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Mr. Davenport's Improved Edition of Mrs. Paul's

QUESTIONS AND ANSWERS
ON
USEFUL
AND
INTERESTING SUBJECTS.

ADAPTED TO THE CAPACITIES OF YOUNG CHILDREN.

BY MRS. PAULL.

FIFTY-SIXTH THOUSAND.

LONDON:

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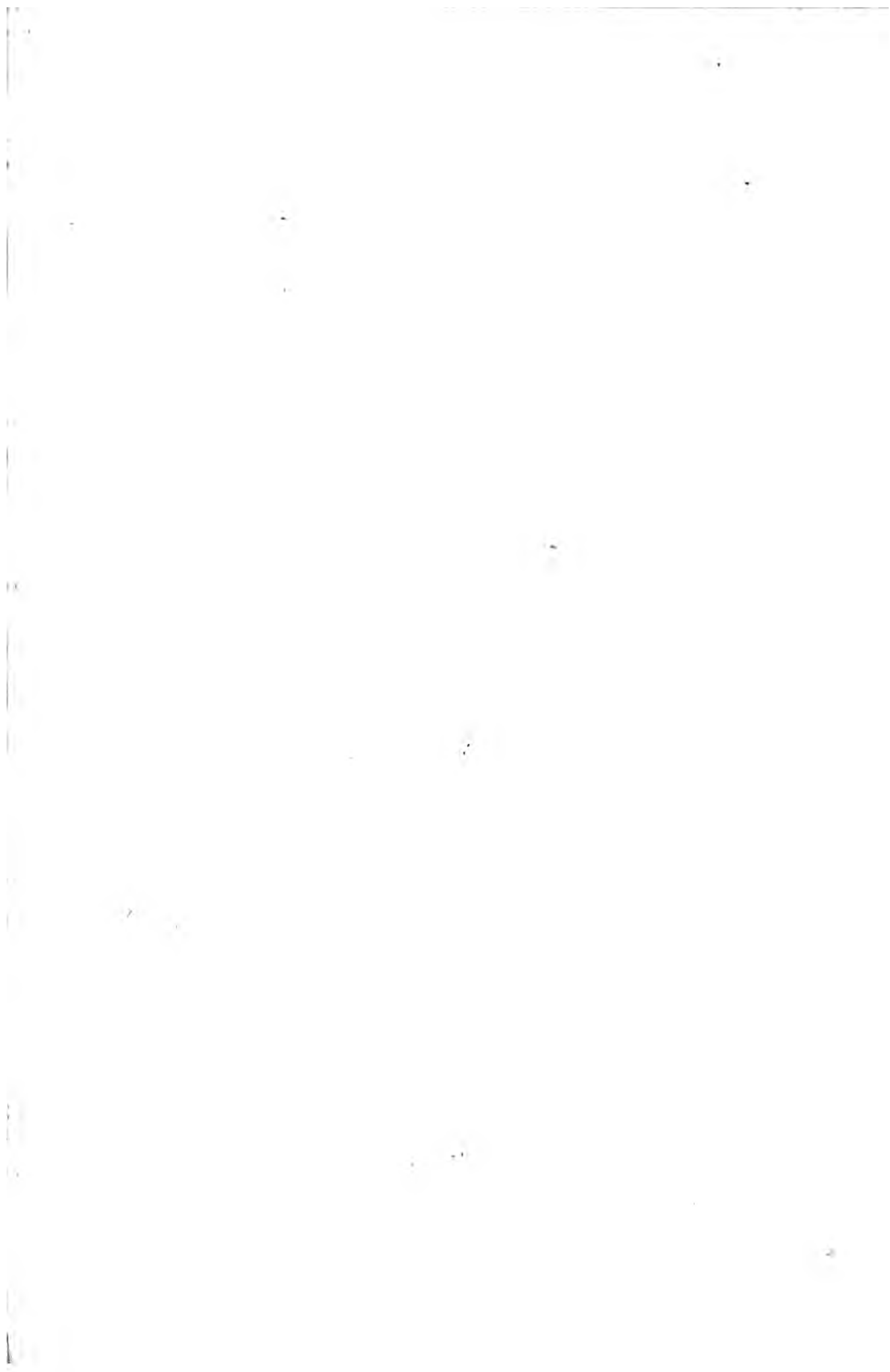
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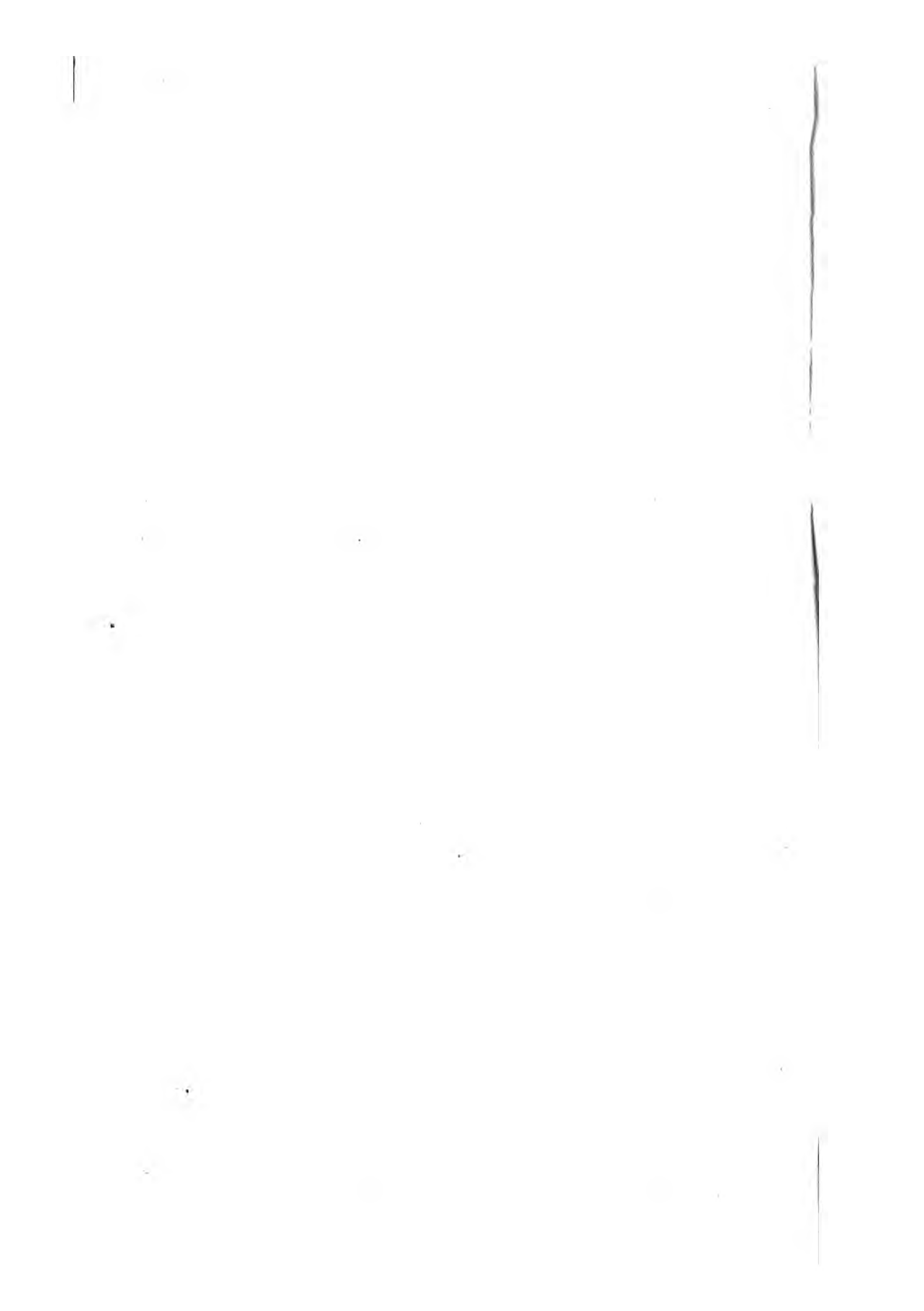
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BY
SUSANNA MARY PAULL,
AUTHOR OF CATECHISMS OF THE HISTORIES OF ROME, OF GREECE
AND OTHER SUBJECTS, FOR YOUNG CHILDREN.

NEW AND REVISED EDITION.

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A continuation of most of the Subjects requiring further elucidation is given in the Author's

*“First Principles of General Knowledge,”
the Eighth Edition of which is now published.*

PREFACE.



THE extreme simplicity, and almost childish expressions, used by the author in the following little work, induces her to attempt some apology, which she hopes may be deemed sufficient.

From a long and intimate acquaintance with the reasoning faculties, understandings, and memories of very young children, the author does not hesitate to say, that it is most difficult to procure any book in which the subjects and the manner of explanation come within their reach. Frequently, indeed, the subjects are simple, and Dr. Blair's Mothers' Catechism is an excellent specimen; but with all due deference to the merits of that excellent work, and others of equal claims, it must be admitted that,

in many instances, the answers to questions on simple subjects are much too long, and beyond the capacities of very young children. We will suppose, for instance, a child of three or four years asks its parent in its own simple style, "Mamma, what is tea?" Would the parent's reply be—"Tea, my dear child, is a chemical process, produced by the influence of boiling water on the soluble particles of tea." Would the child understand this explanation? Certainly not. Yet this sort of language we often meet with in children's books, making the task of committing the answer to memory infinitely more tedious than acquiring the knowledge it is intended to convey; something upon the same principle as the old-fashioned custom of making boys learn the rules of the Latin in Latin, before they knew anything of the language.

It may be suggested, that by learning the answers to questions in the most elegant form, children are acquiring a correct knowledge of words: this we admit; but at the same time it will not be denied. that a

knowledge of any subject is certainly necessary before we attempt to speak elegantly or correctly upon it; and therefore it seems preferable for children, at a very early age, to acquire a knowledge of subjects in a familiar easy style, and of a character so far interesting, that they may be stimulated as they grow older, to search further into them: at the same time they should have books for improvement in reading only, in which the style and the language are elegant and correct; but those for information, whether to be read or committed to memory, should be as simple as it is possible to make them.

