at the weather, unsettled and changing,
Then pray don t be fickle, unsteady, and ranging.

"O what a loud noise!" you exclaim, at the thunder;
Then pray, my dear boy, learn to keep your voice under.
The flashes of lightning, you cry, are appalling;
Then don't look so fierce when you're squabbling and squalling

You fret at the weather, when sultry and burning;
Then don't be hot-headed, all temperance spurning.
A very hard winter is not to your mind;
Then don't be hard-hearted, and cold, and unkind.

You pout when the weather is misty and hazy;
Then pray don't be sulky, and stupid, and lazy.
You dislike all day long to see torrents of rain;
Then don't blubber and cry if you feel a slight pain.

Loud, boisterous storms you can never away with;
Then don't be so rough with the boys that you play with.
You shudder to hear the loud hurricane roar;
Then, pray, let us see naughty passions no more.

120. TIME AND ETERNITY.

How long sometimes a day appears!
And weeks—how long are they!
Months move as slow as if the years
Would never pass away.

But even years are passing by,
And soon must all be gone;
For day by day as minutes fly,
Eternity comes on;

Days, months, and years, must have an end,
Eternity has none;
'Twill always have as long to spend
As when it first begun.

Great God! although I cannot tell
How such a thing can be,
I humbly pray that I may dwell
That long, long time with Thee.

124. LAPLAND.

"With blue cold nose and wrinkled brow,
Traveller, whence comest thou?"

'From Lapland's woods and hills of frost
By the rapid reindeer crost;
Where tap'ring grows the gloomy fir,
And the stunted juniper;

Where the wild hare and the crow,
Whiten in surrounding snow;
Where the shiv'ring huntsmen tear
His fur coat from the grim white bear.

Where the wolf and arctic fox
Prowl among the lonely rocks;
And tardy sun, to deserts drear
Give days and nights of half a year;

—From icy oceans, where the whale
Tosses in foam his lashing tail;
Where the snorting sea-horse shows
His ivory teeth in grinning rows;

Where, tumbling in their seal-skin boat,
Fearless the hungry fishers float,
And from the teeming seas supply
The food their niggard plains deny.'

133. LOVE AND DUTY TO PARENTS.

My father, my mother, I know
I cannot your kindness repay;
But I hope that, as older I grow,
I shall learn your commands to obey.

I am sorry that ever I should
Be naughty, and give you a pain;

I hope I shall learn to be good,
And so never grieve you again.

But lest, after all, I should dare
To act an undutiful part,
Whenever I'm saying my prayer,
I'll ask for a teachable heart.

136. EMPLOYMENTS.

The sun rises bright in the air,
The dews of the morning are dry,
Men and beasts to their labours repair,
And the lark wings his way to the sky.
Now, fresh from his moss-dappled shed,
The husbandman trudges along,
And like the lark over his head,
Begins the new day with a song.

Now winding along on the road,
Half hid by the hedges so gay,
The waggon drags slow with its load,
And its bells tinkle, tinkle away.
The husbandman follows his plough,
Across that brown fallow-field's slope,
And toils in the sweat of his brow,
Repaid by the pleasures of hope.

The city, so noisy and wide,
Begins to look smoky and grey;
Now bus'ness, and pleasure, and pride,
March each in a different way.
The merchant, with dignified look;
My lord, and my lady so fair;
The school boy, with satchel and book
And all to their bus'ness repair.

144. HURRAH FOR ENGLAND.

HURRAH! hurrah for England!
Her woods and valleys green;
Hurrah for good old England!
Hurrah for England's Queen!

Good ships be on her waters,
Firm friends upon her shores,
Peace, peace within her borders,
And plenty in her stores.

Right joyously we're singing,
We're glad to make it known,
That we love the land we live in,
And our Queen upon her throne.

Then hurrah for merry England
And may we still be seen
True to our own dear country,
And loyal to our Queen!

158. GOOD THINGS FROM AFAR.

TEA is brought from China;
Rice from Carolina,
India, and Italy—
Countries far beyond the sea.

Coffee comes from Mocha;
Wholesome Tapioca
Is from the West Indies brought.
Where the humming birds are caught.

That same land produces
Fruits of richest juices;
Shaddocks, Oranges, and Limes,
Ripen in those sunny climes.

Who would get the Sago
Far as India may go;
There the Cocoa-nuts are growing,
There the skies are fiercely glowing.

Indigo for dyeing
Is of her supplying;
Lofty Palms you there may view,
With the feathery bamboo.

Pepper which so nice is,
Cloves, and other spices,
We receive from Indian Isles,
Distant many thousand miles.

Sugar so delicious,
Arrow-root nutritious,
Are convey'd, I here protest,
From the Indies, East and West.

Plantain and Banana
Grow in hot Guiana;
There the Chocolate is found—
Parrots in the woods abound.

White and fleecy Cotton
Grows full many a spot on
In North and South America,
India and Africa.

176. COUPLETS.

'Tis education forms the common mind,
Just as the twig is bent, the tree's inclined.

The skies, the air, the morning breezes call,
Alike are free, and full of health to all.

He who is master over little things,
Is mightier in command than many kings.

The heart within its hidden cells enfolds
More than the teeming world without it holds.

Each climate needs what other climes produce,
And offers something for the general use.

184. THE SENSES.

Say what is it, Eyes, ye see?
Shade and sunshine, flower and tree;
Running waters swift and clear;
And the harvests of the year.
These we see, and for the sight,
Bless the Giver infinite.

