THE PROBLEM OF METHOD

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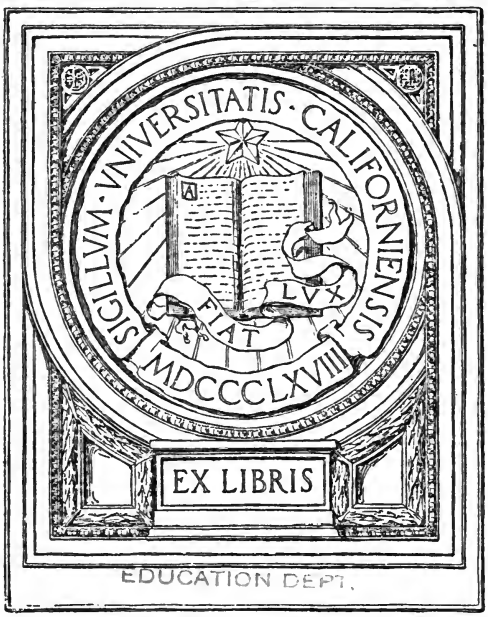

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THE PROBLEM OF METHOD.

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PREFACE.

In this volume it is the intention to consider method as essentially the psychological process of the pupil in obtaining possession of the subject-matter. Method in its general aspect is identified, not with the psychological processes in their diversity and as they appear upon the surface. It is identified with the fundamental movement of the self, which, upon reflective introspection, reveals itself in each of the diverse processes, such as sense-perception, memory, etc.

It is then to be shown that this fundamental mental movement specialized by the activity of the mind upon the special subject-matter of any given branch of study is the core of the method of that subject.

The three different views as to the nature of method and their relative importance are to be given brief consideration, and the idea of special method is to be illustrated with the subject of language.

CHAPTER I.

THE ESSENTIAL IDEA OF METHOD.

Mr. Andrewes was a good scholar, and (quite another matter) a good teacher.

MRS. EWING—*A Flat Iron for a Farthing.*

It may be said that the subject of method is just as capable of assuming the form of a distinct science as is any other one of the subjects dealing with truth, such as physics, chemistry, geology, botany, grammar, history, etc., for the reason that the sources of its principles and its central principle are perfectly definite. The principles arise, on the one hand, from the nature of the subject to be taught, and on the other hand, from the nature of the mind to be educated. Method itself may be said to be the mental activity of the learner, specialized by activity upon the subject being studied.

The doctrine of method has been compactly stated as follows: "The fact in the thing; the law in the mind; the method in both."* Close study will give a fuller and a more definite meaning to "the fact in the thing; the law in the mind, and the method in both."

"The fact in the thing" will come to mean some fact of a subject unified by having one of its attributes emphasized, and the other attributes subordinated to this emphasized attribute by the interest of the mind. For example, "the fact in the thing," in geology, may be a mountain range,

* WM. A. JONES, first President of the Indiana State Normal School—from 1870 to 1879.

with its attribute of *growth* or *becoming* emphasized by the interest of the mind. All of the other attributes of the mountain, thereby become subordinated to this one attribute of growth, and are considered only to the degree in which they contribute in making it clear.

"The law in the mind" will come to mean the great truth that the mind, in considering any fact, as for example the mountain range, seizes it first indistinctly, that is, somewhat in the form of blind feeling; that second, as thought, it analyzes the object under consideration into its definite elements, rather isolating each element as if it were complete in itself; that third, as thought, concentrating its attention upon the isolated attributes, it determines which is the predominant one. This unifying process is continued by considering each other element as revealing or bearing upon this predominant attribute—thus re-unifying the isolated elements. Finally, through repeated consideration of the object in these relations, this organized, unified view of it becomes habit, and thereby sinks into feeling again, becoming thus truly the self. In other words, "the law of the mind" will come to mean the fundamental three-fold movement of mind, movements three and four being essentially one. This movement is the mind's growth in freedom from blind feeling through definite analysis and organized reunifying to enlightened feeling.

"The method in both" will come to mean this fundamental movement of mind specialized by having as its subject-matter or content some fact of a branch of study with one of its attributes emphasized by the mind's interest, and all the others subordinated through this interest to that attribute. The method in a subject, then, is a mental movement; it is not, however, a mental movement considered abstractly, that is, apart from any content. Its content is the

particular object, attribute, or relation being investigated. This renders the mental act specific or particular.

If the foregoing presents the correct view, a method cannot be invented; it can only be discovered. It can never become a personal thing to be carried about with one and "applied" to a subject. If one does view method as a something which can be carried about and applied to a subject, it is likely to shut out the light of that subject as did the Extinguisher which the spirit in Dickens's Christmas Carol applied to the spirit of Christmas.

CHAPTER II.

THE DIFFICULTY OF THE PROBLEM.

It would seem then that the subject of method presents a very real problem. This is much at variance with the usual notion, which is that the subject of method is a very simple, superficial branch of study, having a problem easy of solution. The problem of method is, however, more difficult than merely gaining a knowledge of helpful devices. It is both difficult and important on the assumption that the one who is to gain a knowledge of method in the subject does not clearly possess the organizing idea or principle of that branch of study nor the close organization of the material of the branch of study upon the organizing principle.

The reasons for considering the problem of method to be both difficult and important are that a true insight into the nature of method in any given subject, involves:

1. In addition to the academic view of the subject gained in common school, high school, academy or college, a thorough knowledge of the organizing principle of the branch of study to be taught, and a close organization of the subject on that principle.

2. In addition to the academic view of the subject of psychology obtained in high school, academy or college, a thorough knowledge of the central principle of mental life and of the organization of mental phenomena upon this principle.

3. A knowledge of the mental process necessary in gaining a knowledge of the subject.

4. A knowledge of the following important truth: In themselves facts belong to no subject. They belong merely to the universe. Each fact has a large number of relations, a large number of attributes. Considering the fact in itself, any one of these attributes is just as important as any other.

a. The material or subject-matter. The first process in determining the method in any branch of study is constituted by the acts of becoming aware of the general material of the branch of study, and of discovering the characteristic attribute of its facts. What this attribute is, has been determined, to an extent, by the value the race has attached to the facts of the subject. In order to render any attribute the essential one of the fact, the mind must withdraw its attention temporarily from the other attributes and center it upon this one. Thereupon the mind's interest centers in this attribute, and the purpose arises to consider the fact with all of its other attributes in relation to this attribute, and so to consider all similar facts. If this is general, it causes the subject to assume definite shape. Prior to the emphasizing of this attribute, the facts of the subject were known to the mind only crudely, indefinitely. The one attribute, however, having been emphasized, as for example, the attribute of *growth,* of *becoming,* in the mountain range, the subject acquires in consequence, a core, a unity, an organizing principle. It now for the first time possesses a distinguishing mark. All facts viewed with reference to this attribute now belong within this subject, even if they may be at other times facts of another subject. They cannot, however, be facts of another subject at the same time that they are facts of this subject. They cannot in this other subject possess the same relations and the same emphasis of relations that they do in this.

With this emphasized attribute in mind as the central

truth of the subject, the student of any subject is able to determine definitely:

b. The scope of the subject.

c. The divisions and sub-divisions of the subject.

d. The relative importance of the divisions, sub-divisions and separate facts.

e. The successive movements or steps that would be taken by the mind of the learner in mastering any one of the facts of the subject in such a way as to bring into prominence the attribute around which the mind's interest centers.

Method, essentially, is just this act of the pupil's mind rendering subjective a particular fact of a given subject. This mental process may be viewed in two ways:

(1). The steps in any given case may be seen to be what has been termed above, the fundamental movement of mind, i. e., grasping a thing indefinitely; analyzing it into definite elements; reunifying these isolated elements into an organized, differentiated unity; repeating this thought of the organized unity in such a large variety of forms that through habit it is at last transmuted into enlightened feeling, thereby becoming a part of the individual himself.

It is seen that the mastery of this view of the movement necessarily belongs to the systematic study of psychology itself. This movement is, in truth, the organizing idea in educational psychology. Hence it indicates the true scope of the subject, its divisions, the relative importance of the divisions, etc.

(2). The other view of the steps to be taken by the mind of the learner, is what may be termed a special view. The special steps are this fourfold fundamental movement of mind specialized by the particular subject-matter of the branch of study. For example, the special

steps in studying the mountain range as a fact in geology, are:

(a). The indistinct, indefinite comprehension of the mountain range as to its growth, as to its becoming. This may involve sense-perception, memory, imagination, etc.

(b). Definite analysis of the facts or elements involved in the mountain range viewed as to its process of becoming. This involves the isolation of the prominent attribute—the process of becoming—the isolation of all other attributes, as locality, length, direction, height, present condition of structure, etc., and the distinct consideration of each. This may involve memory, abstraction, comparison, imagination, etc.

(c). Re-unifying, i. e., considering each of the isolated elements as to its bearing on the central attribute—the process of becoming.

(d). Such varied and repeated thinking of this organized unity as will result in habit; that is, in transmuting this thought of the organized unity into feeling—not, however, into blind feeling, since the feeling here indicated arises after definite analysis and definite re-unifying.

The mental movement here indicated under "(2)" is the core of the problem of method. Method in geology is this specialized mental process required in order to understand clearly the mountain range in its process of becoming. In order to see clearly what the method is, one must be able to see it first as the general movement. He is then to comprehend it as specialized through the definite subject-matter. As soon as the general movement has become specialized, one is able to see the different activities of mind involved in each of the four general steps. Thus he is able to see whether geology involves observation, memory, induction, etc.

f. A knowledge of the mental effect produced in the learner. While this effect may be prominently intellectual, emotional, or volitional, it is always all three, that is, the whole mental being is affected by the truth studied and by the process of studying it. One who understands the problem of method must be able to set clearly before himself the effect to be produced upon the mind of the learner by the investigation of any given subject. The first effect to be noted is the habit resulting from acting the distinctive act of the subject, as the grammar act, the geography act.

g. A knowledge of the means, that is, of the outside instrumentalities, or devices. These are two kinds, general and special. The general is the course of study. The special includes laboratories, and all modes of procedure in laboratory work, field work, questions, illustrations, work with maps; written examinations; discussion of examination papers, lectures, etc. The things referred to under "g" constitute that which is usually in mind when one speaks of method. It is, however, only one feature of method, and its external feature.

In order to understand this last, one must not only be aware of the external means themselves, appropriate to the subject; but he must also see the reasons underlying their use, and the order of their use. It will be noted that "4" of the thoughts indicated on the ninth page may be regarded as a feature of "1" on the eighth page. It therefore appears that there are two ways of dealing with the subject in order to gain a knowledge of it. In the first mode the learner, having, even in the beginning, a somewhat crude view as to the facts that belong under the subject, enters at once upon an examination of the facts. Gradually he becomes aware of their various relations, and on the basis of these relations groups them into divisions

and sub-divisions. He thereby gains a knowledge of the relations within the subject, and of the general relations of this subject to other subjects. The second mode of dealing with the subject includes all of these indicated under the first, and in addition, the more scientific process of seeking first the organizing principle of the subject; deriving from this a knowledge of the scope of the subject, of the divisions and sub-divisions, and of the relative emphasis of the divisions, sub-divisions, and facts. This central truth arises from the mind's (the race's) interest or purpose. The second, and higher knowledge of the subject thus indicated, implies that the teacher and the learner know:

a. That the subject acquires its core, its central truth, from the mind's interest in a given attribute.

b. What this given attribute is.

c. The mental process in making any given attribute the predominant one of the subject.

The study of the subject of psychology has the same two modes of examination. It will be seen that the second of the two thoughts indicated in "1" on page 8—the knowledge of the branch of study, and the second thought under "2" of the same page—the knowledge of psychology, are not really elements in method, strictly considered. They are, however, aspects of pedagogical work. In "e" on page 10, method itself is found. It will also be evident that "e" and "f"—the mental steps in mastering any given fact in a subject, and the effect to be produced upon the mind of the learner, constitute the basis for "g" or the seventh point—the outward means, the devices. The question now arises as to the requisites in order to be able to make substantial progress in discovering the method in any given branch of study. One often speaks of a specialist in a branch of study as having these requisites.

He has very important qualifications. He does not, however, seem to possess full qualifications. Sometimes one speaks of the specialist in psychology who has only a general understanding of the nature of the branch of study to be taught, as the one fitted to discover the method in that subject. He does possess a very important qualification, but as previously indicated, method cannot be "invented;" it is already there. It is to be discovered; it cannot be discovered in isolation from a systematic knowledge of the subject. One cannot evolve the method in geology out of inner consciousness, and then in the usual terms, "apply it" to geology. It seems incredible that any one has ever entertained the notion that the method of a branch of study can be discovered apart from and in ignorance of the branch of study. It seems equally incredible, that it can be discovered in ignorance of the nature of the law of mind, of the consequent stages of mental development, etc., even by one who is an expert in the branch of study. A branch of study, as physics or chemistry, does not consist merely of facts; it consists of *known* fact organized on a special interest or purpose of the human mind. The attribute of these facts emphasized by this special interest or purpose of the human mind becomes, therefore, the distinguishing mark of the facts and the key to its method.

The one best fitted, then, to discover the method in physics, chemistry or any other branch of study, is the one who has become a specialist in both the branch of study itself and psychology. This would give the ideal conditions. On account of the comprehensiveness of such conditions, it is very difficult to possess them. The aim is to approximate these ideal conditions more and more each year. The problem of method, can, however, be solved to a helpful degree, even by those who know of the branch of study only enough to secure a good grade of license to teach; and

who know of mind only that which would come from close observation of their own mental activities, from close observation of those of children as indicated by their words and outward actions, and from a brief course in the systematic study of psychology. It can be solved to a highly helpful degree by those students who have done all this, and who in addition have given a year or more to a systematic study of the branches of knowledge and of psychology from the pedagogical attitude.

CHAPTER III.

THE REAL PROVINCE OF METHOD.

INDISTINCTNESS AS TO SCOPE.

In this case the mere expression, "The Real Province of Method," is itself significant. It implies that the boundary line between the realm of method and that of something else is indistinct. That something else may be scholarship; it may be the realm of means, of external appliances, of devices. In the title there is the implication that method is, or has been, occupying an unreal, fictitious province. This fictitiousness may arise from the fact that scholarship is wanting, and that the attempt to determine a set of principles to control in that given realm, in which scholarship is wanting, results in an unreal province for method. Outer doing, devices, external means, with little or no attention to the truths that underlie them, may be pressed to the front as method. This would constitute a fictitious province for method. Scholarship alone may be exalted as if it were all in all. In that case method would not possess its real province. It means that an indistinctness prevails as to the true realm of method. To remove this indistinctness is the problem.

GROUND OF THE INDISTINCTNESS.

It is but natural that a certain indefiniteness, that a given degree of indistinctness should prevail as to the real province of method, in distinction from that of both scholarship and external means. The reason for this is that *activity* is the one thing to be found in the universe. Sometimes one

speaks of a thing and of activity upon it. But what is the thing itself other than activity? A block of compact steel seems perfectly motionless, yet every atom in it has a space of its own, and exists in a continual dance. Thus it is with every atom in the hardest granite. It seems, therefore, that only activity is. This activity rises from its most passive form as space, until it becomes an activity that can become aware of itself, as in consciousness. Scholarship, then, concerns itself with activity, and with activity only. Method, too, must deal with activity, and with that alone. The realm of device, of external means, is also one of doing, of activity. In this fact, that device is activity, that method deals with and is activity, that the subject-matter of scholarships is activity, rests the source of the indistinctness as to their respective provinces.