Besides, nature herself teaches us that children acquire their first ideas in monosyllables; and if a child is questioned on any subject which he perfectly understands, and allowed to express himself in his own words, the answer will consist almost entirely of monosyllables. And will it be denied that such an answer is preferable to an acquired yet elegant phraseology, which he neither understands nor appreciates?

It appears therefore desirable for children

to acquire knowledge in language which they perfectly understand, and in short easy sentences which can easily be committed to memory; and this has been the author's aim in her little work; and if, at the same time, they acquire a taste for general knowledge, which shall induce them, as they advance in life, to study for themselves, her hopes and intentions will be fully accomplished.

NOTE TO THE SIXTIETH THOUSAND.

THE continued favour which this little work receives has necessitated the production of another edition. The opportunity has been used to make some few alterations and corrections where statements were obsolete through improved methods of manufacture or recent discoveries of science.

PART I.

Subjects necessary to be known by Children at a very early Age.

CHAPTER I.

Q. How many days are there in a week?

A. Seven.

Q. What are their names?

A. Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday.

Q. How many months in a year?

A. Twelve.

Q. What are their names?

A. January, February, March, April, May, June, July, August, September, October, November, and December.

Q. How many seasons are there?

A. Four.

Q. What are their names?

A. Spring, Summer, Autumn, Winter.

Q. How many quarter days are there?

A. Four.

Q. What are their names?

A. Lady-day, Midsummer-day, Michaelmas-day, and Christmas-day.

Q. When is Lady-day?

A. The 25th of March.

Q. When is Midsummer-day?

A. The 24th of June.

Q. When is Michaelmas-day?

A. The 29th of September.

Q. When is Christmas-day?

A. The 25th of December.

Q. Which is the longest day of the year.

A. The 21st of June.

Q. Which is the shortest day?

A. The 21st of December.

Q. How many days are there in a year?

A. Three hundred and sixty-five.

- Q. How many weeks in a year?
 A. Fifty-two.
- Q. How many hours in a day and night?
 A. Twenty-four.
- Q. How many minutes in an hour?
 A. Sixty.
- Q. What stands for one o'clock? I.
 Q. What for two o'clock? II.
 Q. What for three o'clock? III.
 Q. What for four o'clock? IV.
 Q. What for five o'clock? V.
 Q. What for six o'clock? VI.
 Q. What for seven o'clock? VII.
 Q. What for eight o'clock? VIII.
 Q. What for nine o'clock? IX.
 Q. What for ten o'clock? X.
 Q. What for eleven o'clock? XI.
 Q. What for twelve o'clock? XII.
 Q. What stands for twenty? XX.
 Q. What for thirty? XXX.
 Q. What for forty? XL.
 Q. What for fifty? L.
 Q. What for sixty? LX.
 Q. What for seventy? LXX.
 Q. What for eighty? LXXX.

- Q. What stands for ninety? . XC.
- Q. What for one hundred? . C
- Q. What for five hundred? . D
- Q. What for one thousand? . M.
- Q. How many days are there in each month?
- A. Thirty days are in September,
April, June, and November;
February hath twenty-eight alone,
And all the rest have thirty-one;
But leap year coming once in four,
Gives February one day more.
- Q. What do you mean by leap year?
- A. Every fourth year is called leap year.
- Q. Is leap year longer than others?
- A. Yes; leap year has three hundred and sixty-six days instead of three hundred and sixty-five.
- Q. How many cardinal points are there?
- A. Four.
- Q. What are their names?
- A. North, south, east, and west
- Q. Where does the sun rise?
- A. In the east.

Q. Where does the sun set?

A. In the west.

Q. Where is the sun at twelve o'clock?

A. In the south.

Q. When is noon?

A. Twelve o'clock in the day.

Q. When is midnight?

A. Twelve o'clock at night.

*(Subject continued on page 1 of Paull's Principles of
[Knowledge.]*

CHAPTER II.

On the Value of different Pieces of Money.

Q. How many farthings are equal to
a penny?

A. Four.

Q. How many pence in a shilling?

A. Twelve.

Q. How many shillings in a florin?

A. Two shillings.

Q. How many in a crown?

A. Five. Two shillings and sixpence
is called half-a-crown.

Q. How many shillings in half-a-
sovereign?

A. Ten shillings.

Q. How many shillings make a sovereign?

A. Twenty.

Q. What is a guinea?

A. A coin no longer used. When a guinea is spoken of, twenty-one shillings is meant, or a sovereign and a shilling.

CHAPTER III.

On Weights and Measures.

Q. How many ounces make a pound of meat?

A. Sixteen.

Q. How many ounces make a pound of gold or silver?

A. Twelve.

Q. Are there not sixteen ounces in a pound of tea or sugar?

A. Yes; and also in almost everything we use for food.

Q. Are not coals weighed by the same weight?

A. Yes; one hundred weight is one hundred and twelve pounds, and twenty hundred weight make a ton.

Q. What things can you tell me of that are measured?

A. Beer, wine, milk, and all liquids.

Q. How many pints make a quart?

A. Two.

Q. How many quarts make a gallon?

A. Four.

Q. Are there different measures for these things?

A. Yes; one is called wine measure; it is different to ale and beer measure.

Q. What measure were fruit and vegetables measured by?

A. Dry measure. They are now generally weighed.

CHAPTER IV.

On different Articles used for Food.

Q. What is bread made of?

A. Flour.

Q. What does flour come from?

A. Wheat or corn.

Q. Where does corn grow?

A. In the fields.

Q. How is it made into flour?

- A. It is ground by the miller.
- Q. What is butter made of?
- A. Cream.
- Q. What is cream?
- A. The best part of milk.
- Q. Where do we get milk?
- A. From the cow.
- Q. What is cheese made of?
- A. The curd of milk.
- Q. What does sugar come from?
- A. The sugar cane.
- Q. Where does the sugar cane grow?
- A. In the West Indies.
- Q. What is tea?
- A. The dried leaves of a shrub.
- Q. Where does the tea-plant grow?
- A. In China.
- Q. What is coffee?
- A. The berry of a tree.
- Q. Where does the coffee-tree grow?
- A. In Arabia, Turkey, the West Indies, and many other places.
- Q. What is done to coffee before we can use it?
- A. It is ground to powder in a coffee mill.

Q. Are not cocoa and chocolate sometimes used instead of coffee or tea?

A. Yes; chocolate is made from the seed of the cacao-tree.

Q. What is vinegar?

A. An acid made from wine, beer, etc.

Q. What is pepper?

A. The seed of a plant ground into powder; and so is mustard.

Q. Where does pepper grow?

A. In the East Indies. Mustard grows in England.

Q. What is ginger?

A. The creeping stem of a plant.

Q. Where does it grow?

A. It grows wild in the East and West Indies.

Q. What do you mean by spices?

A. Nutmegs, cloves, cinnamon, and mace are called spices.

Q. Where do they grow?

A. In the Molucca Islands, Ceylon, and Java.

Q. What are the Molucca Islands sometimes called?

A. The Spice Islands.

- Q. What is mace?
- A. The shell of the nutmeg.
- Q. What is cinnamon?
- A. The bark of the cinnamon-tree.
- Q. What is rice?
- A. A white grain used for food.
- Q. Where does it grow?
- A. In Egypt, China, the West Indies, and all hot climates.
- Q. Are not millet, sago, and arrow-root used for puddings?
- A. Yes; they are all brought from countries a long way off.
- Q. What is sago?
- A. The pith of a palm-tree.
- Q. What is the pith?
- A. That part of the tree which is inside the stalk or stem.
- Q. What is salt?
- A. A substance found in mines, and procured from the sea water.
- Q. What is beer made from?
- A. Malt and hops.
- Q. What is malt made of?
- A. Barley.
- Q. What is wine?

A. The fermented juice of grapes.

Q. Is not wine sometimes made of other fruit ?

A. Yes ; in England wine is made of currants, raspberries, gooseberries, ginger, and many other substances.

Q. What is meat ?

A. The flesh of animals.

Q. What is the flesh of an ox called ?

A. Beef.

Q. Of a sheep ?

A. Mutton.

Q. Of a pig ?

A. Pork.

Q. Of a calf.

A. Veal.

Q. What is game ?

A. The flesh of wild animals and birds.

Q. Tell me the names of some ?

A. Hares, wild rabbits, pheasants, partridges, and many others.

Q. What is venison ?

A. The flesh of deer.

Q. What vegetables do we mostly eat ?

A. Potatoes, greens, cabbages, lettuces,

turnips, carrots, celery, radishes, and many others.

Q. Where do they all grow?

A. In England. They are very necessary to health.

Q. Tell me the names of some fruit that grows in England.

A. Apples, pears, plums, currants, gooseberries, cherries, strawberries, raspberries, and damsons.

Q. Are there not other fruits less plentiful?

A. Yes; peaches, nectarines, apricots, and purple and white grapes.

Q. But have we not other fruit besides these?

A. Yes; but they are foreign.

Q. Mention some of them.

A. Oranges, lemons, citrons, raisins, plums, dried currants, figs, dates, prunes, and tamarinds.

Q. Where do oranges and lemons chiefly grow?

A. The best come from the islands of Africa, but they are sometimes made to grow in hothouses in this country.

Q. What are raisins ?

A. Dried grapes. They are grown very largely in Spain ; from Malaga comes the larger and finer kind.

Q. Are these used for plum puddings ?

A. No, they are used for dessert ; the kind used for plum puddings come from Valencia, also in Spain.

Q. What are currants ?

A. Small grapes growing in Corinth, and were once called Corinthian grapes, and from Corinthian it was soon altered to currants.

Q. Where do prunes come from ?

A. Generally from the south of France ; dates, tamarinds, and dried figs come from different parts of Asia.

Q. What are pine apples ?

A. A very large fruit which grows in the West Indies, and any similar climate.

(Continued on pages 50 and 102 of Paull's Principles.)

