

## An Introduction to Clear Thinking

## A Clear Thinker

1. He knows the meaning of the words he uses. If a word has various meanings, he makes clear in what sense he is using it.
2. He distinguishes fact and opinion. He avoids announcing as a fact what is really an opinion, but uses such expressions as: I think, or I believe, or I infer, when he is giving an opinion or is uncertain of the accuracy of his statement.
3. He is cautious in accepting as true what he reads or hears, knowing how often a mere guess as well as a well-founded opinion is stated as a fact.
4. He often asks of himself and others: How do you know? That is, he insists on evidence in support of opinions. (Evidence is fact used as proof.)
5. He is especially careful of the person making a statement when ignorant of his subject.
6. He is cautious if the person making a statement has a motive for deception.
7. He is cautious if the person making a statement has strong prejudices. (Definition of Prejudice: A prejudice is a feeling of liking or disliking without sufficient grounds, which leads to false judgements.)
8. He is cautious if the statement made contradicts known laws of nature.
9. He refuses to have an opinion unless he has facts to support it.
10. He is tolerant of the opinion of others. That is: he is willing to listen to the arguments of others and to the evidence used in support of the arguments.
11. He is willing to change his opinion.
12. He knows the nature and effect of prejudice, and makes every effort to recognize his own prejudices.
13. He is suspicious of any opinion of his own if there is prejudice back of it.
14. To avoid prejudice he listens to both sides of important questions. He tries to get acquainted with people whose opinions, manners, customs, etc. are different from his own. Through such acquaintances, he becomes broad-minded.
15. He knows the nature of superstition and tries to recognize his own superstitions. (Definition of superstition: A superstition is a false belief capable of affecting human behavior.)

16. He understands the nature of emotion and therefore avoids basing conclusions on emotion rather than on reason. He does not believe something because he wants to, but only because evidence supports it.
17. Nevertheless, he recognizes the importance of authority, where it can be proved free of prejudice and superstition, and competent in its field. He does not refuse to accept statements from such authorities just because he dislikes the statement.
18. He does not generalize from insufficient facts for he knows how difficult it is to establish a generalization.
19. He is without conceit, yet aware of the importance of thinking for himself; he is without false humility, yet knows the limitations of his mind; therefore he has respect for himself and for others.

And this is just an introduction to our subject. There are many guides to clear thinking but whatever the field in which one is thinking, facts and the desire to think clearly come first. If these are not obtained, correct conclusions cannot be reached. For this reason, beware of institutions and persons who desire to determine your thinking and therefore seek to control your access to facts.

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In Animals below Man and in Plants

1. Variation.
2. Struggle for existence due to changes in climate. Enemies.
3. Advantageous variations.
4. Survival of the fittest.
5. Natural Selection.
6. Evolution of New Species. Hundreds of thousands of kinds of animals and hundreds of thousands of kinds of plants evolved from single celled microscopic cells during hundreds of millions of years!

Among Human Beings

1. The arrival of greater intellect than in any other species.
2. More and better brain; erect posture making use of arms possible; more opposable thumb and more flexible finger; better vocal organs.
3. Invention of toes.
4. Invention of language.
5. Struggle for existence reduced among plants by planting, weeding, watering.
6. New species of plants more useful to man evolved.
7. Struggle for existence among human beings lessened by

agriculture  
domestication of animals  
invention  
discoveries of sources of power.  
in time the printing press; conquest of  
disease; law, government, etc.

8. By 1939

A high standard of living made possible for all.

Organized opposition to all suggestions for the achievement of this standard of all progress in the human species is due to different factors from those that brought about evolution before man arrived.

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For Review

1. Into what two groups are living things divided?
2. Into what two groups are animals divided?  
Give examples of each group.  
Define: vertebra, vertebrate animal, invertebrate
3. In what particular do you resemble a fish more than you do a clam?
4. Name the classes of vertebrates, the simplest first. Give many examples of each.
5. Give the distinctive characteristics of each class: covering, method of breathing, method of locomotion, reproduction.
6. Are you more like a horse or a bird? In what particulars?
7. More like a cat or a monkey? In what particulars?
8. What animals do you resemble more than you do monkeys? In what particulars?
9. Classify man.
10. What is meant by classification? On what great fact is classification based?
11. Name the types of invertebrates and give examples of each.
12. Give the chief characteristics of each invertebrate type.
13. What are the chief differences between lower invertebrates and higher?
14. Name a list of animals from memory, lowest first, and in order. Include as many as possible.

I. Generalizations illustrated in our study

1. Animals resemble one another in varying degrees. This resemblance makes classification possible: species, genus, family, order, class, type. Pages 16-22
2. Animals can be arranged in types in order of complexity from the simplest to the most complex. pp. 19-20
3. Types of animals appeared in order of complexity during the millions of years in which life has developed on earth. pp. 23-33
4. The same statements are true of plant life.
5. No individual plant or animal has been proved to be generated spontaneously, i.e. without parents.
6. Every individual plant or animal develops from a single cell. In this cell, no organs like the adults' can be found. As the cell develops, it resembles in turn the lower types of life until before hatching or before birth it attains the characteristics of its species.