OBJECTIVE METHOD.

The activity that scholarship investigates appears in ever-recurring types. This activity may, therefore, appropriately take unto itself the term method. Every branch of study investigates activity as type or law; and law is method, and method is law. The past makes us its debtor by handing over to us this thought in the very term method itself. The word "method" signifies *according to a way.* But what is it that is according to a way? And what is meant by a way? If the thought above presented, viz., that there is nothing in the universe other than activity, be true, then it must be *activity* that is according to a way. And, moreover, the way itself is necessarily an activity. Then it becomes clear that the past transfers to us this thought which it had garnered from the fields of experience —a method is an activity according to, or in harmony with, activity. The first activity mentioned must be the real one, the one actually occurring, the one exhibiting itself in some

product. The second activity referred to must be the ideal one, the typical activity, the norm; it is both the end and the criterion of the real activity, of the one that is actually ocurring. *A method, then, is a real activity according to, and in harmony with an ideal activity.* It now becomes somewhat more clear that close thought only will render distinct the provinces of scholarship, method and devices, and likewise their unity.

Every branch of study has for its subject-matter certain particulars, certain phenomena that are essentially its own. These phenomena may appear in other branches of study as well as in this one, but they do not appear in those other branches in the same aspect that they do in this. The cotton plant appears as a fact in geography. It is also present as one of the phenomena considered in botany. As a geographical fact, however, it is not identical with itself as a botanical fact. If in this sense each branch of study has its own set of particulars, the activity that produces any one of these particulars must be typical. Why does one in looking at a piece of sandstone say, "This is not a good specimen?" It is because the activity that produced it was not according to the type, to the ideal. The activity that produces the facts in history or in geology, must be activity according to the type, according to the ideal. Hence, in this sense, activity is a method. The activity that produces a grammatical fact, the activity that produces a geographical fact, the activity that produces a historical fact, is a method because it is an activity which has as its end and criterion an ideal. Identity with this ideal must be the end of the activity, and the ideal is it criterion. It is with such a thought in mind that one says, "This is not truly a geographical fact; that is not really a grammatical fact; that ought not to be termed a historical fact." There

is, then *a method in the subject,* and this method is the activity that produces the individuals composing the subject-matter. Such activity is in the realm of scholarship.

The problem in a given branch of study is to investigate the nature of the activity that produces its facts; to determine the various phases thereof and their relations to one another. For example, the noun is a fact in grammar. The activity that produces it is different fom the activity that produces the lily of the valley. Grammar must investigate the first activity, botany the second. Each branch of study is, however, an investigation of the method that creates the individuals in its subject-matter. This activity may be termed the objective method.

Every branch of study, therefore, has its objective method. By this is meant the method, the activity, the force, the energy that produces the different individuals composing the subject-matter. For example, the subject of reading has what may be termed its objective method. This is the energy, the force, the activity required to produce the various individuals in the subject-matter; such as "Thanatopsis," "Evangeline," "The Burial of Sir John Moore," "The Legend of Sleepy Hollow," etc. Grammar has its objective method. This is the activity, the energy, the force that creates the various individuals included in the subject-matter of grammar; as, the noun, the abverb, the preposition, etc. History as a branch of study has its objective method. This is the activity, the energy, the force that created the various individuals in the subject-matter as, the battle of Bunker Hill, the Hartford Convention, the Secession Ordinance, etc. The investigation of such activities and their products is within the realm of scholarship.

When scholarship has revealed the essential nature of this activity, this objective method of the subject, it has grasped

the true basis from which may be inferred three important things.

Scope.—One of these is the scope of the subject-matter. It is the function of scholarship to determine this, to decide what facts belong within the range of the subject, and what ones are excluded.

Divisions and sub-divisions.—Another important thing that is to be inferred is the divisions within this subject-matter. The academic work in any branch of study, therefore, after making clear the scope of the subject, infers from the nature of the creative activity the divisions and sub-divisions belonging to the subject-matter, carrying such down to the particulars.

Relative Importance.—It is the function of academic work to investigate the relative importance of divisions, sub-divisions, and particulars. This is the third inference. The general knowledge of the subject and these four specific lines of investigation may be said to belong to the field of scholarship. Scholarship does not, however, as a rule, devote itself to the special topics mentioned. It accepts the scope, divisions, etc., from tradition or imposes them externally. It does not develop them from the organizing principle. The fact that academic work is of this nature, practically transfers these four topics to method.

SUBJECTIVE METHOD.

The Mental Steps.—In academic investigation the subject-matter is assumed to be a fact distinct from the examining mind; but as just stated there constantly arises a peculiar set of questions, such as, What is the relative value of this division compared with that? Of this sub-division compared with that? Of this particular compared with that? Then it becomes evident that there is a factor to be considered over against all this with which scholarship has

seemed to concern itself, and this factor is the mind which is to do the investigating. When one says, "What is the relative value of this fact as compared with that?" he evidently means the relative value to the investigator, arising from making subjective, from making an element of his consciousness, this fact, as compared with doing the same with that fact. When this inquiry arises, one begins to pass from the realm of scholarship over into the real province of method. For in such inquiry what is hinted? A second activity, a new activity. The activity that produces any fact in the subject of botany may be termed the objective method in botany. But here is another activity, the activity which renders this fact of botany subjective to the inquiring mind; the activity which transmutes the external fact of botany into self, into consciousness.

This activity is distinctive, that is, the act of consciousness which transmutes a fact of botany into self, has distinguishing marks that set it off from the activity which renders a fact of geology an element of consciousness. The activity that produces a fact in the subject of physics, is the objective method in physics; but the activity of the inquiring mind necessary to make this fact of physics subjective, necessary to make it an element of self, of consciousness, is the subjective method in physics.

Every branch of study, therefore, has both its objective and its subjective method. The objective method is the activity, energy, or force that produces the various individuals that constitute its subject-matter. The subjective method is the activity of mind necessary to transmute into the self any one of these facts of the subject-matter. The investigation of this subjective method, is within the real province of method. For example, the activity that produces the various facts in the subject of botany is the objective method in botany, and is within the realm of scholar-

ship. The scope of the facts determined is also in the realm of scholarship; as are likewise the divisions, the sub-divisions and the distinctions and unities of the particulars. But the nature of the activity that the mind performs in mastering any one of these facts, and the relative value of the divisions and sub-divisions of facts, because of the nature of this mental activity, these things are in the real province of method.

When in the subject of method, one has determined the essential nature of this conscious activity put forth by the inquiring mind in mastering a fact of the subject, two important inferences may be made. These inferences belong also to the real province of method, and the examination of the things inferred falls likewise within that province. What are the things to be inferred from the nature of the mind's activity in mastering a fact of a given subject?

Mental Effects.—The first is the *effect* produced upon the mind by thinking this fact, by identifying itself with it. This effect appears first as a definite mental process, a certain habitude of mind which the given subject alone is fitted to establish. For example, in language the definite mental process begins with the conceiving of an object. The mind may first seize the object in sense-perception, memory, imagination, but it ends by conceiving it, by generalizing it. The next movement is the forming of a purpose to express the object to another. Thereupon, the mind images the expression and then contemplates the harmony, or correspondence between the object to be expressed and the expression. No subject other than language is fitted to establish just this habitude, just this mental process. This may be termed the language act.

There is also the historical act. In such an act the mind first conceives the disposition, the mental condition of the people. This is succeeded by the consideration of the event

or object produced by this condition of the minds of the people. In the third place the mind becomes aware of the new disposition, of the new mental state belonging to the people as produced by the creation and the contemplation of this event. In the historical act, then, any event, as for example, the Civil War, appears as the result of a certain state of mind in the people; and as a stimulus to a succeeding result in their minds. To conceive a certain state of the public mind, to apprehend this as taking shape in some event or statute, to seize the new state of the public mind as an effect of contemplating this event or statute, is the peculiar mental process in the subject of history. This central effect, this essential process belonging to every subject, is one of the effects to be studied. The determination of the exact nature of this effect in relation to any given subject, belongs to the real province of method.

Under effect is to be noted also the emotional response. In history there arises an interest in the state of the public mind, in the event to be produced thereby, and in the reflex influence of this event. Just the nature of this, the various opportunities that life affords for its play, and its value compared with the knowledge of specific gravity and with other ideas and emotions—the discussion of all such things belongs under the real province of method. It would pertain to the subject of method to determine the main and the subordinate emotions to be awakened by the study of Dickens's "Hard Times," by the study of "Evangeline," by the perusal, in Dante's "Divine Comedy," of the lines setting forth the condition of the angry and the sullen. The occasions in life affording opportunity for the exercise of these feelings and the relative value of such mental states compared with a knowledge of cube root, with a knowledge of the surface of the United States, etc., would belong in the realm of method.

A third thing to be noted under effect is the volitional development, the tendency to a prompt and decisive choice, and to persistence in that choice. It would belong to the subject of method to determine just what tendencies toward choice and toward perseverance in a given course would be awakened and stimulated by a study of the condition of the inhabitants in the vestibule to the Inferno, by a study of Tito, in George Eliot's "Romola," as an example of fixation of character, by a study of Taylor's persistence in the Mexican War, and Grant's in the Civil War. Method would also seek to determine the various occasions in life that would call for prompt choosing and persistence, and the value of such mental traits along with those arising from the study of book-keeping, compound numbers, etc.

In method, then, occurs the examination and valuation of the entire realm of effects produced upon the self in its mastery of the facts of any subject. In this is seen the value to the teacher arising from a study of such subjects as aesthetics, ethics, logic, psychology and philosophy.

The main mental process in mastering a subject gives the key to the relative educational value as a subject, its value as a subject compared with other subjects.

Means.—The second thing to be inferred from the main mental process employed in mastering a given subject, is the means, devices, or instrumentalities appropriate to the direction and stimulation of this mental process, appropriate to the awakening and fixing of the mental effects naturally belonging to the subject. This includes a consideration of the teacher himself, the range of his scholarship, his disposition, the trend of his sympathies, the harmony of his character, his industry, his quickness of insight, his ability as a questioner, his spirit as an enquirer, and of the relation of all these qualities to the stimulating and directing of the mental process in the learner. Under this

topic is included not only the determining of the devices, but also the deciding of the order of their employment and the grounds therefor.

It seems, therefore, that to every branch of study belong not only *an objective method,* or the activity which creates the individuals of the subject-matter, a scope or range of the subject-matter, various divisions, sub-divisions, and attributes of distinction and unity in the particulars; but also *a subjective method,* viz., the mental activity involved in mastering any fact of the subject-matter, together with the effects, relative value and instrumentalities to be inferred therefrom.

The real province of scholarship includes all that pertains to the objective method and its inferences; and the real province of method includes all found in the subjective method and the inferences essentially involved therein.

Usually, however, in pedagogical schools, the process of discovering the organizing principle of the branch of study and the internal organization of the subject from its organizing principle, thereby revealing as developments from this principle the scope, the divisions and sub-divisions, and the relative importance of divisions, sub-divisions and facts, has to be assumed as an element of pedagogical training, because scholarship has often approached the branch of study from the outside, ignoring its internal development. It is not infrequent that the presence of any one organizing principle is denied or that the value of knowing it is questioned, even if the subject be admitted to possess such a principle. How a branch of study can be a science except on the condition that a single organizing principle unifies all of its facts is not clear. Nor is it clear why the discovery of this principle and the genetic organization of the subject from it is not the predominant trend of work after the student has the elementary knowledge of the facts of the subject.

CHAPTER IV.

SPECIAL METHOD.

The clearest idea as to the nature of method arises probably, from an examination of the process in a particular act of learning. The general aspect of this appears as the fundamental movement of consciousness. This fundamental movement is essentially threefold, but it may be viewed as consisting of four phases, inasmuch as iteration, resulting in instinctive habit may close the threefold movement. The process is not, however, four acts; it is a united activity consisting of three phases and a repetition of these.

The four aspects of the process of learning are:

1. Becoming aware of the object being studied as an undifferentiated unity. In this phase the mind apprehends the distinctions belonging to the object dimly, in the form of feeling, as it were. The truth of the object is present to the mind as a mere presentiment.* This any one can discover by examining with care the state of mind belonging to him when first giving attention to any strange object.

2. Knowing clearly the distinctions in the object, regarding each one as isolated.

As the first was the state of immediacy, the paradisaical condition of undisturbed harmony, so this second phase is the stage of negation, limit, determination. In the first a dim synthesis was made. In this clear analysis appears.

*In regard to presentiment as a first phase in knowledge, see Dewey's Psychology, pp. 306-307.

The mind has passed from the simple state of paradise into that of discord, opposition, difference. The self being essentially a unity is, therefore, dissatisfied with this diversity, and hence seeks unity—not, however, the undisturbed unity of the first phase.

3. Discriminating the isolated elements, inferring the dominant characteristic and organizing all the other elements according to their bearing upon this main attribute. Thus the mind returns, as it were, to paradise; but not to the paradise of immediacy. This stage is, it is manifest, one of synthesis; but since it is a synthesis following clear analysis, it is a much higher unity than the one grasped in the first place. If paradise was lost in the second phase of the mind's process, it is more than regained in this third stage.

4. A rethinking of the organized unity discovered in the third phase under varying conditions and illustrations, until the mode of activity, by passing into habit, becomes instinctive and hence truly the self. It thus appears that the mind's method in learning any object is an activity consisting of four phases. It is true that the fourth aspect could succeed either the first phase or the second, since either of these could become habit. This, however, would be a condition of arrested development. To avoid arrested development the mind in considering any object must consider it under the four aspects indicated, not permitting habit to arise at the conclusion of either the first or the second phase. The mind seems naturally to tend to examine any object by a concrete activity consisting of the four phases indicated. This involves the assumption that every object is essentially a unity manifesting various attributes.

In order to render the knowledge of this fundamental process in learning more definite, attention will be given to the assumption that every object is a unity revealing itself

in various attributes. Let the following sentence be regarded as an object or unity exhibiting various attributes and parts:

"I hear Aztec priests upon their teocallis
Beat the wild war drums made of serpent's skin."

This is the object which the mind is supposed to be considering in an act of learning. The object is a unity in both form and content. In content it is a unity in that it expresses a single object, viz., the person expressed by the first word as exhibiting himself in a given act. The special act is indicated by all the sentence following the word expressing the actor. In this portion of the sentence there is expressed a central attribute—that of hearing. This action has as its object that denoted by all that portion of the sentence beginning with the word, "Aztec."

This object of the action expressed by the word, "hear," has also its unity, namely, the mode of action characteristic of the object expressed by the word "priests;" that is, a person who is termed a priest is viewed as one habitually revealing himself in a certain mode of activity. This central element exhibits or reveals itself in the given case through various distinctions. One of these is expressed by the word, "Aztec," another by the expression, "upon their teocallis," a third by the expression, "beat the wild war drums made of serpent's skin." Each one of the distinctions has further distinctions within it. All these distinctions, or at least many of them, are in sub-consciousness during the first stage in the act of learning.