CHAPTER V.

Of the House we live in.

Q. What are houses built of ?

A. Bricks, mortar, wood, and stone.

Q. What are bricks made of ?

A. Clay and ashes mixed with water, and burnt hard in a fire.

Q. What is mortar made of?

A. Lime, sand, and water.

Q. What is the wood generally used in building houses?

A. Deal.

Q. What tree is deal cut from?

A. The fir-tree.

Q. Where does the best deal come from?

A. Norway.

Q. Where do stones come from?

A. They are dug out of the ground.

Q. What are the places from which stones are dug?

A. Quarries.

Q. What are the principal parts of a house?

A. The foundation, the walls, and the roof.

Q. What other parts can you tell me of?

A. The windows, the doors, the rooms, the stairs, the fire-places, and the chimneys.

- Q. What are the windows made of?
 A. Wood and glass.
- Q. What are the doors and stairs made of?
 A. Of wood; the hinges of doors are made of iron, and the locks and handles generally of brass.
- Q. What are stoves or fire-places made of?
 A. Of iron and steel.
- Q. What do we make fires of?
 A. Wood and coals.
- Q. Where do coals come from?
 A. They are dug out of the mines.
- Q. What are walls of rooms covered with?
 A. With paper that has had pretty flowers and colours painted on it.
- Q. If the walls are covered with wood, what is it called?
 A. Wainscot, and then it is painted different colours.
- Q. What is the top of a room called?
 A. The ceiling.
- Q. What are the different names given to houses?

A. Large houses are called mansions ; the Queen's house is called a palace.

Q. What are small houses called ?

A. Gentlemen's small houses are called villas, and some that poor people live in are called cottages and huts.

Q. Are all cottages built for poor people ?

A. No : some are very handsome buildings, and are called cottages because they are small.

Q. How are the roofs of houses covered ?

A. With tiles made of slate or brick.

Q. What are poor people's cottages in the country sometimes covered with ?

A. With straw ; and then they are called thatched cottages.

CHAPTER VI.

On the Furniture of a House.

Q. Before we can live in a house what must we put in it ?

A. Furniture : as chairs, tables, bedsteads, and beds.

Q. What are chairs and tables made of?

A. Of deal, oak, and birch; also of mahogany and rosewood.

Q. Are not bedsteads made of deal and mahogany?

A. Yes: and sometimes of iron.

Q. What are bed and window curtains made of?

A. Printed calico, called chintz.

Q. What else?

A. Of a stuff called moreen; but the best are made of damask, velvet, and muslin.

Q. What other things are made of damask or moreen?

A. The seats of chairs and sofas sometimes.

Q. What are they covered with to keep them clean?

A. With covers made of chintz, because it can be washed.

Q. What are beds made of?

A. Of a stuff called ticking, which is sown together, and filled with feathers.

Q. Where do we get the feathers?

A. From different birds; but the best are from geese; the small soft feathers of the breast are called down; they are used sometimes to make very soft beds, called down beds.

Q. What are seats of chairs and sofas stuffed with?

A. With horsehair, and sometimes with soft wool.

Q. What are mattresses?

A. Ticking stuffed with wool or horsehair: they are not so soft as feather beds.

Q. What is the furniture of a drawing room or parlour besides tables and chairs?

A. Carpets, hearth-rugs, fenders, fire-irons, looking-glasses, and many things for ornament.

Q. What are carpets made of?

A. They are made of wool, spun and dyed different colours.

Q. What towns in England are famous for carpets?

A. Kidderminster and Axminster; but the best come from Turkey and Brussels.

Q. What are the fender and fire-irons made of?

A. Iron and polished steel.

Q. What are picture and looking-glass frames made of?

A. Frames are made of carved wood, stained, painted, or covered with gold leaf.

Q. What is looking-glass?

A. Glass on which quicksilver has been placed; it is the quicksilver which enables us to see things in looking-glasses, reflecting as it does whatever object is placed before it.

Q. What articles are used for breakfast?

A. The tea and coffee-pots, cups, saucers, and spoons.

Q. What are cups and saucers made of?

A. Of earthenware, but the best are made of china.

Q. What are the tea and coffee-pots made of?

A. Of blocked tin, or of metal made of tin and lead mixed.

Q. What is metal sometimes covered with?

A. With silver, then it is called plated.

Q. Are not saucepans and tea-kettles sometimes made of tin?

A. Yes, but the strongest are made of iron.

Q. What are spoons made of?

A. Common ones of metal or iron, but the best are plated or silver.

Q. What articles are used at the dinner table?

A. Plates, dishes, knives and forks, and many other things which are made of glass.

Q. What is glass made of?

A. Flint, sand, soda, and other things melted in a furnace.

Q. What sort of glass are beer and wine glasses made of?

A. The second best kind, and so is everything used at table. Looking-glasses are made of plate glass, which is the best sort.

Q. What are the blades of knives made of?

A. Of steel.

Q. What is the handle made of?

A. Of bone, and sometimes ivory.

Q. What are plates and dishes made of?

A. Of earthenware and china, but very rich people often have everything on the table made of silver.

Q. What are sheets, table-cloths, and towels made of?

A. Of linen and calico.* Table-cloths are made of white damask.

Q. How do we light our houses at night?

A. By candles, oil, and sometimes gas.

Q. What are candles made of?

A. Of tallow.

Q. What is tallow?

A. The fat of animals.

Q. How do we get oil?

A. From a large fish called a whale.

Q. How is gas made?

A. By burning coals; it gives a very beautiful light.

* See page 38.

CHAPTER VII.

On the Articles used in the School-room

Q. Can you mention some things used in the school-room?

A. Books, slates, slate pencils, rulers, pens, ink, and paper.

Q. Are there many more things besides these used in a ladies' school-room?

A. Yes; frames for worsted work, lambs' wool dyed, thread, and cotton of different colours, sewing silk, needles, and pins.

Q. What are books made of?

A. The inside leaves of paper, and the covers of silk, cloth, and fancy papers.

Q. Are the words written in books with pen and ink?

A. No; they are printed by a machine which stamps a great deal of reading on a large piece of paper all at once.

Q. When was printing first known in England?

A. In the reign of Edward IV.

Q. Who introduced it?

A. William Caxton.

Q. Where do slates come from?

A. They are dug out of the ground, and ground smooth that we may write upon them; the frames are wood.

Q. What are slate pencils?

A. Soft pieces of slate, cut round like a lead pencil.

Q. What are rulers made of?

A. Of any hard wood.

Q. What are pens made of?

A. Pens were once made of the wing feathers of a goose, but now they are almost all made of steel.

Q. What is black ink made of?

A. Gall nuts, copperas, and gum arabic; coloured inks are also much used.

Q. What are ladies' work boxes and work frames made of?

A. Some are made of painted deal, but the best of mahogany and rosewood.

Q. What is thread made of?

A. Spun flax, and cotton.

Q. What is cotton?

A. The soft fibrous substance found in the pod of the cotton-tree, spun and wound on reels.

Q. What are needles made of?

A. Very fine pointed steel.

Q. What are pins made of?

A. Of brass wire; it once required eight or nine persons to make one pin.

Q. How was that?

A. One person made the wire, the second cut it in pieces, the third whitened it, the fourth made the point, the fifth made the head, the sixth put the head on, the seventh polished it, the eighth sorted them, the ninth stuck them in the papers which we buy in the shops.

Q. How are pins generally made now?

A. By a machine.

Q. We sometimes use sponge to clean our slates; what is it?

A. An animal substance found in the seas of warm climates, sticking to rocks and shells.

Q. What is sealing-wax made of?

A. Gum lacca, and resin; the red is coloured with vermilion; it was first made in Europe by the Portuguese.

CHAPTER VIII.

On Metals and Precious Stones.

Q. How many principal metals are there?

A. Nine: gold, silver, platina, quick-silver, copper, iron, tin, lead, and zinc.

Q. Which is the most valuable?

A. Gold.

Q. Which is the lightest?

A. Zinc.

Q. What pieces of money are made of gold?

A. Sovereigns and half-sovereigns.

Q. What money is made of silver?

A. Sixpences, shillings, florins, half-crowns, and crowns; also fourpenny and threepenny pieces.

Q. What is pewter?

A. A mixture of tin and lead.

Q. What is steel?

A. Iron heated in the fire with charcoal ashes and bone shavings.

Q. What is brass?

A. A mixture of copper and zinc.

Q. What is white lead?

A. Common lead corroded by the steam of hot vinegar.

Q. What is it used for?

A. It is used by house painters to thicken and dry their paints.

Q. Is the smell of paint hurtful?

A. Yes; because white lead is a slow poison.

Q. What else is white lead used for?

A. It is mixed with whiting and linseed oil to make putty.

Q. What is the use of putty?

A. It is used by glaziers to fix the panes of glass into window frames, and they use it for many other things.

Q. Which are some of the precious stones?

A. The diamond, the pearl, the ruby, the emerald, the topaz, the garnet, the sapphire, and the amethyst.

Q. Where are pearls found?

A. In the shell of the pearl oyster; other precious stones and metals are dug out of the ground.

Q. What are the places called from whence they are dug?

A. Mines; some mines are very deep under the earth, and the people build houses and live in them all their lives.

Q. Where are the best diamonds found?

A. In the mines of Golconda in Hindostan, also in Brazil.

Q. Where have we the best pearls?

A. From the pearl fishery at the entrance of the Persian Gulf.

CHAPTER IX.

On the Clothes we wear.