Tell me, Ears, what ye have heard?
Many and many a singing bird;
Winds within the tree-tops going;
Rapid rivers strongly flowing.
Awful thunder; ocean strong,
And the kindly human tongue,
These and more an entrance find
To the chambers of the mind.

Tell me, busy Hands, I pray,
What ye're doing through the day?
Ever working, never still,
We are servants to the will.
Busy hands, whate'er ye do,
Still keep peace and love in view.

188. CHILD'S PRAYER IN SICKNESS.

Since, mighty God, my health and ease,
And life, belong to thee,
I might not murmur shouldst thou please
To take them all from me.

Thou hast a right to use thy rod,
Which I should meekly bear;
And yet I may entreat that God
A sinful child would spare.

I own the comforts, I possess,
And thank thy care of me,
While thousands languish in distress,
And pine in poverty.

Yet look in pity on my pain;
My little strength restore;
And grant me life and health again,
To serve thee evermore.

192. GOD OUR GUARD.

God—that Great God who made us,
And keeps us by his pow'r;
Whose arms of mercy shade us,
And guard us ev'ry hour;

Who form'd each sea and river,
Each flow'r and field and tree,
The kind and gracious giver
Of ev'ry good we see;—

That God is near to guide us,
By day or darksome night,
And nothing can divide us
From his all-piercing sight:

Whatever may be near us,
We have no cause for fear;
And this one thought may cheer us—
Our God, our Guard is near.

194. GOD MADE ALL THINGS.

God made the sun, that world of light,
The moon to cheer the earth by night,
The spacious firmament on high,
And all the stars that gild the sky.

He made the earth on which we tread,
And round its shores the ocean spread;
He made the seasons of the year,
And all the numerous fruits they bear.

He made the birds which sing so sweet,
The little lambs to frisk and bleat,
The playful fishes in the stream,
And beasts of every size and name.

'Tis through his kind and gracious care
We see and feel, and speak and hear,
He made our soul, that better part,
And all our powers of head and heart.

His pity sent his only Son
To die for sins which we have done;
His grace, we trust will make us meet
To dwell for ever near his seat.

196. "OUR FATHER."

Great God, and wilt thou condescend
To be my Father and my friend?
I a poor child, and thou so high,
The Lord of earth, and air, and sky?

Art thou my Father?—Canst thou bear
To hear my poor imperfect prayer?
Or wilt thou listen to the praise
That such a little one can raise?

Art thou my Father?—Let me be
A meek obedient child to thee;
And try in word, and deed, and thought
To serve and please thee as I ought.

Art thou my Father?—I'll depend
Upon the care of such a Friend;
And only wish to do and be,
Whatever seemeth good to thee.

Art thou my Father?—Then, at last,
When all my days on earth are past,
Send down and take me in thy love,
To be thy better child above.

198. A CHILD'S HYMN.

Must little children love the Lord?
Must little infants often pray?
And will God mind the very words
That little children say?

Oh yes! if truth be in the pray'r,
And children wish the words they say,
Then God will surely bless them there,
And love them ev'ry day.

As on their little beds they lie
They think of heav'n and sweetly say,—
"My Saviour! hear me when I cry,
And make me good to-day.

E'en in my play be near me still;
My heav'nly Father think on me;
Teach me to do thy holy will,
And draw my thoughts to thee."

Thus little children love the Lord;
Thus little infants sometimes pray;
And then God minds the very words
That little children say.

200. "GOD IS LOVE."

I CANNOT always trace the way
Where thou Almighty One! dost move,
But I can always, always, say
That GOD is love!

When fear her chilling mantle flings
O'er earth—my soul to Heaven above,
As to her sanctuary springs,
For GOD is love.

When mystery clouds my darken'd path
I'll check my dread, my doubts reprove,
In this my soul sweet comfort hath
That GOD is love.

The entanglement which restless thought
Mistrust and idle reasonings move:
Are thus unravelled and unwrought,
For GOD is love.

ON PRAYER.

I OFTEN say my prayers,
But do I ever pray?
Or do the wishes of my heart
Dictate the words I say?

'Tis useless to implore,
Unless I feel I need;
Unless 'tis from a sense of want
That all my prayers proceed.

I may as well kneel down
And worship gods of stone,
As offer to the living GOD
A prayer of words alone.

Lord, teach me what I want,
And teach me how to pray;
Nor let me e'er implore thy grace,
Not heeding what I say!

A CHILD'S EVENING PRAYER.

ERE on my bed my limbs I lay
GOD grant me grace my prayers to say;—
O GOD! preserve my mother dear
In strength and health for many a year;
And oh! preserve my father, too,
And may I pay him reverence due,—
And may I my best thoughts employ
To be my parents' hope and joy;
And oh! preserve my brothers both
From evil doings and from sloth,
And may we always love each other,
Our friends, our father, and our mother;
And still, O Lord, to me impart
An innocent and grateful heart,
That after my last sleep I may
Awake to thy eternal day! Amen.

HYMN.

HAPPY little children! we
Raise the hand and bow the knee;
We are taught that when we pray
The good GOD hears what children say.

We may ask for all we want,
We may ask and he will grant
All his wisdom sees is best,
Kindly he'll deny the rest.

I would not wish to have what he
Knows is really bad for me;
But I should ask to be his mild,
Obedient, loving little child.

"Saviour! change my careless heart,
Make it new in every part;"
I cannot pray a better pray'r,
For sin is sadly busy there.