In the first phase of the mind's method in learning, it apprehends the entire object practically as an undifferentiated or fused unity. The distinctions are merely felt, they are not clearly comprehended. Out of this stage of dim knowledge the mind passes naturally into the second, that of clear distinction. The tendency in the stage of distinc-

tion is to be quite complete in the analysis. Each element is isolated in thought, becoming a distinct thing to the self. Isolation as a finality, however, is distasteful to the mind. The ego, therefore, by its own impulse, passes into the third stage, that of organization. This third stage in which the self becomes aware of the object as an organized or mediated unity is changed by repetition into enlightened feeling.*

The mind's process in learning may be illustrated further with the scalene triangle as an object. It will be advantageous to indicate, before considering the act of learning itself, the characteristics of the object.

Among its distinctions these are found, its surface, its three sides, its inequality of sides, its inequality of angles, its having no right angle, one angle larger than a right angle, two angles smaller than a right angle, its possessing the attribute of differing from an isosceles triangle, etc. All these distinctions and the others that are present are to the learner unknown. In rendering this object subjective, the first phase of the mind's process is that in which it apprehends it indistinctly, as a whole. In this stage its differentiations are but dimly felt, the learner having merely a presentiment of them.

Through dwelling upon the object, however, the mind gradually becomes aware of all the various distinctions, and in obedience to its analytic tendency these distinctions are strictly isolated. Therefore division or negation becomes too prominent. By continuing to examine the object the mind is led to seek unity. Through the acts of discovering and isolating the predominant attribute and relating the other characteristics to this central one, the mind organizes the object. Thus the object becomes truly a unity to the self.

*A helpful reference to enlightened feeling may be found on p. 249 of "Introduction to the Stndy of Philosophy," by W. T. Harris.

Continued attention to it in this aspect, results in habit. In becoming habit the activity is transformed into feeling, and since clear analysis has preceded it, the feeling is enlightened.

This fourfold process of the mind may be still further illustrated by an object from literature:

THE BUGLE SONG.

1. The splendor falls on castle walls.
   And snowy summits old in story;
   The long light shakes across the lakes,
   And the wild cataract leaps in glory.

Blow, bugle, blow! set the wild echoes flying!
Blow bugle! answer, echoes! dying, dying, dying.

2. O hark! O hear, how thin and clear,
   And thinner, clearer, farther going!
   O sweet and far, from cliff and scar,
   The horns of Elf-land faintly blowing!

Blow! let us hear the purple glens replying.
Blow, bugle! answer echoes! dying, dying, dying.

3. O love, they die in yon rich sky,
   They faint on hill, or field, or river;
   Our echoes roll from soul to soul,
   And grow forever and forever.

Blow, bugle, blow! set the wild echoes flying!
And answer, echoes, answer! dying, dying, dying.

—*From "The Princess," Tennyson.*

This object may be assumed to exist as a unity manifesting itself in a great variety of distinctions. At first, however, these distinctions are concealed from the learner. The poem is apprehended as a whole; its central unity and all the variety of distinctions are grasped dimly; they are merely felt, that is, the mind possesses a presentiment of their existence.

Before noticing the mind's fundamental process as revealed in the act of studying "The Bugle Song," a partial indication of the distinctions involved in it may be given:

There is, first, the distinction into expression and content. The expression is distinguished into language and image. The content may be separated into central thought and purpose. The language, as a form of literature, has in it many distinctions. Leaving them for later consideration, some of the distinctions under the image may be noted:

1. There is, first, the physical background. One element of this is expressed by, "The splendor falls on castle walls"; others by "Snowy summits old in story," "The long light shakes across the lakes," "The wild cataract leaps in glory," "the purple glens," "on hill, or field, or river," "yon rich sky." All these constitute a physical background for the physical echo.

2. A second element is, therefore, the physical echo. This is an element in the complex image of the bugler, bugle, the act of blowing, and the flying of "the wild echoes." Within these distinctions subordinate characteristics are found: The echoes become "thin and clear"; they are "sweet and far," resembling the "horns of Elf-land," etc.

All these, however, constituting the physical echo, seem to be employed as a symbol of some spiritual activity; some human deed. This introduces the central thought.

3. The conception of the central thought involves the distinction between the good deed and the evil deed. The beauty of the external background, and of the physical echo are in harmony, not with the evil deed, but with the good deed; hence this distinction of harmony is involved. There are reasons for holding that evil deeds cannot "grow forever and forever." However this may be, the author, as indicated by the beauty of the physical setting he has employed, seems to have in mind the good deeds only. In this spiritual activity are involved three distinctions:

It affects person after person.

It becomes more prominent, important, and substantial, as it passes from consciousness to consciousness. Herein is involved a further distinction, namely, the difference of the spiritual echo and the physical echo, as to growth and endurance. The purpose of the writer also appears as a distinction, the central one.

It affects the producer.

From the mind of the learner, however, all these distinctions are concealed. In the study of the poem he reads it through and thus becomes aware of it indistinctly as a whole. His apprehension of its central meaning and purpose, and of all the other distinctions, is dim. They are present to the mind in presentiment only. This first phase is natural, however.

Out of this presentiment the mind passes into that phase in which it becomes distinctly aware of all the attributes in the object. The attributes of distinction, however, are to be limited to the object as literature.

Rising out of this phase of differentiation, the mind passes into the stage of organized unifying. The poem has now become a true unity to the learner.

Through repetition of the act of thinking the poem as an organized unity, the activity becomes a habit. This is a return to feeling, but it is now enlightened feeling. The poem has finally become the learner's own, and he is, in a certain respect, the poem. It is to be noted that this fourth phase is merely the third in a more permanent form.

It is not strange that the mind exhibits these three stages in the mastery of any truth, since the ego is itself essentially a mode of activity characterized by these three elements. It exists first as undifferentiated, as a mere potentiality for activity. Acting, it differentiates itself from itself, and exists as object. The mind is always its own object. This is the second phase of its existence. As ob-

ject it is distinct from itself as subject. Continued examination of itself as object, however, shows that this object is the subject.

Having previously illustrated the three stages of mental action--(regarding the fourth phase as merely the repetition or retention of the third) it is now of importance to notice:

1. That there is a partial identity between the first phase in learning an object, namely, apprehending it indistinctly, and the act of being engrossed with the material and considering the material, i. e., space-occupying objects, to be the all in all. Being engrossed with the material is not, however, fully identical with the first phase of the mind's movement, because this first phase includes also failure to distinguish the varying attributes in the object. This, however, is to be noticed: each object is material and spirit, or meaning. The human being is material and spirit; the transom above the door is material and spirit, or meaning. The driver wheel on an engine is material and spirit, or meaning. It therefore follows that to be engrossed with the material, considering it to be the all in all, is, to a degree, identical with grasping a thing dimly.

2. That the concentration of the attention on the spiritual element as the all in all, is to a certain extent, identical with the second stage in the mind's fundamental movement. To thus consider spirit is to isolate it. The true position is reached when neither the material nor the spiritual is regarded as the total. The truth is found in the unity of both. To exalt the physical is to dwell in the first phase of thought. To isolate and exalt the spiritual is to dwell in the second phase, in the phase of isolation, of negation. The reason that this is termed isolation while the first is not, is that it requires distinction or analysis, to discover the spiritual.

3. That the third stage is to a degree, identical with the process of discovering the deeper unity which is seen to be the source or origin of both the physical and the spiritual.

Both experience and history show that these three phases are true, as to the child and as to the race.

In religion, for example, when a people is substantially in the first phase of thought, it finds its gods in external nature. When in the second phase it finds its gods in alienation from nature. Thus while the hills smoked and trembled in the presence of the Jehovah of the Jews, he does not appear as in unity with the physical universe; while ruling over it he is foreign to it. It does not reveal him.

The third stage in the growth of religious thought discovers as its God a fundamental unity, an activity which is revealed both in everything spiritual and in everything physical.

In philosophy, the same is found to be true. In the first phase of thought the first principle of the universe was found to be chaos, moisture, fire, air, and the like. In the second phase the spiritual was more prominent. Its wonderful properties were exalted and regarded as the criterion. Thus the sophists found the individual spirit of man to be the measure of all things. When, however, philosophy reached the third stage of thought, Socrates discovered that the characteristic which makes man the measure of all things is not his particularity. It is the divine element in him, in all other human beings, and in the Absolute Spirit. In this third stage of philosophy unity became prominent, because the first principle was regarded as the source of everything spiritual and physical, and as revealed in them.

In history this same truth is shown. In the first phase of thought the events are regarded as the history. This is abstract or partial. In the second phase a deeper

view is gained. The feelings, purposes and thoughts of the people underlying these outside acts are regarded as history. This view is also abstract or partial. The spiritual is no more truly the man than are his objectifications. The property that one has acquired is will objectified. Any work of art, is in a sense the artist. Any historical or scientific work given to the world is the producer. Therefore the concrete, i. e., the complete view in history, is not reached until one enters upon the third stage of thought. In this stage those concrete productions known as the institutions, viewed as produced by man's spiritual growth toward freedom and as reacting upon man are the history. Thus it is with everything. For example, the physical constituents and form of the door key are not the key. The view that they are is abstract, and hence incomplete. The thought of the door key is not the door key. This view is also abstract and incomplete. The thought of the door key revealed in a particular way, that is, its two sides taken as a concrete unity, constitutes the door key. This same process which has manifested itself in the growth of religion, philosophy, and history, reveals itself in the growth of the conception of method. It is natural that the method in any subject should be found in this fundamental movement of mind, which is just the mind's method. This method of consciousness is not, however, the special method in any particular subject. The distinctive method in any branch of study is analogous to the third stage of knowing. The reason for this is that special method is a relation. For example, method in geography is not this fundamental movement of mind; neither is it any external mode of activity. It is, however, the fundamental movement of consciousness specialized as it would necessarily be, in the mind's act of knowing a geographical fact.

In its general aspect method is geography in the funda-

mental movement of mind. Defined more accurately, it is this fundamental movement modified by the distinctive kind of subject-matter belonging to geography. In summarizing, it may be said that method is at first conceived as something external, as a mode of physical action, as a series of actions, consisting of directions, questions, illustrations, explanations, etc, since such actions bear a certain relation to the method itself, and are more easily noticed than the underlying method. As above noted, the universal tendency in the infancy of thought, is to be engrossed with the external aspect of a thing, and to consider this external aspect as the thing itself. This is, however, an abstract or incomplete view. The tendency to note the external aspect when in the lower stages of development, is no more a universal mark, however, than is the tendency to note the internal or spiritual aspect in the second stage, and to considered it as an isolated thing, and as the whole. To center attention on the spiritual aspect in its generality, viewing it as if it were the total object, is, as above noted, also abstract. This incomplete mode of regarding the spiritual is illustrated by such expressions as, "The method in arithmetic is abstraction and generalization," "The method in studying a botanical object is inductive." The more concrete activity of mind is the tendency to seek a fundamental or underlying unity in the two incomplete aspects discovered in the first two stages of development, each in its turn being considered as complete, as the whole.

These three tendencies (including under the third, habit, or enlightened feeling made instinctive) marking the three stages of development in the race and in the individual are, as above indicated, mere exhibitions of the essence of consciousness. The very nature of consciousness is:

a. To exist as mere energy, as potential, as immediate. (Subject.)

b. To exist as object, as alienation, as other than the knowing subject. (Object.) This arises in the stage of distinction or clear analysis, in which each analyzed element is conceived as if it were independent.

c. To exist as subject-object.

The activity which at first was conceived as object, as alien, is now seen to be the knower as well as the known. True unity now appears. This is the stage of differentiated unity. The three stages of conceiving as external, as internal, and as the unity of the external and internal, are an exhibition of what has been termed the fundamental process of mind. This process limited to knowledge is,

a. Apprehending the object indistinctly.

b. Analyzing it into its elements and emphasizing each element as if it were unrelated.

c. Organizing, i. e., discovering the unity of these elements.

Method is found in the relation of the facts of the subject to the fundamental process of knowing.

A fact in a subject is one element of the subject with a certain attribute of it emphasized according to the mind's interest. More definitely, then, method is the fundamental movement of mind in the examination of an object with reference to a given attribute that has been exalted and emphasized by the mind's interest. The method of a subject, then, is always one and the same. Method as a process does not change. Our conception of what method is, changes.

In the first stage of thought method is viewed as a set of external acts.

In the second stage of thought the mind looks beneath the series of external acts and discovers the implied series of psychological activities. These are viewed as the method.

Both of these views are abstract, and, therefore, incomplete.

In the third stage of thought,

a. The mind thinks beneath each psychological activity, whether it be sense-perception, memory, imagination, judgment, or any other, and discovers that each is merely a manifestation of the mind's fundamental movement—grasping the object dimly, analyzing definitely and reunifying.

b. It then examines the facts of the subject, noting as the essential thing the human interest or purpose that gives organization to the facts of the subject by furnishing the principle that makes the subject a distinct branch of study. Herein is discovered the organizing idea of the subject.

c. The mind then discovers that the process of the mind in learning the subject, i. e., the special method of the subject, is just the fundamental movement of mind specialized by the peculiar subject-matter of this branch of study.

Let arithmetic be considered for example:

According to the first view the method in arithmetic is a set of external acts, as, placing a number on the board by using a series of dots, showing the number of fours in the dots, finding the relations within each number, constructing in imagination concrete examples involving that number, expressing the results in a definite form on the black-board, expressing the results orally, etc.

According to the second view the method in arithmetic is some general psychological activity, as analysis, synthesis, deduction, abstraction, generalization, etc.

According to the third view the method in arithmetic is the fundamental movement of mind concerned with the following kind of an object: A number or activity viewed as measurer or means, and a number or activity viewed as measured thing or end, that is, the method in arithmetic

is the fundamental movement of mind concerned with ratio. This would be elaborated more fully under special method in arithmetic.

The average educational thought holds in general to the first conception of method. To a slight extent the second conception prevails. Here the attempt is to be made to explain the conception of method which belongs to the third stage of thought.

To do this it is necessary to set forth (1) the four things that lead up to method as a distinctive thing, central principle, scope, divisions, sub-divisions, and facts, relative importance. (2) Method as a distinctive act. (3) The two things resulting from method—mental effects and devices.

In beginning to treat more fully the different views of method, certain expressions indicating the prevailing idea as to what method is culled from various sources, popular, educational, and pedagogical are to be presented. These will be examined in order to determine:

1. Which indicate the first stage, namely, the conception that method is a series of external acts.

2. Which indicate the second stage, namely, the conception that method is a certain psychological activity in general, as sense-perception or imagination or induction—a mere psychological activity unspecialized by a distinctive subject-matter.

3. Which, if any, hint or indicate definitely the third conception as to the nature of method.

CHAPTER V.

VARIOUS USES OF THE TERM METHOD.

The following wide range of examples in the employment of the term, method, is given in order to afford the opportunity to give additional clearness to the idea of method by first, determining the exact nature of the activity shown in each example, and then testing the use of the term by the idea of method developed in the previous chapters.

The student should, before closing his work on this chapter, assure himself of his ability to discover and to express the conception of method in each of the cases given. In each case,

(1.) The presence of activity is to be shown.

(2.) This activity is to be shown to be regular and orderly.

(3.) It is to be shown as controlled by an *ideal.*

(4.) It must be noticed that the activity is that of,

(a.) The teacher.

(b.) The pupil or learner.

(c.) Vocations outside of the field of school education.

(5.) The activity of the teacher may be,

(a.) His external activity, as, his directions, questions, explanations, drawings on the black-board, etc.