Q. What is the cloth of coats made of?

A. The wool of sheep.

Q. What other articles are made of wool?

A. Flannel, worsted stockings, and sometimes ladies' shawls and dresses.

Q. Are they not sometimes made of wool brought from abroad?

A. Yes; of Cashmere, Thibet wool, and mohair.

Q. What is mohair?

A. The hair of the Angola goat.

Q. What is linen made of?

A. Of a plant which grows in England and Ireland, called flax.

Q. What are cotton materials made of?

A. Of the produce of the cotton-tree: it grows in pods.

Q. Are not ladies' dresses sometimes made of cotton?

A. Yes; when pretty patterns are printed on it.

Q. What else are ladies' dresses made of?

A. Of silk, satin, and velvet.

Q. Where does silk come from?

A. The silk-worm; satin and velvet are made of silk.

Q. How does the silk-worm make the silk?

A. By spinning an oval ball from a substance contained in its own body.

Q. How are cotton, flax, and wool, made into cloth?

A. They are spun by a machine; silk and velvet are woven in a machine called a loom.

Q. What are bonnets made of?

A. Of velvet, satin, or silk, and very often straw.

Q. What is straw?

A. The stalks of corn, split and plaited.

Q. What are boots and shoes made of?

A. Of skins of animals, made into leather by tanning; also of kid, silk, and velvet.

Q. What is kid?

A. The skin of a kid or young goat; gloves are made of kid.

Q. What are gentlemen's hats made of?

A. Of skins of beavers, silk, felt, and other materials.

Q. Where do furs come from?

A. From abroad: ladies' muffs and cuffs are made of the fur of the Siberian squirrel, the chinchilla, the sable, and the ermine.

Q. Where do the ermines come from?

A. Very cold countries: they are pretty little white creatures, and the black spots on ladies' ermine muffs are the ermine's tail.

Q. What are those large feathers that ladies sometimes wear in their bonnets?

A. Ostrich feathers: the ostrich is a very large bird which lives in Africa.

Q. What is swan's down?

A. The soft white feathers from the breast of the swan; eider down is from the breast of the eider duck.

Q. What besides water is used in washing linen?

A. Soap and soda.

Q. What is soap made of?

A. Oil, fat, or tallow, and soda which has been boiled in lime.

Q. When was soap first made in England?

A. In the reign of Henry VIII.

Q. What is used to stiffen linen?

A. Starch; it is made from wheat: hair powder is made of starch.

CHAPTER X.

On our own Country.

Q. What part of the world do we live in?

A. Europe.

Q. What country of Europe?

A. England.

Q. Into how many counties is England divided?

A. Forty.

Q. What county do we live in?

A.

Q. What town?

A.

Q. Which is the chief town of England?

A. London.

Q. Is not London a city?

A. Yes: a city is a very large place, with a great number of churches, houses and people.

Q. How are the streets paved?

A. The pavement that people walk upon is made of large flat stones.

Q. What is the carriage road made of?

A. Many years ago it was made of large round stones, but some of the streets have been altered since.

Q. How did they alter it?

A. They broke the stones into very small pieces, and strewed them over the road.

Q. Who invented this?

A. A person named MacAdam; so they call the new roads macadamised.

Q. Has there been another plan?

A. Yes, they pave some of the streets with wood, and some with asphalte.

Q. Is this a good plan?

A. It makes the streets very quiet, but it is so slippery in wet weather, that horses sometimes fall down.

Q. When persons want to go a great many miles, are they obliged to walk?

A. No; rich people keep horses, and carriages of their own to ride about in.

Q. But suppose they had no carriage?

A. Formerly there used to be a stage coach and four horses, to take people any distance very quickly.

Q. Do people travel by stage coaches now?

A. Not very often, because railways are invented.

Q. What are steam carriages?

A. Carriages that are moved by steam, without horses.

Q. Do they go very fast?

A. Yes; stage coaches used to go nine miles an hour, but steam carriages will go sixty miles an hour.

Q. How is steam made?

A. By making water boil very fast, then the steam becomes strong, and will make a large engine work.

Q. Is steam used for anything else?

A. Yes; a great many machines or engines are worked by steam.

Q. What is a machine?

A. An arrangement of wheels and rods moved by springs or steam; a clock is a machine.

Q. Tell me some things moved by machinery.

A. Clocks, watches, and many other things.

Q. Are not mills worked by steam?

A. Yes; but corn mills are sometimes worked by the wind, and sometimes by water.

Q. What are they called when the wind moves them?

A. Wind-mills.

Q. Is not England an island?

A. Yes.

Q. What is an island?

A. Land with water all round it.

Q. Then how do people get to other countries?

A. By ships.

Q. What are ships made of?

A. Strong oak, cut from the oak-tree.

Q. How are they made to move?

A. By the sails, which are pushed by the wind.

Q. But is there not another way?

A. Yes; many of our vessels have a

steam engine inside them, which makes them go very fast.

Q. What are they called?

A. Steam ships, or steamers.

Q. What is a man of war?

A. A ship used for fighting; it carries guns.

Q. When is it used?

A. When the sailors go to fight on the sea.

Q. Do not sailors find their way at sea by the sun and stars?

A. Yes; but sometimes the sky is covered with clouds for several weeks, so that they cannot see the sun or the stars.

Q. How do they find their way, then?

A. By the mariner's compass.

Q. What is that?

A. A circle with the cardinal points marked on it. This is placed in the bottom of a box, in which there is a needle that has been rubbed by a loadstone.

Q. How can the needle be useful?

A. One point of the needle always points to the north, the other to the south, so the sailors can always tell which way they are going.

Q. What is the loadstone?

A. Magnetic iron, that will attract iron or steel. If put near to anything made of iron or steel, as a needle, or a pen-knife, it will draw it to itself.

Q. Where is it found?

A. It is found in iron mines in Germany, Hungary, England, Arabia, Bengal, and China.

Q. What are sailors also called?

A. Mariners; the sailors who fight at sea are said to belong to the navy.

Q. What are soldiers?

A. Men who belong to the army: they fight on land. Soldiers are also called the military.

Q. What do they use in battle?

A. Bayonets, swords, rifles, and great guns called cannons.

Q. What do they put in their guns?

A. Gunpowder and bullets.

Q. What are bullets?

A. Round leaden balls; the gunpowder makes them go a very great way very quickly.

Q. What do they put in cannons?

A. Very large balls, some of them are hollow and filled with gunpowder.

Q. What are they called?

A. Bomb-shells, and when fired from the cannons, they burst and kill a great many people.

Q. What is gunpowder made of?

A. Saltpetre, sulphur, and charcoal.

Q. What are fireworks?

A. Objects made with gunpowder and other things, which send out bright lights and sparks, very pretty to see.

Q. Is it not very dangerous for little boys and girls to touch gunpowder?

A. Yes; because a very little bit will explode and burn them dreadfully if a spark of fire touches it.

Q. Are there not places built for old soldiers and sailors to live in?

A. Yes; Chelsea hospital, for old soldiers; they are called Chelsea pensioners.

Q. What is the other?

A. Greenwich hospital, for old sailors; they are called Greenwich pensioners.

PART II.

The Arts and Sciences.

CHAPTER I.

On Drawing.

Q. WHAT is meant by the arts and sciences?

A. Drawing, painting, music, and sculpture, are some of the arts, and are generally called the fine arts.

Q. What are the sciences?

A. Astronomy, arithmetic, geography, chemistry, geology, botany, and mathematics, are some of the sciences.

Q. What is drawing?

A. Imitating things that we see, with a pencil on paper.

Q. What articles are used in drawing and painting?

A. Lead pencils, camel-hair brushes, French and Italian chalk, paper, paints, oil colours, velvet, silk, glass, etc.

Q. What is the wood used for pencils?

A. Chiefly cedar: cedars grow in Asiatic Turkey. The forest of Lebanon was a forest of cedar-trees.

Q. What is the lead used for pencils?

A. It is different from common lead, and is called plumbago. There are valuable lead mines in Siberia, but the finest quality is found in Cumberland.

Q. What is paper made of?

A. Of rags, straw, and even of wood.

Q. Can you tell me how it is made?

A. The material is first torn to pieces in a mill till quite soft, and forms a pulp or paste.

Q. What is done next?

A. The pulp is poured over large sheets of fine wire gauze, sized, pressed, and rolled.

Q. What is the size made of?

A. Of clean parchment and vellum shavings; the paper is dipped into it.

Q. What makes paper so smooth?

A. It is pressed; the smoothest paper is hotpressed.

Q. What is parchment?

A. Parchment is made of the skin of goats and sheep.

Q. What is vellum?

A. The skin of calves.

Q. Are not India rubber, Indian ink, and gamboge, used in drawing?

A. Yes: Indian ink comes from China and the East Indies.

Q. How is it made?

A. Of fine lamp black and glue; but the people in Europe do not know how to make it properly.

Q. What is gamboge?

A. It is a vegetable juice of a fine yellow colour; it comes from Cambodia in the East Indies.

Q. What is India rubber?

A. A kind of gum, which oozes like a liquid from a tree growing in Asia and America.

Q. How does it become hard?

A. As it dries it becomes tough like leather, and is very elastic.

Q. What do you mean by elastic?

A. Anything that will return to its original length, after being stretched, is elastic. A piece of India rubber will stretch very long if it is pulled at each end, and become as short as it was before if let go.

Q. Is this substance used for any other purpose?

A. We make overshoes or goloshes, tubes, waterproof cloth, elastic bands, and many other things of it.

Q. What is meant by optical instruments?

A. Belonging to the eye; optical instruments are those which are used by the eye, as spectacles, eye-glasses, and the glasses of the microscope and telescope.

Q. What is the use of the microscope?

A. To help us to see very small objects.

Q. What is the use of the telescope?

A. To make distant objects appear near.

CHAPTER II.

On Music.

Q. Name another of the fine arts.

A. Music ; it is classified as vocal and instrumental.

Q. What do you mean by vocal ?

A. Belonging to the voice ; singing is vocal music.

Q. What is instrumental music ?

A. That which is played upon instruments : like the pianoforte, harp, violin, flute, and many others.

Q. Is not the study of music called a science ?

A. Yes ; music itself is an art, but the study of its principles is a science.

Q. What are the sounds in music called ?

A. Notes.

Q. What names are given to these notes?

A. The seven first letters of the alphabet, A. B. C. D. E. F. G.

Q. How is music written?

A. By little round marks or dots at first on eleven ruled lines, five in the treble, five in the bass, and one between, called C. Now only ten lines are used.