II. Opinions previously held, and proved false by discoveries made possible through the microscope and telescope, and through travel and exploration:

1. The earth is flat.
2. The earth is still and at the center of the universe.
3. All heavenly bodies move around the earth.
4. Life can originate spontaneously, i. e. without egg or spore or parents.
5. There has been no change in the earth since creation.
6. So-called fossils are not the results of life but were created in rocks.
7. The earth was created 4,004 B. C. and is therefore only a few thousand years old.
8. All species of living things were created at about the same time.
9. The descendants of every species have been of the same species as their ancestors. (Immutability of species.)

III. Questions for review.

1. What is a fossil? Examples?
2. What are stratified rocks?
3. By what other name are they called? Why?
4. What are igneous rocks? Examples?
5. What is proved by the fact that igneous rocks underly stratified rocks?
6. What is proved by the fact that by far the greater part of exposed rocks are stratified?
7. What do fossils prove concerning the order in which types of living things appeared on earth?
8. What is a geological era?
9. Of what facts are we certain concerning these eras?
10. Name the geological eras and give the dominant type of life in each.
11. Discuss the expression, a million years.

Fact. Opinion. Inference. Authority.

Hand in lists only.

1. Make a list of ten facts. Be prepared to tell why you believe each to be a fact.
2. Make a list of five opinions that you believe to be correct. Be prepared to tell why you believe each correct.
3. Make a list of five opinions that you believe to be false. Be prepared to tell why you believe each false.
4. What is the difference between fact and opinion?
5. What constitutes a good opinion?
6. Under what circumstances should statements be accepted with caution?
7. Give examples of correct inference; of incorrect inference. Give your reasons in each case for believing the inference correct or incorrect.
8. What is an inference?
9. Write true or false after each of the following:
  - (1) All opinions are inferences.
  - (2) All inferences are opinions.
  - (3) Incorrect inferences are false opinions.
  - (4) Correct inferences are facts.
  - (5) Gossip consists often of alleged facts and of incorrect inferences announced as facts.
10. Discuss the statement: A man can believe what he wishes.

Sixth Week. Science, Miss Brown

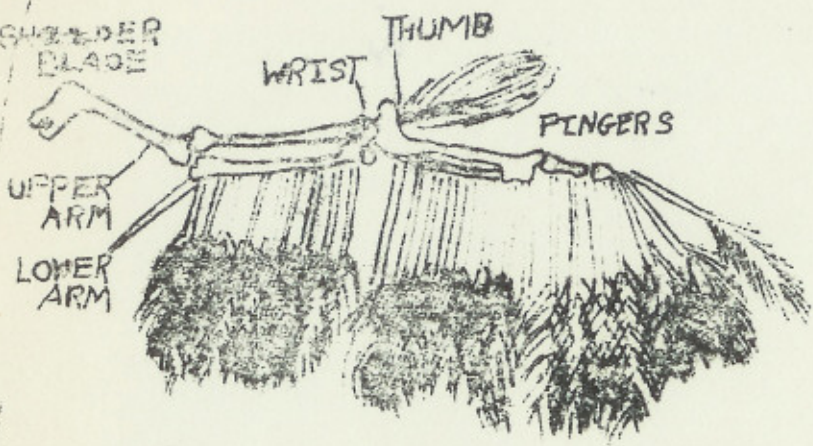
PREJUDICE; SUPERSTITION; BELIEF; SCIENTIFIC METHOD; GENERALIZATION;  
NATURAL LAW; CLEAR THINKING.

1. Make as varied a list as you can of examples of prejudices.
2. What is a prejudice?
3. What are the causes of prejudice? Do not be contented with ignorance for the answer, but carry your thinking further. Ignorance of what? Why such ignorance?
4. How can one recognize his own prejudices?
5. How can he handle them?
6. How can he help others to discover and handle their own?
7. Give as varied a list of superstitions as you can. Try to find big superstitions.
8. What is a superstition? How does it differ from a prejudice?
9. Can a prejudice produce a superstition? Examples?
10. Can a superstition produce a prejudice? Give examples.
11. Discuss the following statements for the purpose of discovering the nature and basis of belief.
  - (1) I believe that you are an honest person.
  - (2) I believe that it will rain tonight.
  - (3) I believe that fascism will not succeed in this country.
  - (4) I do not believe in evolution.
  - (5) Everyone has a right to his own beliefs.
12. Show by examples what is meant by scientific method.
13. What is a generalization? Give examples.
14. Can you give examples of natural laws?
15. What are the effects on the individual and on society of
  - (1) Prejudice
  - (2) Superstition
  - (3) Scientific thinking
16. Compare natural and civil laws.
17. List the essentials to clear thinking, both positive and negative requirements. Give examples at each point.