(b.) His series of psychological processes in knowing or thinking the nature of the object which the pupil is to learn. This series may involve sense-perception, imagina-

tion, judgment, memory, conception, etc., according to the nature of the object being studied.

(c.) His fundamental conscious process. This is the process which is characteristic of sense-perception, memory, imagination, reasoning, and, in fact, of every form of consciousness. It consists of (1) an indistinct awareness of the object, which awareness may be in the form of sensation, sense-perception, memory, or in the form of any other process of knowing, (2) a clear consciousness of all the distinctions in the object, as, a knowledge of its various parts and attributes thought of as distinct or separate, (3) a consciousness of the central meaning manifested by the parts and attributes, and their order according to the degree in which they exhibit the central meaning.

(6.) The activity of the pupil is manifested in the same three forms as those given as belonging to the teacher.

(7.) The activity of the vocations referred to is usually viewed and spoken of as strictly external activity upon external material. The psychological activity present is not taken into account.

It is to be remembered that the third form of activity as belonging to the pupil constitutes method according to the thought set forth in this book. It is *general* method, or the universal process of the self. This universal or general process of the consciousness of the pupil as concerned with a specific kind of material, as, the surface of Florida, is *special* method, according to the present treatise. A helpful process of analyzing cases in order to determine the conception of method held by writers may be learned by attending to the following analysis:

1. Case "1," page 48.

This indicates (1)* that activity is referred to, (2) that

* The numbers (1), (2), (e), etc., refer in all cases to the same numbers on pages 40-41.

it is regular and orderly, (3) that it is controlled by an ideal, as suggested by the word, "after."

2. Case "2," page 48.

This case has two illustrations of the use of the term, *method.* The first, "a *method* of teaching languages," indicates (1) that there is an activity, (2) that it is regular and orderly, (3) that it is controlled by an ideal, as, an ideal in the consciousness of the teacher who conceived the method is implied. The expression also implies that the action denoted by it is the external activity of the teacher. (a) of (4) and of (5).

The second illustration, "a method of improving the mind," manifests the fact (1) that activity is denoted, (2) that it is regular and orderly, (3) that it is controlled by an ideal, (4) that either the external activity of the teacher (a) of (4) and of (5) may be referred to, or the series of activities of the learner may be denoted, (b) of (5). That is, "a method of improving the mind," may express the series of questions, the readings, the preparation of notes, the statement of plans, etc., a person may employ to improve the mind of another, or to improve his own mind. The expression may also be interpreted to signify the mental processes which will produce in one's own mind habits of alert attention, logical division, and increasing skill in the search for relations.

3. Case "3," page 48.

The illustration of this case is "Though this be madness, yet there is *method* in it." Hamlet who had been reported to be mad appears in a room of the castle reading. Polonius said,

What do you read, my lord?

Ham. Words, words, words.

Pol. What is the matter, my lord?

Ham. Between whom?

Pol. I mean the matter that you read, my lord.

Ham. Slanders, sir; for the satirical rogue says here that old men have grey beards, that their faces are wrinkled, their eyes purging thick amber and plum-tree gum, and that they have a plentiful lack of wit, together with most weak hams: All of which, sir, though I most powerfully and potently believe, yet I hold it not honesty to have it thus set down; for yourself, sir, shall grow old as I am, if like a crab you could go backward.

Pol. (Aside.) Though this be madness, yet there is method in't.

It is evident that this use of the word, method, implies (1) activity, (2) a regular and orderly activity, and (3) an activity controlled by an ideal. The activity does not relate to teacher or pupil, (a) or (b) of (4) but rather to an act in another vocation (c) of (4). The word, *method*, denotes either the systematic arrangement of an outside activity, i. e., the replies of Hamlet, their adaptation to a purpose, etc., or it signifies the purpose in the mind of Hamlet. It is as if Polonius said, "Though this be madness, yet the speaker has a distinct purpose in such actions and they are well adapted to the accomplishment of the end."

4. Case "1," page 49.

The word, *method*, evidently refers to certain outward acts of the bank officials, such as lending money on insufficient security, paying too high a rate of interest, using the funds of the bank in speculative enterprises, etc.

The term refers then to an activity, (1). This activity is regular and orderly, (2) but it is regular, orderly procedure in being irregular and disorderly in so far as banking principles are concerned. It is moreover, a series of activities controlled by an ideal, (3) that is, by the purpose to make financial gains. The method referred to does

not belong to teacher or pupil (a) and (b) of (4), but to a vocation which does not aim at education, although it necessarily educates, (c) of (4).

5. Case "7," page 52.

The word *wickedness,* denotes a particular psychological act of a person antagonistic to the accomplishment of the aim of life, which aim may be said to be the attainment of freedom. Wickedness may be a series of such acts or a tendency toward the performance of them. The word, *method,* as here used signifies the act of increase in this tendency. The tendency so increases in strength that slighter and still slighter stimuli are required to induce wicked action. The term, *method,* indicates, therefore, an activity (1), an activity that is regular and orderly, (2) an activity controlled by the inherent nature of law of the self, (3). This is an ideal, but it is not one of which the person is clearly conscious. He would, no doubt, be opposed to the results of the ideal were he conscious of them. The ideal in this case is more universal than the individual. It belongs to the inherent structure of human nature.

The activity denoted may be that of teacher, pupil or of a person in other relations of life (a), (b) or (c) of (4). The word, *meth*od, in this use, indicates the fundamental psychological law of the self, although the author of the sentence quoted may not have conceived the activity under the specific stages employed in this book in defining the characteristic process of consciousness. The essentials in the conception of *method* in the ethical realm are (1) the existence of a tendency toward evil, a fused, potential condition, (2) the choice of the evil and its performance, a stage of separation, of distinction, (3) the ceasing of the evil act and the return of the peculiar mode of energy involved in it, to the potential self with a strength-

ened tendency toward the performance of evil deeds. This conception of method as found in the ethical realm is essentially the notion of general method as explained in this book (c) of (5).

6. Case "15," page 54.

This is one of the extreme forms of the external use of the term, *method.* The word refers, of course, to an activity, (1). It also refers to a regular, ordered activity, (2). It is an activity controlled by an ideal, that is, by the conception in the mind of the launderer. He idealized and set to work the complex, orderly process, involving machines, persons, chemical action, etc., known as the laundering process. The activity referred to is found in one of the vocations of the general world of business. It is method only in the sense that it is activity regulated and ordered by an ideal.

7. Case "1," page 63.

The speaker in his address refers to two kinds of activity by the use of the term, *method,* and to another kind by the expression, "knowing the Word of God."

The first kind of activity is denoted by the following portions of the last paragraph on page ?: "Much is being said, * * * * * but another term for the word rut."

The second kind of activity is expressed by the following portion of the same paragraph: "And yet there must be *method.* He who works without plan and aimlessly will find his results without form, and void, chaotic."

The third kind of activity is referred to on page ? by the phrase, "to know the Word of God," and the fundamental aspects of this activity are denoted by the expressions, "spiritual grasp" and "intellectual grasp" on the same page.

The analysis of the "intellectual grasp" is given on

pages 65-72 and a general summary of the intellectual process is presented on page 73.

The first kind of activity is termed *method* distinctly by the speaker. He regards the activity (1), as regular and orderly (2), but evidently as not controlled by an ideal (3), at least, not by a rational ideal. The activity is regarded as the external mode of procedure by the learner engaged in the study of the Bible, and this learner is considered to be his own teacher, (a) of (5). This activity is thought to be very mechanical, very external, and hence, as alien to the subject matter, and to the spiritual nature of the learner. *Method* is assumed by the speaker to be a special device, a particular external mode of work which reflects merely the idiosyncracy, the whim of the worker. He, therefore, regards *method* as an external mode of procedure adapted to one person only, and as limiting the independence of others. In the early stages of education such external processes were regarded as the method of the teacher, but they have long since been relegated to the realm of superficial devices.

The second kind of activity is also named *method* by the speaker. It is regarded as activity (1), which is regular and orderly (2), and which is, moreover, controlled by a worthy ideal, plan or aim, (3). This psychological state, the ideal or purpose, is not the activity which the speaker refers to as method. The external process of the student of the Bible who is at the same time his own guide or teacher, interpenetrated by the worthy, rational ideal, is that which is called method.

In the present work each of these external activities is classed as belonging under *method* according to the first view, i. e., as external method, or device.

The third kind of activity is not named *method* by the speaker. It is, however, the activity which is considered

to be *method,* according to the second view noted on page ? . The character of the intellectual process in knowing the Bible is indicated by saying that it must be systematic. To be systematic the act of knowing must be, according to the speaker (1) in harmony with a carefully wrought-out plan, (2) comparison, (3) thinking out the growth of prophecy, (4) a special study of the various great books, (5) an independent effort, (6) a logical process, (7) a comprehensive act, and (8) an act resulting in habit. In so far as this is strictly a psychological process it is *method* according to the second view. If the speaker refers to outward activities of the student of the Bible which are controlled by and manifest these modes of intellectual activity, it is a systematized series of devices, or method according to the first view.

Within this third kind of activity the speaker mentions "comprehensive" knowing. He also calls attention to the act of mastering details. It is held that these details should be studied in the light of the comprehensive knowledge of the whole. The act of knowing is to be marked by "consecution, connection," that is, by "logical order." Finally, this process is to become a habitual form of mental action. This established mode of mental life constitutes the "definite results" referred to. What is the nature of such results? They are habits, or established modes of thought. They can be reproduced at will. They are the tendencies established by many separate activities. In this sense, the "results" mentioned by the speaker, are, essentially, the third element of the fundamental law of consciousness. In explaining, the systematic act of knowing the Bible, there is, therefore, a definite reference to the characteristic process of consciousness which constitutes method in its fundamental aspect as held in this book.

GENERAL MEANINGS.

(From Dictionary.)

1. Literal meaning *meta,* after; *odos,* a way.

2. An orderly procedure or process; regular manner of doing anything; hence, manner, way, mode; as, a *method* of teaching languages; a *method* of improving the mind.

Addison.

3. Orderly arrangement, elucidation, development, or classification; systematic arrangement peculiar to an individual.

Though this be madness, yet there's *method* in it.

Shakespeare.

4. All *method* is rational progress, a progress toward an end. *Sir W. Hamilton.*

5. A mode or system of classifying natural objects according to certain common characteristics; as, the *method* of Theophrastus; the *method* of Ray; the Linnaean *method.*

a. *Synonyms.* Order, system, rule, regularity, way, manner, mode, course, process, means; *method* implies arrangement; *mode,* mere action or existence; *method* is a way of reaching a given end by a *series* of acts which tend to secure it; *mode* relates to a single action, or to the form which a series of acts, viewed as a whole, exhibits; *manner* is literally the handling of a thing, and has a wider sense, embracing both *method* and *mode.* An instructor may adopt a good *method* of teaching to write; the scholar may acquire a bad *mode* of holding his pen; the *manner* in which he is corrected will greatly affect his success or failure.

POPULAR MEANINGS.

1. When Comptroller Eckels wrote that the failure of the National Bank of Illinois was "due to injudicious, reckless and imprudent *methods*," he was either not fully informed as to the facts, or he put the case much too mildly. *The Indianapolis Journal*, Dec. 26, 1896.

2. They never stop to think, if they know, how the introduction of the French revolutionary *methods* would work in this or any other country. *Terre Haute Express*, Dec. 26, 1896.

3. The report of the Inter-State Commerce Committee, published last week, brings out sharply some of the *methods* by which the railroads are evading the Inter-State Commerce Law. It deals especially with the traffic associations by which railroads now combine to keep rates above the competitive level. The agreement of these associations, says the Commission, quoting Judge Cooley, are drawn with "marvelous" ingenuity to evade the law against pooling. In those recently entered into, the words "so far as legally can be done" follow provisions for maintaining rates and dividing traffic which would not otherwise be distinguished from the pooling arrangements declared illegal. *The Outlook*, Dec. 26, 1896, p. 1171.

4. We realized that he had struck a blow in the world which will resound through its history. In him we find not the *methods* of the machine politician or of the crafty diplomatist, but the incorruptible citizen and patriotic statesman. *Speech of Mr. Lewis, Atlanta, Georgia.*

5. A survey and consideration of the present *methods* and results of our foreign mission work, when made from any high standpoint, cannot fail to produce in most observers a feeling of impatience and dissatisfaction. Not only

the hostile censor and the chronic doubter, but even the friendly critic and the hearty believer in the paramount duty of the Christian Church to send missions into all the world, finds in such survey and consideration much to condemn, or at least to seriously question. The attitude of the missionary towards the religion which he seeks to displace, the relation of the missionary abroad to the Board at home, the very existence of a home board in a true missionary economy, the relation of the foreign missionary to the native Christianity, the very right and expediency of the retention of permanent settled foreigners in a field where the nucleus of a native church has been formed—these and other considerations of equal gravity and importance present themselves for the consideration of the Church. Radical reforms are suggested in some directions, but even among those who would agree in ultimate ideals there is wide difference of opinion as to the expedient policy for the immediate future. That radical changes are needed admits of no doubt to many. While the great mass of the conservatives see no occasion for serious change, how can they understand why such questions should be raised?

There is, however, one evil in our foreign missionary work which finds almost unanimous recognition; for there are but few who would not agree with the recent declaration of a foreign missionary that "denominationalism is a luxury that should not be encouraged in the foreign field." While this sentiment is quite general, the condition which confronts us is a number of denominational boards, each working on separate and independent lines which run out into the furthest missionary field. What is more, this condition has in it evident potency of long life, which belongs to old and strong organizations, backed by a practical denominationalism and supported by a jealous fear which at present is more strong than an ideal sentiment.

In view of this condition, while we would neither ignore the more radical reforms hinted at above, nor lose sight of ultimate ideals, our purpose is to suggest an advance in missionary *methods,* which, not disturbing the existence of the denominational boards, nor interfering with the work in the fields, offers a forward step both immediate and practical. The idea which we would present is that of a general Missionary Board or Commission, which in some limited way, should unite and represent the several isolated denominational boards. Rather than to attempt to discuss the form of such a commission and meet the obvious objections which might be offered in the abstract, we would prefer to commend the idea by suggesting some of the directions in which such a commission would be of service sufficient to justify its creation. These directions of service are capable of a threefold division as affecting (1) the work of the several boards which might co-operate in it; (2) the work and workers in the foreign field; (3) the Church at home.

With regard to the separate boards, the Commission could be of general economic service by making easy a comparison of *methods* and expenses which would enable different boards to benefit by the experience of others, and so reduce expenses and improve *methods. The Outlook,* Dec. 20, 1896. *A Forward Step in Missions.*

6. Before Moses, sacrifice was well nigh universal. Many persons have the impression that Moses not only commanded sacrifice, but that it originated with him. No! sacrifice was the universal *method* of worship throughout the world. Its origin is pagan, not Jewish. It antedates Judaism. * * * Pagans offered their sacrifices everywhere, on every high hill and under every green tree. But this Levitical code said Israel should not do so. That is based on the idea that sacrifice is necessary, that one cannot have

favor with God unless he offers sacrifice, and that idea was by every *method* discouraged and denied. *Gospel Doctrine of Sacrifice. Outlook,* Dec. 26, 1896.