Q. Are all notes the same value?

A. No; some sound for a long time, while others are played or sung very quickly.

Q. Which are the slowest notes?

A. Semibreves.

Q. What are the others?

A. Minims, crotchets, quavers, semi-quavers, and demisemi-quavers.

Q. If more than ten lines are wanted for the music, what are they called?

A. Ledger lines.

For further information on music, the teacher is referred to the "*Child's First Steps to the Pianoforte.*"

CHAPTER III.

On Sculpture.

Q. What is Sculpture ?

A. The art of cutting beautiful figures out of stones or marble.

Q. How is this done ?

A. With a chisel and hammer.

Q. Where can we see beautiful pieces of sculpture ?

A. In the British Museum ; some of them were brought from the ruins of Greece, Rome, and Nineveh.

Q. Are not some of them broken and old ?

A. Yes ; but they are valuable, and persons who understand sculpture consider them very beautiful.

Q. Are there not some fine carved figures in London ?

A. Yes ; in Hyde Park, and many of the squares, and at Charing Cross there is a figure of Charles I. on horseback.

Q. Mention some others.

A. One of George III. near Charing Cross, George IV. in Trafalgar Square, and the Duke of York, on a pillar near St. James' Park.

Q. What figure is that on the pillar in Trafalgar Square?

A. A figure of Lord Nelson; he was a great Admiral.

Q. Can you name any other statues to be seen in London?

A. That of Prince Albert on the Holborn Viaduct; the Duke of Wellington, and George Peabody, Royal Exchange; William IV., near London Bridge; and Sir Robert Peel, Cheapside.

CHAPTER IV.

On Astronomy.

Q. What is Astronomy?

A. It is the science which teaches the sizes, distances, and movements of the sun, moon, stars, planets, and comets.

Q. How do astronomers find out all these things?

A. By studying and calculating.

Q. Can they tell what will happen beforehand?

A. Yes; they know many years before an eclipse happens, the exact moment it will begin and end.

Q. What other help do they have?

A. Telescopes, which are sometimes very large, and seem to bring the stars they are looking at near the eye.

Q. Can you tell me a few things discovered by telescopes?

A. Yes; spots in the sun, Jupiter's belts, Saturn's rings, and the moons which attend the planets.

Q. Who discovered the planet called Uranus?

A. Sir William Herschel; he also constructed a very large telescope.

Q. What is the solar system?

A. The sun, and the planets that move round it.

Q. What are planets?

A. Worlds which receive light and heat from the sun, as our earth does.

Q. What are the names of the planets which move round the sun ?

A. Mercury, Venus, the Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and a large number of very small planets, called planetoids.

Q. Which of the planets are known to have moons ?

A. As far as we know at present, the Earth has one moon, Mars two, Jupiter four, Saturn eight, Uranus six, Neptune one.

Q. What are constellations ?

A. If we look at the sky at night we see groups of stars, which seem to form various shapes : these groups are called constellations.

Q. What is the Zodiac ?

A. The groups of constellations through which the sun appears to pass every year.

Q. How many constellations are there in the zodiac ?

A. Twelve ; they are called the twelve signs of the zodiac.

Q. Tell me their names ?

A. Aries the ram.

Taurus the bull.
 Gemini the twins.
 Cancer the crab.
 Leo the lion.
 Virgo the virgin.
 Libra the scales.
 Scorpio the scorpion.
 Sagittarius the archer.
 Capricornus the goat.
 Aquarius the water-bearer.
 Pisces the fishes.

Q. Let me hear you repeat them in
verse.

A. The ram, the bull, the heavenly
 twins,
 And next, the crab, the lion shines,
 The virgin and the scales ;
 The scorpion, archer, and she-goat,
 The man that holds the water-pot,
 And fish with glittering tails.

CHAPTER V.

On Architecture.

Q. What is Architecture ?

A. The art of building cathedrals.

The architect plans how it shall be built, and then builders erect it after his plans.

Q. What were the ancient orders of architecture?

A. There were five,—the Tuscan, the Doric, the Ionic, the Corinthian, and the Composite.

Q. Mention some of the finest buildings in London.

A. St. Paul's Cathedral, Westminster Abbey, the Monument, Guildhall, the new Royal Exchange, and many others.

Q. Who built St. Paul's Cathedral and the Monument?

A. Sir Christopher Wren.

Q. Why was the Monument built?

A. In remembrance of a dreadful fire, which burnt nearly all the city of London.

Q. What year did this fire happen?

A. In the year 1666.

Q. What happened the year before?

A. A dreadful plague in London, of which many thousands died every week.

Q. In whose reign did these two events happen?

A. In the reign of Charles the Second.

Q. Which of the public buildings have been destroyed by fire?

A. St. Paul's, by the great fire of London; the House of Lords in the year 1834; and the Royal Exchange in the year 1838.

Q. What works chiefly require the science of engineering?

A. The making of bridges, tunnels, canals, etc.

Q. Of what materials are bridges built?

A. Formerly, generally, of stone; lately, mostly of iron.

Q. What other sort of bridges can you mention?

A. Suspension bridges; they are hung across the water by chains.

Q. Name another kind of bridge?

A. Railway bridges; there are several in England.

Q. What is a tunnel?

A. A road cut through a hill, or under the bed of a river.

Q. Is there one in London?

A. Yes, called the Thames Tunnel; it goes under the river from Wapping to Rotherhithe.

Q. Of what other use are tunnels?

A. On railroads, for the train to pass through very steep hills, some of them are three or four miles long underground.

Q. What are the names of the bridges over the river Thames?

A. In or near London are, London Bridge, Southwark, Blackfriars, and Waterloo Bridges; Hungerford, Westminster, and Vauxhall Bridges; Lambeth, Victoria and Albert Bridges; and where the river gets narrower, Putney, Hammersmith, Kew, and Battersea Bridges.

Q. When was the present London Bridge erected?

A. In the reign of King William IV. It is the second since the fire of London.

Q. How was the bridge before that fire different from the one we have now?

A. It had houses on both sides of it, so that it was like a street.

Q. Was there anything particular in the bridge they built after the fire?

A. Yes, the arches were so narrow that one very cold winter the pieces of ice could not pass through, and all the river between the bridge was frozen over.

Q. What took place then?

A. There was a fair held on the river, and crowds of people walked upon it; they also roasted a bullock on the ice.

Q. What is that building called where the money is coined?

A. The Mint. Bank notes are printed at the Bank, on paper made specially for the purpose.

Q. Mention some more fine buildings in or near London.

A. Westminster Hall, Buckingham Palace, the National Gallery, Windsor Castle, the Admiralty, the Horse Guards, and Whitehall.

Q. What great persons do we read of who were kept prisoners in the Tower of London?

A. Edward V. and his brother, Anne Boleyn, Lady Jane Grey and her husband, and many others.

Q. What English king lost his life at Whitehall?

A. King Charles I. was beheaded there in 1649.

Q. What palace has been built near Westminster Bridge?

A. The new Houses of Lords and Commons.

Q. What did Guy Fawkes intend to do to the House of Lords?

A. To blow it up with gunpowder.

Q. Where did he put the gunpowder?

A. In a cellar under the House of Lords.

Q. How many barrels had he?

A. Thirty-six.

Q. Who was king then?

A. James I.

Q. In what year was the plot discovered?

A. In the year 1605.

A continuation of the Subject of this chapter is given in Mrs. Paull's "First Principles of Knowledge," page 255.

CHAPTER VI.

On Mathematics.

Q. What do you mean by Mathematics ?

A. The science of quantities and magnitudes.

Q. How would you divide mathematics ?

A. Into arithmetic, algebra, geometry, and mechanics.

Q. What is arithmetic ?

A. The science of numbers.

Q. What are the first simple rules of arithmetic ?

A. Numeration, addition, subtraction, multiplication, and division.

Q. What is algebra ?

A. Something like arithmetic ; but in working out the problems letters and symbols are used as well as figures.

Q. What is a digit ?

A. Any number under 10.

Q. What is geometry ?

A. The art of drawing figures by rules.

Q. Which are the simple figures of geometry?

A. * The point . ; straight or horizontal line — ; perpendicular or upright line | ; slanting or oblique line / ; parallel lines = ; a circle ○ ; a semi-circle ∪ ; the arc of a circle ∩ ; a square □ ; a parallelogram ▭ ; a right angle ⊥ ; an acute angle ∠ ; an obtuse angle ∟ ; a triangle Δ ; an isosceles triangle △ ; a scalene triangle ▴ .

Q. What is a line called running from one end of the arc to the other?

A. The chord.

Q. What is the circumference of a circle?


A. The length all round it.

Q. What is the diameter?

A. The length through it, from one side to the other ; the circumference is three times as long as the diameter ⊙ .

Q. What is a figure of five sides called?


* The following figures should be drawn by the teacher with chalk on a black board, and pointed to by him for the children to tell their names with the book.

A. A pentagon .


Q. What is a figure of six sides called?

A. A hexagon .


Q. A figure of seven sides?

A. A heptagon .


Q. A figure of eight sides?

A. An octagon .


Q. A figure of nine sides?

A. A nonagon .

Q. A figure of ten sides?

A. A decagon .

Q. A figure of many sides.

A. A polygon .

Q. Who was Euclid?

A. Euclid is the name of a person who lived many hundred years ago, and wrote a book on mathematics.

Q. What do you mean by mechanics?

A. It is the science that teaches us how to make machinery, as steam engines, clocks, watches, and other things.

Q. What are its principal powers?

A. There are six; the lever, the wheel and axle, the pulley, the inclined plane, the wedge, and the screw.

CHAPTER VII.

On History.

Q. What is History ?

A. History is an account of almost everything that has happened since the world was created.

Q. How is it divided ?

A. Into ancient, modern, sacred, and profane.

Q. What do you mean by ancient ?

A. The history of things that happened a long time ago ; the history of Greece and Rome are ancient histories.

Q. What is modern history ?

A. All histories since the fall of the Roman empire are modern histories.

Q. What is sacred history ?

A. The history of the Jews before the birth of Christ, and the history of Christianity since then. The Bible contains the books of sacred history.