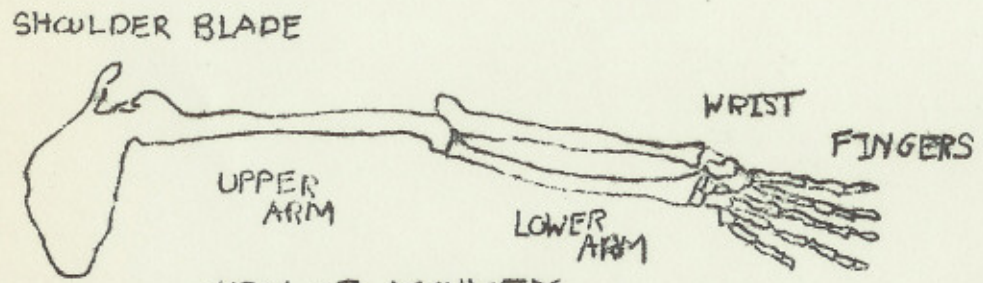
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Sixth and Seventh Weeks

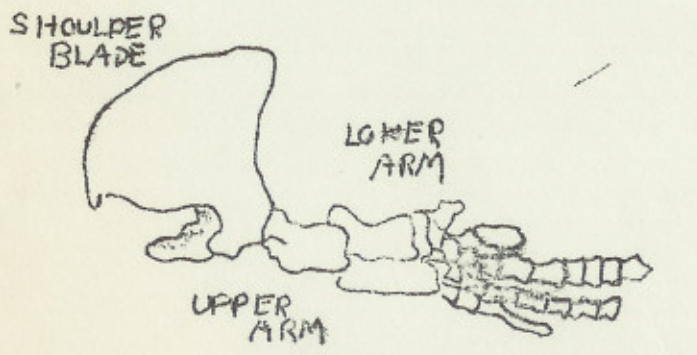
1. Compare ancient birds with modern describing the particulars in which this bird resembled reptiles.
2. What do you think may have been the relation of ancient birds to modern birds? To reptiles?
3. How do ancient mammals differ from modern mammals? What does this fact signify?
4. Name useless organs in a whale; in some large snakes; in all horses; in human beings. What do these facts signify concerning whales; concerning snakes; concerning horses; concerning human beings.
5. How can the ancestry of the horse be traced back a few million years?
6. Give several examples of new species of plants and animals that have been developed within a few hundred years.
7. How do you explain the resemblance among the species of a genus, such as the close resemblance of different species of thrush?
8. How is the varying degrees of resemblance among animals explained? In answering, fill out these blanks: Animals resembling one another more closely than they do others descended from a ..... more ..... than those that resemble one another less closely.
9. How is the order of appearance of types of animals explained?
10. Make the meaning of the term evolution clear.
11. Evolution explains seven sets of facts. Can you name them?
12. What other theory has been advanced to explain the origin of species? Why do some people accept it? Why do others discard it?
13. Who first presented abundant evidences of evolution? In what form? When?
14. How did Charles Darwin explain evolution, make clear the meaning of struggle for existence, survival of the fittest, natural selection, artificial selection?
15. What great developments in man changed the course of evolution? How?
16. Make as long a list as you can of the characteristics of clear thinking and illustrate each or the absence of each from your own experience. Your answer should include attitudes of mind as well as habits of thought and expression.



WING OF BIRD

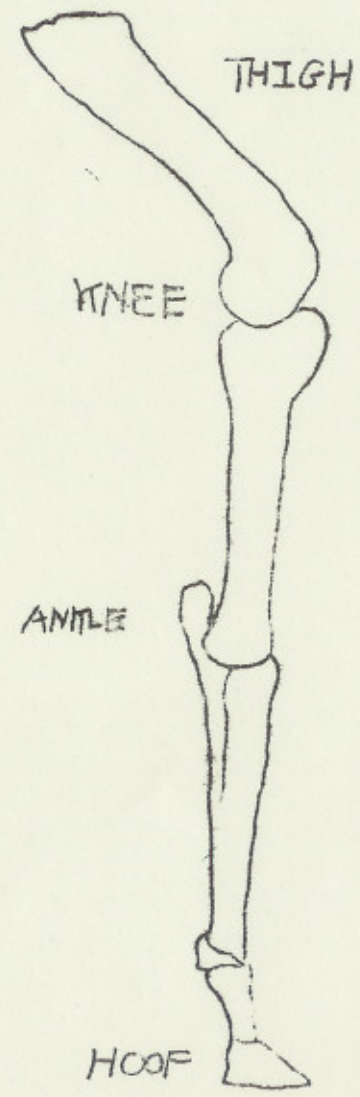


ARM OF MONKEY



PADDLE OF WHALE

LEG OF HORSE



LEG OF MAN