7. There is a *method* in man's wickedness. It grows up by degrees. *A King and No King, Act V, Scene 4. Beaumont and Fletcher.*

8. Who could have conjectured in advance anything of that widespread system of Totemism which Frazer has presented with such detail, the importance of which we are only beginning to recognize, and the significance of which we are scarcely beginning to comprehend? Indeed, it is doubtful if many of these early *methods* of thought and action will ever be really understood, for the reason that these customs so soon become merely traditional, and those who practice them may no longer attach a definite significance to them. In looking at *methods* of life that express feelings and notions so different from our own, we feel, so far as any comprehension is involved, almost as helpless as we do in watching the economy of an ant-hill. In the ant-hill there is a civilization very like our own, and yet, so far as the inner relations which it expresses are concerned, it is utterly foreign to us and unimaginable by us. *The Gospel of St. Paul,* by Charles Carrol Everett, p. 9.

9. However these two *methods* may, at the first glance, seem to resemble each other, there is a really great difference between them. The animal is identified with the worshipper in the Jewish scapegoat, for instance, where the sins of the people were laid upon his head. Among the Egyptians, the victim was sometimes marked with a seal bearing the image of a man bound and with a sword at his throat. This was to show that the victim represented the human sacrifice which milder manners had given up. *The Gospel of Paul,* by Charles Carroll Everett, p. 25.

10. It is hardly to be questioned that the sacrifice and the use of blood as a means of purification came to be regarded, to some extent, in the same formal and traditional manner. At least there must have been a tendency to the simple perfunctory use of such *methods* of winning the divine favor. Those by whom the gods were conceived in too spiritual a fashion to admit of the earlier and grosser notions of sacrifice might still feel obliged to perform them according to the customary routine of worship. *The Gospel of Paul,* by Charles Carroll Everett, p. 35.

11. As to the *method* by which the death of Christ took the place of the punishment which the sinner had deserved, Pfleiderer's statements lack the clearness which marks the greater part of his discussion. *The Gospel of Paul,* by Charles Carroll Everett, p. 127.

12. I thus fail to find any *method* by which the resurrection of Christ may be made to appear to have any vital relation to his atoning work, as this is commonly understood. *The Gospel of Paul,* by Charles Carroll Everett, p. 209.

13. He was with the Terre Haute Evening News in a responsible capacity and his brilliant and aggressive *methods* won for that newspaper a large circulation. *Terre Haute Express, Jan. 1, 1897.*

14. The Commission, however, recognized the necessity of other *methods* of securing such deliberation and such public notice, by providing that no important ordinance can be acted upon until several days after publication in the "City Record." * * * There are two *methods,* either one of which would make such knowledge possible. One would be to delegate the legislative powers to a small body of nine, twelve, or fifteen men, to be elected by the whole city on one ticket. The other would be to divide the city into a hundred voting districts, and provide that each dis-

trict should elect one, and only one, representative. *Outlook, Editorial, Jan. 2, 1897.*

15. Perfect *methods* make our work perfect. *Advertisement of a laundry.*

16. In order to accomplish this result the melter and refiner must have the pure gold to begin with. He must take all the gold out of the brick, but in such a way as to leave no silver or other metal connected with it. His *method* is an odd one. He takes the gold brick and melts it with a lot of silver. He does this because the acid which is to take the silver out of the gold will not work well unless there is plenty of the silver in the mixture. He knows just how much silver is necessary for the right combination, and he adds this amount to the gold brick. The combined metals are next thrown into a vessel containing nitric acid. This acid has a peculiar affinity for silver and for the baser metals. It has no effect upon gold, but it sucks all of the other metals out of the mixture and combines with them, turning them into a liquid which looks not unlike water. The pure gold drops to the bottom of the vessel, while the silver and other metals are left in the solution. The liquor is now drawn off, and the melter and refiner has a lot of pure gold, out of which he makes another brick or bar. *Method in Language VII—Devices, p. 55.*

17. Lieutenant Governor Nye ruled him out of order and decided an appeal to the Senate, saying the *method* provided for organization could not be departed from. *Terra Haute Gazette, Jan, 8, 1897.*

18. There should be some *method* of enrollment and a fee demanded as a condition precedent to the right to practice before the people's legislative jury. *Gov. Pingree's Message to the Michigan Legislature.*

19. The same regulation should be provided for city and town superintendents, as one year is not time enough for the putting to a test any superintendent's *methods. Report of Indiana Legislative Committee on School Law.*

20. Arrange to keep such paved streets clean by the latest improved *method. Terre Haute Gazette, Jan. 9, 1897.*

21. But if we proceed in our inquiries as we lately did, by the *method* of mutual admissions, we shall combine in our own persons the functions of jury and advocate. *Bk. 1, Sec. 348, Plato's Republic.*

22. It is not promised to bring prosperity to those who do business according to reckless and dishonest *methods. Crawfordsville Journal.*

23. The presidential electors elected last November held an informal meeting at the Denison House last evening to look into the law and learn what should be the *method* of procedure in casting the vote of Indiana for McKinley and Hobart. They did not talk of who should be elected messenger, and that question will be decided either by ballot or by lot at the meeting to-day. They will meet, according to law, in the hall of the House at 10 o'clock this morning, and organize by electing a chairman and secretary. They will then ballot for president and vice-president and will sign a certificate of how the vote was cast in triplicate, one copy being filed in the Federal Court, another being transmitted by mail to the president of the Senate of the United States and the other being sent to the same office by special messenger, under seal. Four or five of the delegates are asking to be made messenger, and none of them would refuse it. *Indianapolis Journal.*

24. When I assumed the position as chief of the Department of Geology and Natural Resources, I started out with

the expressed determination of making that department what its originators, in my opinion, intended it should be—a bureau of information, where any person can at any time procure a knowledge of the natural resources of our State. I did away with the unscientific *method* of county surveys, since the civil boundaries of a county have nothing to do with the boundaries or limits of a natural resource, and adopted the plan of taking up each of the great resources in detail, and preparing a monograph or special report thereon, accompanied by maps, cuts, engravings and tables of chemical and physical tests. *Report of State Geologist to Indiana Legislature, Jan., 1897.*

25. Monopoly's *Method.* It appears that the Pennsylvania railroad tried to pack the meeting of citizens which was held last night to protest against the gift of Delaware street made by the Board of Public Works to this corporation. Large numbers of railroad employes were present for the purpose of destroying the object of the meeting, and they might have succeeded if they had been as ably led as the citizens were. *Indianapolis News, Editorial, Jan. 12, 1897.*

26. One irritating circumstance in connection with the last treaty grows out of the peculiar *method* adopted by the State Department to give the text to the public. Two extra copies were made, one of which was sent to the Senate, and the other given to a Washington correspondent of a London newspaper. It was supposed at the department that the press association would be able to get a copy at the Senate, but the rules of that body prohibited this being given out at once. The press associations, therefore, had to order the treaty cabled back from London, whereat complaint is made of discrimination against American newspapers, and much is being made of it in Congress and out.

Mr. Olney is accused of being an Anglomaniac and of catering more to the English people than to his American constituency both in the matter and spirit of the treaty itself and in the *methods* of its distribution for publication. *Indianapolis Journal, Jan. 14, 1897.*

27. It also amends the election law by putting the Republican ticket in the first column and making a few minor changes in the *methods* of counting, chief of which is that it gives to any party nominating a ticket the privilege of having two watchers at the polls. *Indianapolis Journal, Jan. 15, 1897.*

28. Moreover its work in unmasking imposters and exposing the *methods* of fraudulent charity-mongers has been of great benefit to the community. *Report of Society for Organized Charity, Jan., 1897.*

29. "A few years ago," said a local newspaper man last night, " I saw as much of Mr. McCullagh as any man could. I knew his *methods.* He gave his time to his paper. In the old building where all were crowded together there was but one chair that any one could sit in, and that was occupied by the editor. The others were heaped with books, so that it was impossible for him to ask any one to be seated. He read the papers, and as he read wrote the crisp editorial paragraphs which have long been a feature of the Globe-Democrat. He never permitted himself to be bored. If he wanted an article he knew it, and would send the writer a check for it. If he did not, he would waste no words about it. It was said that his moods had something to do with his decisions. *Indianapolis Journal.*

30. It must be gratifying to all good citizens to note the energetic *methods* that obtain with the management of the local branch of the Young Men's Christian Association. The Sunday afternoon-meetings of the association are at-

tended by more men than any other service in the city, and that they are the sources of much profit as well as of great pleasure there is no doubt. Their success is perhaps due in large measure to the restlessness of the General Secretary. He is a firm believer in the efficacy of advertising—a species of orthodoxy that some business men have yet fully to grasp. When he starts out "to work up a meeting," as he phrases it, he does not rest until he has accomplished his purpose. On Saturday nights the citizens of Terre Haute are greeted by announcements in chalk written on the sidewalks and at other conspicuous places telling them that "tomorrow afternoon Mr. So-and-So will speak at the Young Men's Christian Association rooms." As a rule, also, the same announcement is made in the various churches on the next morning and the fact is given publicity in as many ways as possible. *Saturday Evening Mail, Jan. 16, 1897.*

31. It is a simple and antidotal volume of advice and suggestion about the manners, customs, habits and moral qualities and *methods* of work which a priest ought to cultivate. *The Outlook, Jan. 16, 1897. The Books of the Week.*

32. The Board of Superintendents, acting as a central body for the whole school system of the city, has attended to all appointments and promotions; the superintendent states it to be the present *method* of administration. *The Outlook, Jan. 16, 1897. The Teaching Profession.*

33. He did it more cleverly than the inventor and his efforts in the performance were an improvement upon Houdin's *methods.* Heller was the first magician to introduce a lady confederate and assistant in the magical entertainment. He likewise discarded the use of all visible apparatus, curtains and tapestries. Wyman is perhaps the first magician the present middle age can recollect of its

childhood. *His methods* were clumsy in contrast to those of latter day magicians, but his wonders seemed marvels and his crowning feat of extracting real eggs and a live chicken from an apparently empty bag was a feat beyond which nothing appeared more startling. He combined ventriloquism with his entertainment and a large source of his fame rested upon his powers in this species of entertainment. *Indianapolis Journal, Jan. 17, 1897. Magic and Magicians.*

34. The doctors had failed in the attempt to secure pictures of the thoughts in their minds, and only attained their purpose by the indirect *method* of having them impressed first on the brains of others. Before the subjects were placed under the hypnotic spell each was instructed to think of nothing but his own hand. Each imagined, then, that the laboratory was full of hands and, judging by the distinct impressions received of a photographic plate, the hands were really there. *Indianapolis Journal, Jan. 17, 1897. Thought Photography.*

35. The district *method* of electing county commissioners works very unjustly in this county. Under the present system Indianapolis, which with its suburbs, has nine-tenths of the population of the county and pays eight-tenths of the taxes, has only one of three commissioners. The result is that it has little or no voice in the action of the board, being always voted down in matters of local interest by the country members. If the district *method* of electing commissioners is to continue in general, an exception should be made of counties containing cities of a certain population. *Editorial in Indianapolis Journal, Jan. 20, 1897.*

36. The Associated Press report of the scene with Speaker Reed says that the committee of members pointed out the necessity of the buildings mentioned, and said that

it was evident that the majority of the House desired their consideration. Speaker Reed asked them if they were aware that the government was running behind in the matter of revenue at the rate of $58,000,000 a year. It was a question of the ability of the government to meet and pay its obligations. The committee replied that the bills did not appropriate a dollar, but only fixed the maximum of cost of the buildings, the appropriations being left in the hands of future Congresses. Mr. Reed said that he did not approve of this *method* of mortgaging the revenues of the government, to which the committee replied that they could not mortgage what did not exist and thought that the subject of making appropriations could be safely left to future Congresses. The committee came away feeling that it was not a cheerful outlook. *Indianapolis Journal, Jan. 21, 1897.*

37. An operator comes forward, and under his guidance we look into the *methods* of attending to a most important branch of the fire service—that of receiving and recording an alarm of fire from a street box, and transmitting the same to the engine companies nearest to the fire, in the shortest possible time. * * * After this when we see a fire company responding to the call of duty, we will better appreciate the *methods* that have been used to send them on their noble errand. *St. Nicholas, Feb., 1897.*

38. Au Gau gazed scornfully upon the scene, as these demon-like figures danced in and out of the smoke and fire. "Look at those red-headed demons! They seem to be fireproof," he remarked to his uncle. After pondering a while, he continued: "I have been told that all this noise, fire and smoke is to drive away evil spirits; but it seems to bring them, like flies around a sugar bowl." The seeming failure of this noisy *method* of combatting the bad spirits set his young mind to thinking. *St. Nicholas, Feb., 1897.*

39. Mr. Carlisle is an able man, and, as politicians go, a good deal of a statesman, but he has not developed any originality or ability as a financier nor shown any familiarity with financial *methods. Indianapolis Journal, Jan. 30, 1897.*

40. WASHINGTON, Jan. 30.—Communications from the church bodies in various parts of the country are being received by members of the House committee on military affairs regarding the action of the secretary of war in granting permission for the erection of a Catholic cathedral building on the government grounds at West Point. The matter seems to have brewed a commotion nearly equal to that which has raged over school appropriations if the letters coming in are a sign. Several communications from bishops, ministers of organizations, as well as from laymen, have been received. Three other religious bodies have applied for information as to whether they will also be allowed to place church buildings on the West Point grounds. It is possible that the matter may be brought before Congress by a resolution of inquiry or some other *method. Indianapolis Journal, Jan. 31, 1897.*

41. The antiquity of the legal *methods* is curiously illustrated by the recent discovery of the oldest will extant. This unique document was unearthed by Professor Petrie at Kahum, Egypt, and is at least four thousand years old. In its phraseology the will is singularly modern in form, so much so that it might be admitted to probate to-day. *Indianapolis Journal, Jan. 31, 1897.*

42. The Administrative Board of Libraries, Laboratories and Museums at meetings held on November 28, 1896, and January 23, 1897, took the following action:

In the place of Special Regulation No. 3 governing Departmental Libraries, the following was substituted:

All officers of instruction may, with the approval of the appropriate departmental adviser withdraw books from the library of their own department and retain them for a limited period to be agreed upon by the borrower and the departmental adviser.

In the carrying out of this rule, the following *methods* shall be employed:

1. The records of withdrawal of books are to be kept in each departmental library in an instructor's loan book provided for that purpose, and the drawer shall record his name, etc., title of the book, accession number, and the date of the withdrawal.

2. The departmental adviser in connection with the head of the department shall determine the conditions under which books may be withdrawn from a department library, and inform the general library of these conditions.

3. The departmental adviser may through the general library call in the book at any time. *University Record, Chicago, Jan. 29, 1879.*

43. No one has blamed Mr. Rohl-Smith for accepting a commission which was offered him by those having legal power to make the offer. Those whom the society has blamed are the officials who selected a work of art for other than artistic reasons. It is not necessary to speculate as to the motive of those who have misled him into taking such a stand. They have succeeded, however, in furnishing another example as to *methods* which, in this instance, the society has deplored, and have done everything possible to preclude even helpful criticism until it is too late to be of any use. *Statement of National Sculptor Society, N. Y., Jan. 31, 1896, Indianapolis Journal, Feb. 1, 1897.*

44. The junketing was harmless, but it helped to overshadow the business side of the visit and excited rather an

undue amount of censorious comment. In spite of this feature, however, the visitation *method* continued because it seemed to be the only available means of getting the desired information. The bill passed by the House, if it becomes a law, will end the junketing business. It provides that after an election of members of the Legislature, and at least forty-five days before the session opens, the Governor shall appoint a commission consisting of one senator and two representatives-elect, who shall visit and inspect all the state institutions and report to the Legislature regarding their condition and needs. The commission is allowed thirty days in which to visit all the State institutions, and as there are fifteen of them in different parts of the State this is not too much. *Editorial in Indianapolis Journal, Feb. 1, 1897.*

EDUCATIONAL MEANINGS.