Q. Is there another history of the Jews besides the Bible ?

A. Yes, by Josephus ; he was a Jew.

Q. Does profane history mean anything wicked ?

A. No ; all history that is not sacred is called profane.

Q. What is natural history ?

A. The description of birds, beasts, insects, and fishes.

Q. What is the study of birds called ?

A. Ornithology.

Q. What is the study of beasts called ?

A. Zoology.

Q. What is the study of insects called ?

A. Entomology.

Q. What is the study of fishes called ?

A. Ichthyology.

Q. Tell the name of some English birds.

A. The sparrow, the blackbird, the thrush, the robin, the wren, the yellow-hammer, the lark, and the nightingale.

Q. Are these large birds ?

A. No ; the magpie, the raven, the crow, the rook, the owl, and many others, are large birds.

Q. Are not the nests of birds very curious?

A. Yes, they build their nests themselves, and some are very beautiful.

Q. Is the wren's nest very curious?

A. Yes, it is in the shape of an egg, with a little door for the bird to go in and out.

Q. Do all birds build nests for their young ones?

A. No; the ostrich lays her eggs in the sand, and leaves them to be hatched by the sun.

Q. What does the cuckoo do?

A. She lays one egg in the sparrow's nest, and the sparrow hatches it.

Q. When the cuckoo grows big what does it do?

A. It turns all the young sparrows out of the nest.

Q. Do not some birds talk?

A. Yes; the parrot, the jackdaw, the magpie, and sometimes the starling.

Q. Is the parrot an English bird?

A. No, it comes from hot countries, a long way off.

Q. Which bird is most tame?

A. The robin; it will come and fly round the windows for crumbs in cold weather.

Q. Does every bird stay in England all the year?

A. No; many birds cannot bear the cold of winter, and go to warmer climates.

Q. When do they come back to England?

A. In the spring, and stay till the end of summer.

Q. What birds do we call domestic?

A. Fowls, geese, turkeys, and ducks, these are all used for food.

Q. What English birds are good singers?

A. The blackbird, the thrush, the linnet, the lark, the nightingale, and the robin.

Q. What does the lark do while he is singing?

A. He flies up in the air till he is almost out of sight. He flies high in the morning to see the sun rise, and

sings before any other bird is out of its nest.

Q. When does the nightingale sing?

A. In the night; it has the most beautiful song of all the birds.

Q. Does the robin sing?

A. Yes; and he sings in the winter, when all the other birds are silent.

Q. What is a canary?

A. A beautiful yellow bird; it comes from the Canary Isles, and has a lovely song.

Q. Which is the largest animal?

A. The elephant.

Q. What are the elephant's large teeth called?

A. Tusks.

Q. Are they useful?

A. Yes; they are ivory; the piano keys, handles for knives, and many pretty things, are made of them.

Q. What is that animal called with the hump on his back?

A. The dromedary. The camel has two humps on his back.

Q. Is it useful?

A. Yes; it carries very heavy burdens.

Q. In what country?

A. In Arabia, over very hot places, called deserts, with nothing but burning sand to walk on.

Q. Which is the king of beasts?

A. The lion.

Q. Tell me some of the names of the wild beasts.

A. The lion, the tiger, the leopard, the panther, the hyena, and the bear.

Q. Does not musk come from a wild animal?

A. Yes; it is about the size of a goat, and lives in Tonkin-China, Bantam, and Tibet.

Q. What is musk?

A. A very strong perfume.

Q. Which are the most useful animals?

A. The horse, the cow, the sheep, the goat, the ass, the mule, and the dog.

Q. Which are the timid animals?

A. The hare, the deer, and the zebra.

Q. Does the hare run quickly?

A. Yes; cruel men hunt her with horses, and dogs called hounds.

Q. Do they soon catch her?

A. No; she will run a long time, but at last she gets tired, and then the dog kill her.

Q. What other animals do they hunt?

A. The stag and the fox.

Q. Does the fox deserve to be hunted?

A. No; but he ought to be driven away or killed.

Q. Why?

A. Because he is so sly, and steals the fowls and geese from the farm yard.

Q. Is the cow useful?

A. Yes; she gives us milk and cream; butter and cheese are made from milk.

Q. Is anything made of the cow's horns?

A. Yes; cups and spoons, handles for knives, and a great many other things.

Q. Which is one of the most sagacious animals?

A. The dog; he loves his master, and when he watches the house at night he will not suffer a thief to come near it.

Q. Are dogs very useful in cold countries?

A. Some dogs are trained to look for poor people who have been buried in the snow, and are almost frozen to death.

Q. When they find them what do they do?

A. They begin to howl, and then the men who are following, come near and sometimes save the poor people from dying of cold.

Q. Of what other use are they in cold countries?

A. They draw the people who live there in sledges over the snow very quickly.

Q. What is a sledge?

A. A carriage without wheels; it slides along upon the snow on runners.

Q. Are dogs used in all cold countries to draw the sledges?

A. No; in some places they use horses, and in Lapland and Greenland they are drawn by reindeer.

A. Are horses valuable?

Q. Yes, most valuable. They are very

useful creatures, and will understand their rider by signs which he makes with the bit, his foot, his knee, or the whip.

Q. Do they remember the road?

A. Yes; if they have travelled a road once, they will know their way back, and remember places at which they have stopped.

Q. Is the horse useful when dead?

A. Yes; its skin, hoof, hair, flesh, and bones are all very useful. The skin is made into leather; and the hair of its mane and tail is woven into hair-cloth.

Q. Are not sheep very timid creatures?

A. They are harmless and timid, but very useful both for food and clothing. The skin is made into parchment, the entrails into fiddle-strings, and the wool into cloth, merinos, blankets, etc.

Q. Of what use is goats' hair?

A. The white hair is made into lawyer's wigs, and cloth may be made of it. The skin of the goat is used for boots and shoes.

Q. Is the ass valued as the horse?

A. No; because it is not so swift:

but he is much stronger, and will bear very rough usage.

Q. Is it not cruel to ill-use the ass?

A. Yes, very cruel, because he is humble, patient and quiet, and works very hard to please his master.

Q. Where are mules useful?

A. In hilly countries; the mules will carry people up very steep hills more carefully than any other animals.

Q. Do they not come down steep mountains in a curious manner?

A. Yes; they put their fore-feet close together, and draw their hind-legs under them, and so slide down the mountains with people on their backs.

Q. Do they often fall?

A. No; they almost always keep in the pathway; and bring their rider safe to the foot of the mountain.

Q. You have told me gentlemen's hats were made of beaver. What is beaver?

A. It is the fur of an animal called a beaver.

Q. Are not the beavers very interesting little creatures?

A. Yes ; they are about the size of a large rabbit, with a broad flat tail, and build so many houses in the mud by the side of rivers that they form quite a village.

Q. Where do they come from ?

A. From France, Germany, and Poland ; but the greatest number come from Canada, in North America.

Q. Of what use is their skin after the fur is taken off ?

A. It is used to cover trunks and portmanteaus.

Q. Can you tell me anything interesting about insects ?

A. The ant, the bee, and the termite, are very interesting insects, and also the glow-worm and silk-worm.

Q. What is a glow-worm ?

A. A little insect with a spark of light under its tail ; it shines very bright at night.

Q. Is there not a fly in America something like a glow-worm ?

A. Yes ; it is called the fire-fly : four of them will give as much light as a candle.

Q. Where do we get honey ?

A. The bees make honey ; they gather it from the flowers.

Q. How do they carry it?

A. In little bags in front of them ; they make little cells of wax to keep the honey in.

Q. Who is the head of the hive ?

A. The queen bee, she is larger than the rest, and they wait upon her.

Q. Do not bees sting ?

A. Yes, very much when they are teased.

Q. What is done to the idle bees ?

A. The other bees turn them out of the hive because they will not work, and they starve ; they are called drones.

Q. Where do we get silk ?

A. From the silkworm.

Q. What does the silkworm eat ?

A. The leaves of the mulberry-tree.

Q. Where are silkworms most plentiful ?

A. In eastern countries, and in Italy ; they never grow so large in England as in hot countries.

Q. How do they make silk ?

A. By spinning out a glutinous substance they have in themselves.

Q. After the silk is wound off, what is found inside the ball?

A. A chrysalis or grub, in a hard case, called a cocoon.

Q. What next happens?

A. A beautiful white butterfly comes out of the case.

Q. Does it eat then?

A. No, it lays its eggs and dies.

Q. What insect is used for dyeing?

A. Cochineal; it lives in Mexico, and sucks the juice of a species of the cactus plant.

Q. What colour does it dye?

A. A beautiful scarlet, purple, and crimson; the insects are dried and sent to Europe in great quantities.

Q. What can you tell me about ants?

A. They are very industrious little creatures, they lay up food in summer for the winter.

Q. Is not the termite a kind of ant?

A. Yes, and its habits are very interesting.

Q. Tell me something about the termites.

A. There are three sorts,—the labourers, the soldiers, and the perfect insects.

Q. What do the labourers do?

A. They are always busy building or mending their houses, feeding the young ones, or laying up food in store.

Q. What sort of houses have they?

A. The houses are in the shape of a sugar loaf, built of clay, and sometimes ten or twelve feet high.

Q. Are they curious inside?

A. Yes, they have regular apartments and galleries in every direction.

Q. How do they go from one house to another?

A. They have passages under ground all round their houses, so they go safely.

Q. What are the soldiers?

A. The soldiers are larger than the labourers, and they fight to protect the others; they bite very dreadfully.

Q. What are the perfect insects?

A. They are larger than the soldiers, and have wings.

Q. Which is the largest of all fish?

A. The whale.

Q. What useful things are got from the whale?

A. Oil, spermaceti, verdigris, and whalebone.

Q. What part does whalebone come from?

A. The roof of the mouth.

Q. Who was swallowed by a big fish?

A. Jonah.

Q. Did he die?

A. No; God commanded the fish to throw him up on dry ground.

Q. How long was Jonah in the whale?

A. Three days and three nights.

Q. Where can we read this story?

A. In the Bible.

Q. What is the name of the little fish that sometimes kills the whale?

A. The sword-fish; it has a long sharp pointed sword-like beak, one third of its own length.

Q. Where are pearls found?

A. In the shell of the pearl oyster.

Q. Name the fish that will eat people.

A. The shark.

Q. What fish is said to have taught men to sail in ships?

A. The nautilus. Its shell is beautiful.

Q. How could it teach them?

A. Because it has two large fins like sails, and swims on the top of the water.

Q. What do you mean by amphibious animals?

A. Animals that can live both on land and in water.

Q. Mention some amphibious animals.

A. The crocodile, the walrus, the seal, the alligator, etc.

Q. What can you tell me about the crocodile?

A. It is a very large frightful looking animal. Crocodiles are sometimes as long as a large room; they are carnivorous.

Q. What is carnivorous?

A. Living on flesh. Crocodiles will eat men, women, and children, and all sorts of animals. There are a great number in the river Nile.

Q. Can you tell me something about a dog, to prove its sagacity?

A. If a dog wishes to cross a river in which he knows there are crocodiles, he will go a long way from where he wishes to cross, and howl very loud.

Q. What is the use of this?

A. The crocodiles hear him, and they all come as fast as they can to the place where he stands, when they get there he runs as swiftly as possible to another place, and gets across the river before they can get back again to him.

(Subject continued in Paull's Principles, page 102.)

CHAPTER VIII.

On Language.

Q. What do you mean by a language?

A. The words which the people of a country use in speaking to each other?

Q. Were there always different languages in the world?

A. No; before the tower of Babel was built everybody spoke one language.

Q. What was the cause of the change?

A. God destroyed the world by water because the people were so wicked, and then they built a high tower which they said should reach to heaven, to save

themselves from being drowned if God should send another flood.

Q. But had not God promised that he would not drown the world again?

A. Yes; and he had put a rainbow in the clouds to make them believe it.

Q. Did God let them finish the tower?

A. No; while they were building, he came down and changed their language, so that they could not understand one another.

Q. What are the principal languages of Europe?

A. English, French, Italian, Spanish, German, Dutch, Russian, Polish, Danish, and Swedish.

Q. What are the dead languages?

A. Those which are not spoken by any people now living, but are still read.

Q. Which are they?

A. Hebrew, Greek, and Latin.

Q. What book was written at first in the dead languages?

A. The Bible; the Old Testament in Hebrew, and the New Testament in Greek.

Q. What is necessary to be learnt before we can understand a language?

A. Grammar.

Q. How is English grammar divided?

A. Into four parts.

Q. What are their names?

A. Orthography, etymology, syntax, and prosody.

Q. What are the signs used in reading and writing called?

A. Stops; the comma , the semicolon ; the colon : and the full stop .

Q. How do you count to these stops?

A. One to the comma, two to the semicolon, three to the colon, and four to the period or full stop.

Q. What other marks are used?

A. The note of interrogation ? the note of admiration ! the parenthesis () the caret ^ the hyphen - the apostrophe ' the quotation " " and the paragraph ¶.

Q. When is a note of interrogation used?

A. Always after a question.

Q. When is a note of admiration used?

A. After something very wonderful or surprising.

Q. When is a caret used?

A. When a word is left out in a sentence it is written above the line, and the caret is put under the line to show where the word ought to have been.

Q. What is an apostrophe used for?

A. To show that a letter is left out, as lov'd for loved; or to show the possessive case, as John's book.

Q. What is a hyphen?

A. A little mark used to separate syllables, as su-gar, or two words used for one object, as tea-pot.

Q. When are inverted commas used?

A. When we quote or repeat in writing what another person has said.

Q. How are they used?

A. We must put one or two marks when we begin and end the sentence.

Q. When is a paragraph used?

A. To show the beginning of a fresh portion of a subject; this paragraph sign ¶ is often used in the Bible.

CHAPTER IX.

On Chemistry.

Q. What is chemistry ?

A. The science which teaches us how to discover of what substances all things are made.

Q. Mention some of its uses ?

A. It teaches us how to prepare medicines, how to detect things that are hurtful, and a great many valuable uses too many to mention.

Q. What are the principal divisions of the air we breathe ?

A. Oxygen and Nitrogen ; if either of these parts were taken away from air we should die.

Q. How can air have so many parts, and yet we cannot see it ?

A. Because they are gases, and gas is so thin and fine that we cannot see it.

Q. When can we feel air ?

A. When it moves very fast, and then it is called wind. It is often so

strong that it will move ships; and in some countries it is so violent that it destroys houses and trees; it is then called a hurricane.

Q. Can you tell me a simple way of finding out the strength of air?

A. Fill a paper bag full of air, shut it up quite tight, and then strike the bag very hard, the air will burst the bag with a noise like the sound of a gun.

Q. Do people ever die from a poisonous gas?

A. Yes; sometimes in deep mines or pits, one part of the air becomes poisonous; and when people go down they cannot breathe, and die directly.

Q. Does not chemistry teach us how to find out whether the air is good underground?

A. Yes; fire or light will not burn if this poisonous gas is present, so a lighted candle is fastened to a string and let down into the pit; and if it does not go out, it is known that people can safely go down also.

Q. Can you tell me something of chemistry very simple and very wonderful?

A. Yes; after a cup of tea has been mixed with sugar and milk, something can be put into it which will make them all separate again from each other.

Q. How is chemistry useful to doctors?

A. It teaches them what medicines to use, and how to mix them.

Q. Name some plants used for medicine?

A. Poppies, chamomile flowers, Peruvian bark, manna, rhubarb, ipecacuanha, and castor oil.

Q. What are poppies?

A. The flowers of a plant growing in Turkey, Egypt, and the Indies: the juice of the white poppy is called opium.

Q. What are chamomile flowers?

A. The flowers of a plant growing in this country and elsewhere.

Q. What is Peruvian bark?

A. The bark of the quinquina-tree; it grows only in Peru.

Q. Who first discovered it?

A. The Jesuits, and it is often called Jesuit's bark.

Q. What is manna?

A. A gum which flows from a sort of ash-tree growing in the south of Europe.

Q. What is rhubarb?

A. The root of a plant which grows in Turkey and Asia.

Q. What is ipecacuanha?

A. The root of a plant; it grows in Brazil.

Q. What is castor oil?

A. It comes from the seeds of a tree, called by the Americans Palma Christi; it grows in the East and West Indies.

Q. What is camphor?

A. A white aromatic substance, procured from a species of laurel, which grows in China and Japan.

Q. What is senna?

A. The leaves of a plant brought from Arabia and Alexandria in Egypt.

Q. What are salts?

A. They are made from the springs of Epsom, a town in England.

Q. What is flower of sulphur?

A. Sulphur made into powder by heat.

Q. What is cream of tartar?

A. Cream of tartar is made from tartar when being purified by heat.

Q. What is tartar?

A. An acid salt, which is deposited on the sides of wine vessels after the wine has fermented.

Q. What do you mean by acid?

A. Anything that is sour to the taste, like lemon or vinegar.

Q. Mention some articles used for dyeing?

A. Gall nuts, Brazil wood, vermilion, indigo, logwood, analine, etc.

Q. What are gall nuts?

A. A small wart or round object found on the leaves of the oak.

Q. How do they come there?

A. An insect forms them to lay its eggs in.

Q. Whence do gall nuts chiefly come?

A. From the eastern shores of the Mediterranean, but they are plentiful in England.

Q. What is Brazil wood ?

A. A red wood brought from Brazil.

Q. What is indigo ?

A. A plant growing in the warm countries of Asia, Africa, and America ; it dyes a beautiful blue.

Q. What is logwood ?

A. A plant which grows in Honduras in America, and many parts of the Spanish West Indies ; it makes the best black and purple dyes.

(The Subjects are continued in Paull's "First Principles of Knowledge," pages 74 and 159.)

CHAPTER X.

On Botany.

Q. What do you mean by botany ?

A. The study of flowers and plants.

Q. What can we learn by studying botany ?

A. The names of everything that grows in the gardens and fields.

Q. What else do we learn ?

A. The use of plants.

Q. How are plants divided ?

A. Into orders, genera, and species.

Q. What is this arrangement called?

A. Division into natural orders.

Q. What are plants?

A. All sorts of trees, vegetables, and flowers.

Q. Tell me the names of some trees which grow in England?

A. The oak, the poplar, the fir, the lime, the horse-chestnut, and many others.

Q. What fruits grow on large trees?

A. Apples, pears, plums, cherries, walnuts, peaches, nectarines, and apricots.

Q. Do gooseberries and currants grow on large trees?

A. No; on small trees called bushes. Strawberries grow a little way out of the ground; the places where they grow are call strawberry beds.

Q. What are the different parts of a plant?

A. There are seven; the root, the bud, the stem, the leaves, the flower, the fruit, and the seed.

Q. What part is the root?

A. That which is under ground.

Q. Have all plants roots?

A. Yes, of one kind or another.

Q. Are some roots very large?

A. Yes; the roots of some trees run a long way under ground, and are larger than the tree.

Q. Are all roots alike?

A. No; some seem to be round, and are called bulbous; others, tuberous.

Q. Mention some bulbous roots.

A. The potatoe and turnip are tubers; the onion, tulip, and hyacinth, bulbous.

Q. Is this bulbous part really the root?

A. No; it is the bud or stem growing under ground instead of above it.

Q. What is the bud?

A. The bud is all the parts of the flower folded up in a case.

Q. What is the stem?

A. That part of the plant which grows above ground, and bears leaves.

Q. What is the stem of large trees called?

A. The trunk; it is sometimes so large, that when the tree is old and decayed, persons can get inside.

Q. What would you call such a tree?

A. A hollow tree. Owls and bats live in hollow trees.

Q. What is the green part of a plant?

A. The leaves; all plants have leaves, and some large trees make a beautiful shade from the sun, because they have so many leaves.