1. "There is much yet to be said upon the well-worn subject, Bible study. There is still occasion to ask the question—and to ask it with all the emphasis which language can furnish—is the Bible of all books, the book to be studied? Shall not our children in school, our sons and daughters in college, our young men in the theological seminaries, study this book, whatever else they may or may not know? Shall we teach the most minute and the most prurient details of Roman and Greek history and literature, and allow, yes, compel an ignorance of even the general features of a history and a literature which in spite of every untoward circumstance have penetrated and elevated the thought and life of humanity as have no other? But it is not my purpose, at this time, to discuss the subject of Bible study.

"There is much also to be said, more by far than most people imagine, on the closely related question, Bible study. Please note place of emphasis, Bible study (emphasis on

study.) The mass of those who count themselves Bible students never study. They read, perhaps: they seldom think, they never study. Shall we continue thus to deceive ourselves? Shall we substitute the most hurried and superficial perusal of a verse or chapter for an earnest, faithful examination of that passage, and allow ourselves fondly to suppose that we have studied it? Shall that which, in some cases, is worse than no reading at all, be falsely dignified and dishonestly branded as study? But it is not my purpose at this time to discuss the subject of Bible study.

"Much is being said in these days about the methods of Bible study. What method shall we adopt? is the question asked. Is there one method, and are all other methods to be cast aside? Will two men ever do the same thing best in the same way? Is it not true that a method helpful to one man, or set of men, is often ruinous to another man, or set of men? Shall we not seek independence, not only of spirit but as well of method, of any and every method? The word method is too frequently but another term for the word rut. And yet there must be method. He who works without plan and aimlessly will find his results without form, and void, chaotic. But it is not my purpose at this time to discuss methods.

"We who are gathered here to-day are Christian men. There is in the mind of each one of us a firm purpose, or at least a strong desire, to know the Word of God. I have in mind both kinds of knowledge—that spiritual grasp of the sacred book, that personal experience of certain truths which will enable us to make practical use of the same in the hand-to-hand work of the street or inquiry room; that knowledge the ability to use which measures our strength in Christian work. This kind of knowledge does not come at once; the memorizing of verses here and there will not

bring it. It is the highest of possessions. It is the deepest of all knowledge. It will come in time to the child of God, but to him only in time—after long and persistent effort.

"But back of this spiritual grasp, or underneath it, there is a knowledge of another kind. Must I, for lack of a better term, call it intellectual? The two make one; they must not be separated; either without the other will inevitably lead to error.

"An intellectual grasp of the Scriptures will lead to what? A mastery, so far as possible, of the details of Bible history; a putting together of this and that event; an investigation of the great epochs; a study of the great characters; an inquiry into the cause of things as they are represented in Scripture and their relations to each other. An appreciation of the literary forms of the various books; a knowledge of the circumstances under which they had their origin; the purpose each was to subserve; the people for whom they were originally written; their history. An ability to interpret; to apply principles of interpretation common to all writings; a familiarity with those special principles demanded by the unique character of the Bible. It is for this kind of knowledge—critical, it may be called, yet necessary to a conservation of the truth; intellectual, yet forming the basis of the deepest spiritual work—that we who are here to-day ought to strive.

"The work before us is stupendous. The field is an inexhaustible one. An intellectual grasp of the contents of the Scripture is not something which falls into one's hands without putting forth of effort. Effort, indeed, may be put forth, and the result not come. But the least one can do is to make the effort.

"What, now, shall be the character of the effort put forth? It is this which will determine the character of the results. Describe to me the effort which at the present time

is being made in any given section or by any individual, and I will calculate for you the results, which are being attained in that section or by that individual. Everything turns on the effort, and is it not true a single word may be found which will describe the ideal effort, and that word is systematic?'

"Now, let me ask this question: Has the effort which you have been making all through life toward a comprehension of the facts and truth of Holy Writ been a systematic one? Are you ready to answer yes? Do you not like to confess that it is not? Before committing yourself one way or another, before confessing that you have not been systematic, before dogmatically asserting, at the risk of being wrong, that you have been systematic, let us inquire what is meant by 'systematic.'

"Have you had a clearly defined purpose in your work and has that purpose been a correct one? The stream never rises higher than the fountain. Your work will never reach higher than your ideal. How is it now? Is the ideal in your case a low one? What have you been aiming at? There are some who study merely to satisfy themselves. They are always taking in, always adding to their store of knowledge. This knowledge, great though it may be in amount, valuable though it may be in character, is of little or no practical value to those who possess or those about them. To this class belong many of those who are known as scholars. Am I here to speak against scholarship—against the most critical and painstaking investigation? God forbid. But is it not true that from the men who have this great knowledge, the men whom God has given the opportunity to obtain it, we have a right to expect—yes, demand—something by way of return? There are on the floor from various quarters of our country men of the ripest and highest scholarship in biblical studies. Shall they not

open up their hearts and come down from their lofty pedestal and take an interest in the promulgating of intelligent ideas concerning this sacred volume? The time has passed when scholarship should be divorced from popular work, when men who have great stores of knowledge shall stand aloof from the masses.

"But there are some who go to the other extreme—they are always giving out, never filling up. In the treatment of a Scripture passage it is entirely sufficient to ascertain what seems to be the great lesson inculcated and to present this lesson to those who are dependent on them for the bread of life without any effort, either to master for themselves the substance of the Holy Scripture or to help others to do so. These people are always applying, seldom studying, never teaching the sacred word. And what do they apply? Their own ideas, not the Bible. The pupils may remain under their charge for many years and be none the wiser as to the real contents of the Bible. My friends, what is our great purpose in this study? Do we belong to either of the classes I have briefly described? If so, we are laboring from a point of view which is inconsistent with a systematic Bible study. What, then, should be our purpose? To know the Bible, book by book; to become saturated with its thought and its spirit, and then to lead others to the same knowledge. The more God has allowed us to know of its wonderful truths the greater the responsibility which rests upon us. But, however much or however little we may know, it should be our great aim to teach that, and not something else as a substitute. Why will men, teachers and preachers, with a self-conceit which is incomprehensible, imagine that their thoughts about the Bible, their deductions from its pages, are of more value, are more greatly to be desired, than the precious words themselves? The world is starving for the Bible. A systematic study will be one grounded on

the principle that the sacred word itself is to be studied in such a manner that it may again be taught to those who need it, and not man's feeble ideas concerning it. Have you in mind, my brother, the right purpose?

"But your effort, to be systematic, must be submitted to another test. Has it been in accordance with a carefully wrought-out plan?

"Will you recall the steady growth, the wonderful progress of Israelitish history from the smallest beginning, through trial and trouble, then victory and possession—the organization of the nation by Samuel, the establishment of the monarchy by David; its disruption at the death of Solomon; apostasy and sin followed by the destruction of the northern nation; again the apostasy and sin and the long captivity; the return, almost pitiable in contrast with the former glory, the bickering and strife, the gradual dying out of the national fire, that divine inspiration which had burned for so many centuries? Has your plan of study included a careful comparison of these periods, their relation to each other, and the special part played by each in the great drama—the world's redemption?

"With your knowledge of Israelitish history thus gathered and systematized, have you gone back again to the beginning and taken up the study of the prophecy (interwoven so closely with that history as almost to be identified with it), and followed, generation by generation, century by century, the growing fabric of the revelation of God; the lines, branching out in this direction and that now dim, now resplendent in glory; new lines starting up and moving side by side with the old, until all lines, old and new, converge in the life work and death of the Christ?

"The man who has not studied prophecy in this way noting carefully the origin and development of each of the many ideas which, taken together, proclaim the coming of

a deliverance and Deliverer, a salavation and a Savior; the man who has not connected the prophetic utterances with the great events of history and personal experience from which they sprang and of which they form a part, has he done the work worthy of being called systematic?

"Has your plan made provision also for the great books of Old Testament philosophy, Job, Proverbs and Ecclesiastes; for that collection of laws, the most wonderful the world has ever seen? Have you ever made a systematic study of that most sacred and fascinating of all subjects, the life of Christ; or the life and the writings of the Apostle Paul? The question is, my friends, are we studying according to a plan which includes all these subjects and many more, in an order which will enable us most clearly to grasp their meaning, and the mutual relation which they sustain to each other? Have you any plan at all? Is it perhaps possible that some of us have been moving around in a circle, and not forward? Are some of us feeding from hand to mouth, not knowing, not even caring what is to come next? Without a plan, flexible perhaps, yet definite, there can be no systematic study.

"But again: Our work, if it is to be in the best and strictest sense systematic, must be independent. A machine may be systematic, but the human mind, if its system is only that of a machine, would better be unsystematic. The student makes no real progress who is satisfied with having learned what some one else has said concerning the meaning of a verse or the scope of a passage; who always follows; who is always leaning upon another. Such a student crams; he does not digest. Is cramming consistent either with any true purpose or any prepared plan? Such work is done for the moment, not for all time. Is such work honest, not to speak of its being systematic? The lack of independence explains a multitude of failures under our

present system, admirable as it is. Many of us, strangely enough, suppose that we need only read the notes published in any sheet, or perhaps only the practical lessons suggested, and in time we will come to know the Bible. This is wrong, partly because these notes are in too many cases the merest trash, and partly because, even when most excellent, they are not properly studied. The Bible student who feels that the preparation of his Sunday school lesson is all the Bible study which he need undertake, who is satisfied to study that lesson as he would be ashamed to study a lesson for the school room, often, oh, how often makes an out-and-out failure. Crutches are freely furnished us these days—so freely indeed, that too many of us have forgotten how to stand on our own feet. If our work is to be systematic, it must be planned and executed independently, and not in slavish dependence upon some one man or set of men.

"A systematic study of the Bible will be a logical, philo sophical study of it. It will not be the mere memorizing of a list of names and dates; the naming of the most important cities, villages, rivers and mountains. It will not be a study of a verse here and a passage there without considering that verse or passage in the light of the context. It will not be the citing, as from heaven, of words quoted by an inspired writer from the mouth of, perhaps, Satan himself. The attempt to exhaust the meaning of a verse, without first a study of the chapter of which the verse is a part, or of a chapter without first a study of the book of which the chapter is a part—such an attempt is illogical; it is more, it is absurd. There must be logical order; there must be consecution, connection, or the work will be defective. We must know who it was, where it was and when it was; but we must know more, if it is possible to know it. The effort will be comparatively a failure if we do not also discover why it was. But I must hasten.

"Our study, to be systematic, must be comprehensive. Mastery of details is needed, yet also mastery of the subject as a whole. 'It is a mistake to suppose for a moment that Bible study consists in the study of isolated texts, or in the study of single chapters; or even in the study of the entire book. A man might study verses all his life and know comparatively little of the Bible. Besides, the man who studies only verses does one-sided, imperfect, narrow work. As has been said, he who does not have in mind the entire book, and from this standpoint do his work, does not and cannot appreciate the full force of a single verse contained in that book. The same thing holds good in a higher sphere. It is not sufficient merely to have a comprehensive knowledge of a given book. Although we may know the contents, the analysis, the occasion, purpose, author, etc., etc., of this book, there is still something to be ascertained. What? The place of that book in the Bible as a whole; its relation to other books; the relation of its contents to the contents of the entire Bible, to the entire plan of God for the salvation of men. How comparatively contemptible, after all, is the study of mere verses! How much he loses who satisfies himself that, having done this, he has done all! We should be close, critical students of a verse; we should be searching, analytical students of a book; we should also be broad, comprehensive general students of the Bible. Let our work, therefore, whatever else it is, be a comprehensive work, for, unless it is comprehensive, it will not be systematic.

"Our work must be one which will lead to definite results. When one has finished a course of study in any department he will surely be disappointed and dissatisfied with the subject, his teacher and himself if he is not able to put his hands on certain definite results. Now, the Bible is a small book. It is, we all believe, an inexhaustible book;

and yet the work of mastering this book is, in one sense, a very definite one. With a plan of studying looking towards thorough work and definite results, the facts, the purpose, the teachings of book after book will come into our possession; one principle after another will become familiar; one period after another will gradually develop itself before us.

"Here, alas! is where failure stares most of us in the face. We study, and we study, and we study; in infancy, in childhood, in youth, in manhood, and in old age; and yet, oh, how many of us must confess it, we accomplish so little, the results are so small, that in the pain of soul and torture of heart we cry out in our disappointment. Am I wrong when I say that the actual Bible knowledge of the average Christian is not one-tenth what it ought to be? Not one-tenth of what it might be if a more systematic study were in vogue. Pardon me, I beseech you; but when I read the hundreds of letters which are coming to me from all parts of the world—letters from Christian men and women, teachers, preachers and missionaries, letters containing the most pitiable confessions of ignorance, where no ignorance should have existed, letters which tell of yearnings for a better knowledge of the sacred truth—my heart is filled with indignation that this should be so, for a fearful responsibility rests somewhere; and then there comes the feeling of sadness that the experience of these individuals is being repeated in the case of so many more. Put the question to yourself. What are the results of your eight, ten, twenty or thirty years of Bible study? With how many of the sixty-six books are you even tolerably familiar? How many of them can you think through from beginning to end, recalling, in a flash, the substance of the entire book? On how many of the sixty-six books would you be willing to offer yourself for an examination similar to that

required of the average freshman in college on Homer? How many of us here to-night could pass a really respectable examination on the life of our Lord? Definite results, definite results, we must have, and if our study does not bring them we may confidently believe that somehow, somewhere, something is wrong. Surely no study deserves the name systematic, no study can be systematic which does not produce them.

"A word now in conclusion:

"Have you a clear and definite purpose in mind as to what you are studying for? As to what you are trying to accomplish?

"Have you a sharply outlined plan in which provision is made for the intelligent study, one by one, of the great epochs, the great characters, the great doctrines, and above all that great life, the life of Christ?

"Have you decided that you will think for yourself, that you will use the mind which God has given you, employing aids and assistance only when it is necessary and wise?

"Is your study in accordance with the great principles which underlie the working of the human mind? Are you logical? Is there order, connection, consecution?

"Is your work comprehensive? Are you careful not to lose yourself in a wilderness of detail; forgetting the great purpose and the broad plan with which you began your work?

"Is your work producing results? At the end of every month, or three months, or six months, can you feel that you have made progress? Are the books of the Bible coming, one by one, into your possession? Are you beginning to look forward to the time when every book will, in some sense, have been mastered? How is it? Are these things so? Your work then is systematic.

"This book, your book, my book, God's book—this book,

I say, we must study; we must study it in no other way than did the Incarnate Word Himself. Let us take Him as our model, in this as in all work. We must study it reverently; for it is divine; study it historically, for it is human; and study it systematically, for we were created in the image of God, and endowed with minds, minds which our Creator intended we should use.

"And in such a work, undertaken by the intelligent men of our day, entered into with such a spirit and pursued in such a manner, with God Himself over all and in all, it is not for the tongue of man to describe, nor for the mind of man to comprehend what would be accomplished. *Lecture by Dr. W. R. Harper, at Plymouth Church, Indianapolis.*

2. A reconstruction of education must come in this country, and the best *methods* of character-education be made universal. *Review of Reviews, p. 681, Dec. 1896.*

3. She (Switzerland) owes her admirable system of laws to her *methods* of education. *Reviews of Reviews, p. 682, Dec. 1896.*

The almost universal education of children under the Froebel *methods* seems to be close at hand; it is the new movement of the age. But Froebel's *methods* need evolution and expansion to meet the republican spirit of to-day in the Pan-American field. Among his *methods,* which merit a fuller expression in our child schools of ethical culture, we may note:

a. Educational walks.

This plan belonged to the *methods* of both Pestalozzi and Froebel. These teachers took their pupils to places for the study of local history, to the flowers for botany, to the rocks for geology, and to nature for all nature's lessons of life, etc.

b. Froebel's plan of associating children with little animals and birds, in order to teach them the brotherhood of all creatures, the oneness of life, and how to treat dumb animals, has found illustration in many kindergarten schools, but in some places has not been regarded as a very essential feature of his *method.* But this is an essential *method* of heart education, etc.

c. Patriotic education.

This is finding a place in most American kindergarten schools. As in Switzerland, the children march with the flag, and sing the songs of Justice and Liberty, etc.

d. Teaching of self-control is an essential part of the Froebel *method,* and in no country is this moral development more needed than in ours. "To give firmness to the will, to quicken it, and to make it pure, strong, and enduring, in a life of pure humanity," says Froebel, "is the chief concern in instruction and in the school," etc.

e. Stories of imagination. We must have a new literature for children to meet the needs of the educational revival, after the Swiss and German school *methods,* which follow the Hebrew parables. Tales of Indians, bear-hunts, and of boys who were men before their time, have had their day of our children's reading. The time has come for a large place in the education of the creative imagination for the imagination largely governs life, etc.

f. Kindergartens for friendless children. The rich need kindergartens as well as the poor, for this form of education is the soul's school. But we believe that no other charity represents so much in life as the kindergarten, for it stands for the moral evolution of life from the beginning; it is the gospel of the Sermon on the Mount, of beatitudes put into the heart and habits of the child by the natural way of

the playground, through the exercise of the creative faculties. *Kindergarten Age, Review of Reviews, Dec., 1896.*

4. What has inductive, statistical, or scientific child-study accomplished thus far that would suggest modifications in the present curricula or *methods* of teaching in our schools?

How may the results of child-study be best embodied in the curricula and *methods* of teaching in our schools as rapidly as they become reasonably well established? *The Bulletin, Vincennes, Ind., Jan., 1897.*

5. Probably no person who has undertaken the subject of child-study has done so much to interest the average teacher as Earl Barnes. He has a *method* of study all his own, which he has used industriously as may be seen when one reads his Studies in Education now being published. A sample of the Barnes *method* will illustrate:

Once a mother gave a child for a birthday present—the child was just 6 years old—a beautiful box of paints. In the afternoon while the mother was busy in another room, the child painted all the parlor chairs so as to make them look nice, and then called out: "O mamma, come and see how pretty I have made the parlor." The paint could not be washed off and so the chairs were spoiled. What would you have said or done had you been the child's mother?

One day the teacher left the room and while she was gone, several children in the room began to make a noise. The teacher heard the noise as she came back, but did not know which children were out of order, and none of the class would tell her. So she kept the whole class in after school. Was the punishment just or unjust, and why?

Thousands of children were given these and like stories for language exercises. The papers were sent to Prof.

Barnes who made a careful study of each set. *The Bulletin, Vincennes, Ind., Jan., 1897.*

6. These illustrations, though long, illustrate the *method* of presenting the story of Dante to children. It is translating it into their own experience. *P. 3 of Leaflet 12.*

7. "Should a Divinity School Teach the Student What to Believe, or How to Think?"

"The answer which should be given to this question by a divinity school is not different from the answer which should be given by any other sort of school, as, for example, by a school of law or medicine. It is necessary that the lawyer, at the very beginning of his practice, have a mind well stored with knowledge concerning laws and precedents and courts, else woe be to his clients. It is necessary also that he have a mind well trained to think, else woe to his clients. The same two-fold preparation is necessary for the physician. There was once a system of medicine the professors of which proposed to deal simply with facts easily ascertained and catalogued, to treat the symptoms of disease with little reference to its causes, to have remedies set down in the book appropriate to each ache and pain and fever and chill, and thus to dispense with thought. Students were prepared in a few months to practice medicine in this way. A frightful record of failure to cure soon evinced the folly of this education. But it would have been equally foolish to send the young physician into the world with no preparation except the mastery of the laws of reasoning. It is even more necessary for the minister than for the lawyer and the physician to be acquainted with a wide range of truth and also to be able to employ it thoughtfully and wisely. To administer error to his people is as much more hurtful than to administer poison as the soul is of greater value than the body, and as eternity is longer than time. To

administer truth to them is the one function of his office, since it is only by means of the truth that God will bring them to repentance and afterward perfect them in holiness: "Sanctify them through the truth; thy word is truth." Yet truth, to be effectual, must be presented in reasoned forms; the minister must use it so as to convince and to persuade; he must interpret it to the mind and to the heart; he must adapt it to the various characters, to the experience, and to the wants of his hearers; and hence he must think.

"I conclude, therefore, that it is the function of a divinity school to teach both what to believe and how to think.

"But let us assume for a moment that the chief aim of the divinity school should be to make thinkers of students. Let us then ask how this can best be done. Various *methods* have been employed, and I request you to look at them.

"First. The education which appeals chiefly to the memory has often been tried, and it is still in favor with many. It prevails in England in those schools which exist for the purpose of training young men for the civil service examinations. It prevails in this country in a large number of private schools which secure patronage by guaranteeing to fit any student for college in a given length of time, often very brief. In a school of this kind there is a large body of teachers, each one of whom has certain hours of work in the class room and certain other hours of private tutoring, during which he communicates to the student the tasks of the coming day. The student does not acquire; he only receives.

"Such an appeal to the memory once constituted the principal function of the teacher, and this *method* of education was predominant in the lower schools of the whole world throughout the seventeenth century, and a large part of the eighteen. It was reinforced by the daily use of the rod.

Boys and girls were prepared for life as geese are prepared for the market in Strassburg, where they are kept in cages and crammed with food through a pipe thrust down their necks. This was supposed to be the only successful *method* of making thinkers; but we now know that the student resembled a goose not only while he was subjected to it, but also afterward so long as he lived.

"Are there any schools in which men are trained for the the ministry chiefly by the communication of truths to be accepted with little regard to their systematic arrangement or their relation to human reason and with no requirement of independent research? I could name several. Their supporters believe that the *method* which prevails in them produces trained thinkers. There is no ground, however, on which it can be justified, and it must prove as inadequate in a divinity school as elsewhere.

"Another *method* of teaching men to think is that of speculation. Its native home is Germany, that land of great realities and great dreams; but like many other natives of Germany it has emigrated, and other countries are now receiving whatever good or evil it has to give. Look back at the great outburst of pantheistic philosophy under Fichte, Schelling, and Hegel, a storm which bore everything before it, and drew into its vortex every faculty of philosophy in the German universities. No professor was called a thinker who opposed its course, and any professor was reckoned as a thinker if he could expound and extend these speculations. Students rushed in thousands to the lectures of such men, confident that they were being taught to think. This is but one example which might be produced. The history of theological education is especially full of them; for theological faculties of Germany have been swept off their feet repeatedly by overflowing floods of speculation which have had "their little day and ceased to be."

"But is there no difference between a theorizer and a thinker? The theorizer has his office in the world; he suggests many false things and some true ones; he stimulates the imagination and provokes discussion; he is the Will-o'-the wisp of science, dancing forward to lure it to regions hitherto dim and unknown, but preferring to hold his course over the marshes and jungles where it is dangerous to follow. The thinker has a far higher place. The thinker is the man who thinks soberly, justly, profoundly; who can distinguish the proposition that is proved from the proposition that is only probable and this again from the proposition that is only possible or certainly false. If the divinity faculty spends a great deal of its time in teaching the gorgeous theories which have come and gone in the past, or which dazzle the eyes of the visionary in the present, it will not make thinkers, but, on the contrary, will send into the pulpits of the world a multitude of speculators and dreamers to dazzle their hearers, but not to enlighten them.

"Once more. Educators have sometimes supposed that students could be trained to think by dwelling chiefly on the laws of thought, the science of logic, the *method* of detecting fallacies. This was the theory of the middle ages, and even the divinity faculties of the great universities taught the logic of Aristotle far more diligently than the Bible or the creed. This logic was greatly extended in its range, and became an intricate algebra. We study it in our colleges chiefly as a curiosity of history, devoting a month or six weeks to it; but at Paris and Oxford and Bologna it required years. The students were usually candidates for the priesthood. What was the result of the excessive cultivation of the art of reasoning? The student gathered no sufficient materials on which to exercise his art, so that, in general, it remained a mere art. At its very best it gave us the old scholastic philosophy and theology, which the

world was already laughing to scorn before the Reformation appeared. It affected preaching disastrously, for the preacher who did not interlard his sermons with its unintelligible jargon was supposed, even by the common people, not to be able to think, and could not get a hearing. Try to read one of the sermons of Wiclif, and fancy it addressed to men and women, many of whom did not know the alphabet; nay, fancy it addressed to an assembly of the greatest scholars. Then, while you are amazed that such an apparatus of scholastic logic was ever brought into the pulpit, remember that Wiclif was freer from it than others of his age. Here is a fragment from *The Saint's Tragedy,* by Kingsley, in which a heretic preacher of the thirteenth century is represented as imitating the sermons of friars which he had heard:

"This man shed blood, and by man shall his blood be shed. Now behold an argument. This man hath shed blood, even Conrad; ergo, as he saith himself, ye, if ye are men, shall shed his blood. Does he not himself say ergo? Hath he not said ergo, to the poor saints, to your sons and your daughters, whom he hath burned in the fire to Moloch? 'Ergo, thou art a heretic.' 'Ergo, thou shalt burn.' Is he not therefore convicted out of his own mouth?"

"Much of the preaching of the middle ages was as technical and idiotic as this.

"A similar mistake was made at a later period in reference to the new logic, *the inductive method* of reasoning. Bacon supposed that it could be acquired and practiced by any man, so that he would think safely and soundly by following its rules.

"The over-valuation of the science of logic, whether deductive or inductive, has been remedied. But it would be possible for us to substitute for the rules of reasoning in general the rules of reasoning in some limited field of in-

quiry. We might devote so much time to the *method* of astronomical research as to slight the substance of astronomy and leave the student ignorant of it. We might devote so much time to the elements of criticism in art and literature as to slight art and literature themselves, and leave the student ignorant of them. We might devote so much time to the criticism of the Old and New Testaments as to slight the Old and New Testaments themselves, and send our students to the churches ignorant of these divine treasures of knowledge. Thinkers would not be made in this way.

"How then shall we teach the student to think? Certainly not by overlooking the laws of reasoning in general, or in the special fields of bibical, theological, and historical criticism. Certainly not by overlooking the great theories which have arisen in the history of the church. Certainly not by neglecting the memory. These things have their places in any just scheme of education, and the *method* which I shall recommend embraces them all.

"It also unites the two alternatives presented in the question before us, so that they cease to be alternatives, and become but parts of a harmonious whole.

"Let us look at the first alternative. The best way to teach a student what to believe is to present the truth to him in ordered form and in the light of reason, requiring him, at the same time, to gain much of it by his own searching. None of you will question this, and I need not dwell on it.

"Let us now look at the second alternative. The best way to teach a student how to think is to present the truth to him in an ordered form and in the light of reason, requiring him, at the same time, to gain much of it by his own searching. This proposition may not be quite so obvious as the preceding one, and I shall spend a moment in seeking to commend it to you.

"First of all, it requires that truth shall be presented in a logical form, a system, an organic and well-proportioned body. The truth is not necessarily science; it becomes science only when it assumes such a form as this; and when it is set forth as a science it begets a scientific habit of thought in the student. He spends several years in communing with truth thus arranged, and his mind acquires a habit of good arrangement; careless *methods* of thought become odious to him; and when he writes or preaches his productions manifest order, proportion and progress. Moreover, growing accustomed to arrange his thoughts systematically, he soon learns to make the system which he constructs a test of thought, for he discovers that the proposition which an organized body of truth rejects and casts out is probably false, while the proposition to which such a body gives hospitable welcome is probably true. In this *method* there is an appeal to memory. But there is also a cogent appeal to thought, and such an appeal as trains the mind to think in an orderly and sound manner.

"But once more. My proposition requires that the system of truth be set forth in the light of reason. The grounds on which it rests are to be adduced, and also the chief considerations which might be urged against it. Thus the great theories of Christian history will be brought forward. But they will not be regarded as the chief subjects of study; they will be assigned to a subordinate place, while the truth itself will be most prominent. Thus also an apparatus of criticism will spring up and will be used in subordination to the subject criticised. In this part of his work the teacher will take care to cast upon his subject the clear sunlight of reason, and not the dim and deceptive starlight of sophistry or partisan passion. He will take care also not to permit his strong personality and his great skill in argument to overwhelm his students. He will encourage them

to think independently, to differ from him if they wish, and to enter upon new provinces of thought with zeal and confidence. Sir William Hamilton devoted one hour each week to conversing with his students about any objections and difficulties which his teachings had occasioned in their minds. Such an exercise would be profitable if the teacher should conduct it in a fair and open manner, gladly recognizing any valuable suggestion from the learners, and encouraging them to think for themselves. It would be hurtful if he should be intolerant of criticism or too dominant in his defense of his own positions.

"Lastly, the *method* requires the student to spend much time in investigation. It does not merely encourage him to do so; it lays upon him a command to do so; and it denies him full credit if he fails to do so. The teachers can present to him only the central things, and he is to gain other things by his own industry. Thus the divinity school ceases to be a mere refectory where he nourishes himself at tables prepared for him, and becomes only a gymnasium where he trains and develops every faculty and power of the mind for ardent and skillful exertion in the ministry to which he is called." *By Professor Franklin Johnson, D. D., University Record, Chicago.*

8. Although the foregoing experiments suffice to show that the periodic variations were of central rather than of peripheral origin, I sought a *method* of experimentation which would enable me to form a clearer idea of the relative influence exerted on the height of the contractions by the fatigue of the muscles and the change occurring in the central nervous system. At the suggestion of Professor Mosso the following form of experiment was adopted. The flexor muscles of the second finger, weighted with one kilogramme, were stimulated every two seconds. Two different forms

of stimuli were employed, electrical and voluntary stimuli, and they were applied alternately. During the electrical irritation, the nerves and muscles were stimulated by a tetanizing induction current, one of the electrodes being placed over the sternum, the other over the muscle. *Pamphlet on Effect of Fatigue, p. 11.*

9. Your commission has found it necessary to discuss the question of *methods* of teaching in numerous instances, while considering the question of educational values and programs, because the value and time of beginning of the several branches depends so largely on the *method* of teaching. *Report of Committee of Fifteen, p. 69.*

10. The usual way of computing interest is based on 360 days to the year. By the exact *method* the actual number of days is found and is regarded as so many 365ths of a year. This rule is the one adopted by banks and the United States Government, and it is growing in favor among business men. When the time in days is less than 1 year, the exact interest is found by first calculating the interest according to the *methods* already given, and deducting $\frac{1}{73}$ from the result of the common years and $\frac{1}{366}$ for the leap years. *Complete Indiana Arithmetic, p. 220.*

11. When work has become a *habit,* and the pupil has learned to practice the right *method* from his own impulse rather than on account of external authority, his education in school has ended.