Q. What is the pretty part of a plant?

A. The flower; in fruit trees the flower is called the blossom.

Q. Can you tell me the names of the different parts of a flower?

A. The calyx, the corolla, the stamens, and the pistil.

Q. What are the white or coloured leaves of a flower called?

A. The corolla.

Q. What part is the seed?

A. It is that part of a plant which, if buried under ground, a new plant will grow from.

Q. Can you tell me of any large tree which grows from a small seed?

A. Yes; the oak, which grows so strong that ships are made of it.

Q. What is the name of this seed?

A. It is called the acorn, and is not so large as a filbert nut.

Q. Are all plants useful?

A. Yes, in some way.

Q. How are trees useful?

A. They shade us from the sun in summer, and when cut down the wood is useful for many purposes.

Q. Mention some of the uses of trees?

A. Fruit trees, that give us fruit for pies, puddings, and jams, or to eat uncooked.

Q. What is the use of small plants?

A. Potatoes, cabbages, turnips, onions, radishes, and many other things, are small plants, and are very useful for food.

Q. Of what other plants can you tell me?

A. Grasses; wheat, barley, and oats, are called grasses in botany.

Q. How are they useful?

A. Common grass is good for animals to eat; when it grows long it is cut down and made into hay for

them to eat in winter, when no grass grows.

Q. How are other grasses useful?

A. Of wheat we make flour and bread. Malt is made from barley, and beer is made of malt and hops.

Q. Tell me the use of oats.

A. When ground it is called oatmeal; of this porridge is made. The Scotch make it into cakes; animals also eat oats.

Q. What part of these plants is eaten?

A. The seeds of wheat, barley, and oats: the stem or stalk makes straw, which is very useful.

Q. What part of common grass do animals eat?

A. The stem, while it is green; but the young seeds are in it, and are good for the cattle.

Q. But are flowers useful?

A. They make our gardens look very pretty, and some of them have a very beautiful smell; but that is not all.

Q. What other use have they?

A. Some flowers are useful to the doctors to make medicine; and some are

useful to the bees, who make honey from them.

Q. Repeat a verse of poetry on this subject.

A. From the first bud whose venturous head
 The winter's lingering tempest braves,
 To those which midst the foliage dead
 Shrink latest to their annual graves;
 All are for use, for health, for pleasure given;
 All speak, in various ways, the bounteous hand
 of Heaven.

*(The Subject is resumed at page 59 of the Author's
 "First Principles of Knowledge.")*

CHAPTER XI.

On Geography.

Q. What do you mean by geography?

A. The description of the earth.

Q. What are used to teach people geography?

A. Maps and globes.

Q. What are maps?

A. Large sheets of paper, with the shape and countries of the world drawn and painted on them.

Q. What are globes?

A. Balls, with the countries and lines painted on them.

Q. What is the shape of the earth?

A. Nearly round, like an orange.

Q. How many miles is it round the earth?

A. Nearly twenty-five thousand.

Q. How many through the centre?

A. Eight thousand.

Q. What are the lines running from north to south on the map?

A. Lines of longitude.

Q. What are those running from east to west?

A. Lines of latitude.

Q. What is the top of the map?

A. The north.

Q. What is the bottom?

A. The south.

Q. What is the right hand?

A. The east?

Q. What is the left hand?

A. The west.

Q. What is that line on a map or globe running round the middle of the earth?

A. The equator.

Q. What is that line which runs obliquely round the earth?

A. The ecliptic, or sun's apparent path.

Q. How many zones are there?

A. Five.

Q. Name them?

A. One torrid, two temperate, and two frigid.

Q. What is the circle in the north called?

A. The arctic circle.

Q. What is that in the south?

A. The antarctic.

Q. Which are the two tropics?

A. The tropic of cancer and the tropic of capricorn.

Q. Which are the poles?

A. The two points at the top and bottom of the earth, on which it turns.

Q. What is the point at the top called?

A. The north pole.

Q. What is the point at the bottom called?

A. The south pole.

Q. Of what does the earth consist?

A. Land and water.

Q. How is land divided?

A. Into continents, islands, peninsulas, isthmuses, and promontories.

Q. What is a continent?

A. A large space of land containing many countries.

Q. What is an island?

A. Land surrounded with water.

Q. What is a peninsula?

A. Land with water all round it except one little place where it joins on to a large piece of land.

Q. What is that little place called?

A. An isthmus.

Q. What is a promontory?

A. A large piece of land which stretches a long way into the sea.

Q. What is a cape?

A. A prominent portion of a coast.

Q. How is the water divided?

A. Into oceans, seas, gulfs, straits, rivers, and lakes.

Q. What is an ocean?

A. A very large quantity of water. Oceans cover the greatest part of the earth.

Q. What is a sea ?

A. A large quantity of water, but much smaller than an ocean.

Q. What is a gulf ?

A. Water running up into the land, and joined by a strait to an ocean or sea.

Q. What is a river ?

A. A stream of water running through the land into the sea or another river.

Q. What is a lake ?

A. A large piece of water surrounded by land.

Q. Into how many parts is the land of the world divided.

A. Six ; Europe, Asia, Africa, America, Australia, and Polynesia.

Q. Which are the principal mountains ?

A. The Himalaya mountains, the Alps, the Apennines, the Andes, and the Pyrenees.

Q. What are volcanoes ?

A. Mountains with fire coming out at the top.

Q. Have any dreadful things ever happened from them ?

A. Yes; two cities, called Herculaneum and Pompeii, were destroyed by the fire that came from the top of Mount Vesuvius.

Q. Where is Mount Vesuvius?

A. In Italy; there is a volcanic mountain in Sicily called Ætna, another in Iceland called Hecla

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A higher standard of literary excellence has been aimed at than is usual in works of this kind. Nothing has been admitted whose intrinsic value is not great enough to make it worth the labour of getting by heart; and likely, as well as deserving, to be kept in remembrance.

Such biographical notices have been added as may serve to create, or to gratify, an interest in the authors of the hundred and fifty poems here collected. Explanatory Notes, in character with the design of the work *as a Poetry-book*, are given where necessary. And that arrangement of Notes and Text has been adopted which involves least difficulty and loss of time in reference, and also preserves to each page some individuality of appearance, a quality acknowledged to be one of the most valuable of incidental aids to memory.

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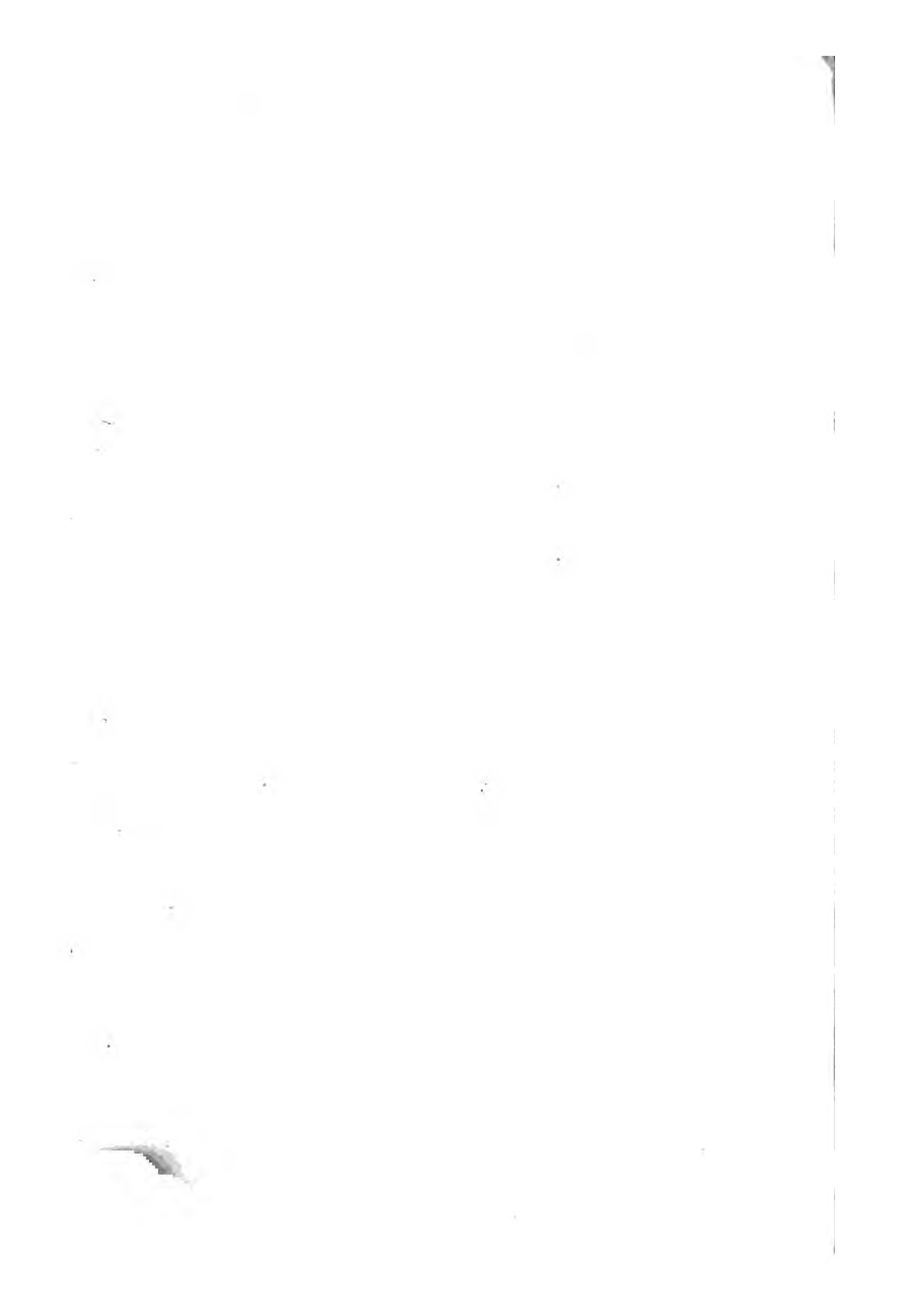
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