But the subject must be adapted to the consciousness of the pupil, and here the order of procedure and the exposition depend upon the stage which he has reached intellectually, for the special manner of instruction must be conditioned by this. If he is in the stage of sense-perception, *we must use the illustrative method;* if in the stage of image conception, that of combination; and if in the stage of thinking,

that of demonstration. The first exhibits the object directly, or some representation of it; the second considers it according to the different possibilities which exist in it, and turns it around on all sides (and examines its relations to other things); the third demonstrates the necessity of the relations in which it stands either with itself or with others. This is the natural order from the standpoint of the developing intelligence; first, the object is presented to the perception; then combination with other things shows its relations and presents its different phases; and, finally, the thinking activity circumscribes the recklessly moving reflection by the idea of necessity. Experiment in the method of combination is an excellent means for a discovery of relations, for a sharpening of the attention, for the arousing of a many-sided interest; but it is no true *dialectic*, though it be often denoted by that name. *Rosenkranz's Philosophy of Education, 1889, p. xiv in Analysis of Contents; in body of book, p. 98.*

12. Hegel employes in this voyage of discovery a *method* that he names the "dialectic." It has throughout the appearance of being a stricter *method* than that of Fichte's "Science of Knowledge," and claims to be objective—an exhibition of the necessity of the process which is in the object before us, in contradistinction from mere subjective reflection upon it made from points of view external to the object.

Hegel's *method* does not seek to find an external basis of attack or defense, but to get this basis from the object itself.

Here we have the famous dialectic which is described as the self-movement of the notion (*Begriff*). Seize an imperfect idea and it will show up its imperfection by leading to and implying another idea as a more perfect or complete

form of it. Its imperfection will show itself as dependence on another. This is the philosophic *method* seen so clearly by Plato and stated in his *Republic* (Book VII, chapter 3). Pure science according to him has a dialectic *method* and starts with hypotheses—or, as we should describe them, dependent ideas, ideas that imply other ideas to make them possible, just as the idea of inner and outer or positive and negative imply each other. But this dialectic *method* annuls these hypotheses on its way towards the highest principle. * * * * * * The etymological ground is a dangerous one, however, and it is better not to build on it. Plato seems to mean that the dialectic *method* starts with premises given by sense-perception and ordinary reflection, and seeking the presuppositions of these ascends to the first principle. An example of this is found in the inference of independent being as the necessary condition for the existence of dependent being, and this may be said to be the substantial insight lying at the basis of all true philosophy. Plato contrasts this *method* of ascending from the imperfect to the perfect by discovering presuppositions with the geometric *method* that uses axioms or fixed hypotheses, not being able to deduce them or explain them. *Hegel's Logic, 1890, pp. 57, 58, 174, 175.*

PEDAGOGICAL MEANINGS.

1. *Method* of presenting.

a. Teach the poem as a reading lesson. If the thought is mastered the song will be full of meaning, and will not be given as a mere saying of words.

b. Teach the melody by singing each phrase until it is correctly given. *Outline of Music for Township Institute Work, Vigo County Schools, 1896-7.*

2. Francis Bacon had little apitude for scientific re-

search. He added nothing to the sum of scientific knowledge, yet he gave his name to the scientific *method,* and wrote a book which in epoch-making power stands beside Descarte's Discourse, Newton's Principia, and Darwin's Origin of Species. * * * Thus at the outset Bacon sees that there is a *method* by which all human knowledge can be placed upon a sound and permanent basis, and he devoted the better part of his life to the attempt to discover or invent such a *method.* His first aphorism printed at the head of this chapter, indeed, its very first line, "a man, the servant and interpreter of nature," embodies the whole of the scientific spirit and the scientific *method.* * * * These subjects are discussed with constant reference to the new *method* which he believes able and destined to work a revolution in human thought and life. * * * (1) *Methods* used. The logic now in use serves rather to fix and give stability to the errors which have their foundation in commonly received notions than to help the search for truth. The syllogism consists of propositions, propositions consist of words, words are symbols of notions. Therefore if the notions themselves are confused there can be no firmness in the superstructure. It commands assent to the proposition, but does not take hold of the thing. There are and can be only two ways of searching into and discovering truth. The one rises from the senses and particulars to the most general axioms, (laws), and from these principles, the truth of which it takes for settled and immovable, proceeds to judgment and to the discovery of middle axioms. And this way is now in fashion. The other derives axioms from the senses, and particulars, rising by a gradual and unbroken ascent, so that it arrives at the most general axioms last of all. This is the true way, but as yet untried. It can not be that axioms established by argumentation should avail for the discovery of new works; since

the subtlety of nature is greater many times over than the subtlety of argument. But axioms duly and orderly formed from particulars easily discover the way to new particulars, and thus render science active. *The only hope, therefore, lies in a true induction. One method* of delivery alone remains to us, which is simply this: we must lead men to the particulars themselves, and their series and order; *while men on their side must force themselves for awhile to lay their notions by and begin to familiarize themselves with facts.* The conclusions of human reason as ordinarily applied in matters of nature, I call for the sake of distinction, *Anticipations of Nature* (as a thing rash or premature). That reason which is elicited from just and *methodical* process I call *Interpretation of Nature. Baconian Revolt, Inland Educator, October, 1895.*

3. But it is no less true that these complaints are due in no small measure to false *methods* of linguistic training generally, or to some cherished prejudices in favor of certain languages on the part of the teachers; and it becomes, therefore, at the present day, a matter of great practical importance to inquire how far our traditional *methods* of teaching languages are in conformity with the *method* of Nature in her great art of thought-utterance, and how far they may justly be called on to submit themselves to a revision and a reconstitution.

As language is a function which belongs as much to every normal human creature as seeing or hearing, there can be no difficulty in finding out the *method* of Nature in its acquisition. We have to answer only two questions: first, what are the factors of the process by which the human babe from being capable merely of inarticulate cries, like any of the lower animals, is developed into an easy and graceful manipulator of articulate speech? and again, How far, and in what respects, does this model require to be

modified in order to enable the expert handlers of the mother tongue to use any second or third language with like expertness?

Why does it seem such a difficult business to acquire a familiar knowledge of any foreign language, and why so much brain and so much time spent so frequently on their acquisition with such scanty results? The answer can be only one: because your teacher has ignored the *method* of Nature, and given you a bad substitute for it in his own devices; instead of speaking to you and making you respond, in direct connection of the old object with the new sound, and thus forming a living bond between the thinking soul, the perceptive sense, and the significant utterance, he sends you to a book, there to cram yourself with dead rules and lifeless formulas about the language, in the middle of which he ought to have planted you at the start.

These things being so, and the *method* of nature being so plain in the matter, we now ask what are the causes that have led so many of our teachers, even the most accomplished of their class, to neglect so infallible a guide, and to follow *methods* of linguistic inculcation equally unpleasant in the process and unprofitable in the result?

Let books and not living converse be the final end of the study of languages; so they certainly are with the dead languages; but even with regard to them it is quite certain that the familiarity and frequent repetition which are the special virtues of the conversational *method* both render the mastery of books, as in the case of the mother tongue, more complete, and the hold of the printed signature at once more firm in the grasp and more easy in the approach.

There is one other objection to the conversational *method* in the teaching of languages, viz: that it makes a man a parrot. Well, a parrot is an imitative animal and so is a

man, and so far must not be ashamed to own his kinship with the plumy prattler.

In conclusion, I have a word or two to say with regard to the occasion and the plan of this little book. In the first place, whatever may be said of Hebrew or Latin, Greek is a living language, and must be treated as such even by those who persist in the notion that, while the *method* of living vocal appeal applies in its full extent to modern languages, it is certainly out of place in the treatment of the two ancient languages which justly claim the first place in the linguistic culture of our highest schools.

But since that time, as a natural consequence of the great educational movement of the age, some very distinct voices have come to my ear, to the effect that there is something radically wrong in our way of dealing with languages, and that the *method* of teaching by rules and grammar mainly can no longer be tolerated.

When the young Hellenist has stamped its Greek designation directly on every object that meets his eyes, and connected it with some single verb that belongs to its significance in familiar life, I would then suggest that the teacher, besides the daily repetition of certain forms of common conversation, should give a *viva voce* description of pictures hung on the wall two or three times a week, which the learner shall be called on to repeat without any written notes; the principle of the *method* being always to maintain the direct action of the mind on the object, through the instrumentality of the new sound, without the intervention of the mother tongue.

One other matter requires special notice—a matter not necessarily connected with the colloquial *method,* but which may be wisely used as a help. To each lesson I have appended a short list of English words, either by family affinity, or by direct borrowing through the Latin, radically

identical with the Greek. *Preface in Blackie's Greek Primer, pp. v to xv.*

4. In this paper I attempt to contrast the *methods* of the Kindergarten with those of the Primary School as it exists and has existed in America, not with the intention of disparaging either of these institutions, but in order to point out a certain fitness of each *method* for its work in hand. I claim here, and I claimed long ago when I recommended the school board of St. Louis in 1872 to establish a kindergarten, that the presence of a kindergarten in a system of public schools will, of itself, work some change in the *methods* of the primary school, that will be a great benefit to those *methods*. But I wish to show that the *methods* of the primary schools, substantially as they are, have a foundation in reason, and that it is not well for our friends of the kindergarten to look always in the direction of a revolution in the *methods* of the primary school, and the adoption of plays and games and gifts and occupations, or some manual training modification of these in the course of instruction for children from the age of seven to twelve years. On the other hand I hope to convince the friends of the primary schools that their *methods* are not good for children under seven years, but that the kindergarten *methods* are most happily devised for children of the tender age—between four and six years. As teachers we must not get the *method* which we practice in the special grade in which we are teaching so close to our eyes that it shuts out all other grades and all other *methods*. We must study education in view of the entire life of man, and never forget that work with the children is to fit them for manhood and womanhood. It is not our object to prolong childhood forever; but on the other hand we wish to prevent too rapid transitions from one stage of development to another. We

do not wish to see a hot-house system of education, forcing the growth of our human plants for the world market. *Harris' Kindergarten Methods, pp. 3, 4.*

5. According to the classification given by Professor Brooks in his excellent book entitled, "Normal Methods of Teaching," there are four correct *methods* of teaching the noble science of geography. (1) The *Analytic Method,* which begins with the world as a whole, and passes by successive divisions down to the State, county, town or city in which we reside; (2) The *Synthetic,* which begins at the smaller division, as a schoolhouse, yard, town, county, etc., and passes by successive enlargements to the surface of the world; (3) The *Inductive,* which begins with the particular facts of science, and passes to their classification into systems; and (4) The *Deductive,* which seizes upon the laws or general characteristics of a group of facts, and passes to the particulars embraced under these laws. This last *method* is more than analytic. It not only goes from the whole to its parts, but from the general to the particular. It is not our purpose to discuss now the relative value, or the proper employment, of these *methods.* We seek the more practical.

Whether the *method* of teaching the whole subject of geography be analytic, synthetic, or inductive, we recommend, in place of following the text-book, The Topical *Method* of Study.

We do this with much confidence, after years of experiment and diligent search for light on the subject, because it is the best *method* thus far found by which to create unbounded interest among pupils in this study, and because it enables the teacher to instruct with satisfaction and pleasure. *King's Methods in Geography, 1889, pp. 44, 45.*

6. In teaching the art of reading, he may teach them the

sounds of whole words, and by comparison evolve the sounds of particular letters; or he may associate with the several letters their respective sounds, and require them to construct the sounds of words by combination of the letter-sounds; the one course is analytic, the other synthetic.

But *methods* are right and necessary in their own place; they are parts of one whole, related to each other as antecedent and consequent. The observation of particulars is an incomplete and fruitless process, unless it issue in the establishment and application of general principles; but the application of such principles must be feeble and unreal unless founded on previous observation and particulars. In giving lessons, therefore, the teacher must consider which of these two *methods* mainly or wholly, he should adopt. *Currie's Common School Education, pp. 269, 270.*

7. The old, long-established *method* in arithmetic is calculated to teach the first four processes of addition, subtraction, multiplication, division, in the order in which they are named, finishing addition with small and large numbers, before subtraction is begun, and so forth. A more recent improvement on this *method* consisted in excluding the large numbers altogether at the beginning, and dividing the numbers on which the first four processes were taught, into classes, or so-called circles. The child learns each of the four processes with the small numbers of the first circle (i. e., from 1 to 10) before the larger numbers are considered; then the same processes are taught with the numbers of the second circle, from 10 to 100, then of the third, from 100 to 1,000, and so forth.

Grube, however, went beyond this principle of classification. He discarded the use of large numbers, hundreds and thousands, at the beginning of the course, as others had done before him; but instead of dividing the primary work in arithmetic into three or four circle or parts only, i. e.,

from 1 to 10, 10 to 100, etc., he considered each number as a circle or part by itself, and taught it by a *method* that is to be set forth in the following pages. He recommended that the child should learn each of the smaller numbers in succession, and all the operations within the range of each number, addition, subtraction, multiplication and division, before proceeding to the consideration of the next higher number.

In the following, Mr. Grube gives but the outline, the skeleton as it were, of his *method,* trusting that the teacher will supply the rest. The sign of division, as will be explained below, should be read at the beginning: "From . . . I can take away . . .— times." By this way of reading, the connection between subtraction and division becomes evident.

I. The pure number.

a. MEASURING (comparing).

● ● 2.

● 1 $\begin{cases} 1 + 1 = 2. \\ 2 \times 1 = 2. \\ 2 - 1 = 1. \\ 2 \div 1 = 2. \end{cases}$ (Read: From 2 I can take away 1 twice.

● 1

2 is one more than 1.

1 is one less than 2.

2 is the double of 1, or twice 1.

1 is one-half of 2.

b. PRACTICE BY SOLVING EXAMPLES RAPIDLY.

$1 + 1 = ?$ $2 - 1 = ?$ $2 \div 1 = ?$ $1 + 1 - 1 \times 2 - ?$ etc.

c. COMBINATIONS.

What number is contained twice in 2?

2 is double of what number?

Of what number is 1 one-half?

Which number must I double to get 2?

I know a number that has in it one more than one. Which is it?

What number have I to add to 1 in order to get 2?

II. Applied numbers.

Fred had two dimes, and bought cherries for one dime. How many dimes had he left?

A slate-pencil costs 1 cent. How much will two slate-pencils cost?

Charles had a marble, and his sister had twice as many. How many did she have?

How many one-cent stamps can you buy for 2 cents? *Soldan's Grube Method, 1878, pp. 5, 6, 10, 12.*

8. "While the critics are condemning, (the Quincy *methods*) they are found to be diligent in applying them; and when well incorporated into their own work, the same persons, unconsciously to themselves perhaps, will be bold to claim the *methods* as of their own originating. . . . The *methods* of the Quincy schools are the *methods* which have been used and are being adopted wherever they are known and understood, and wherever the teachers have the skill and the permission to employ them.—George A. Walton, of Massachusetts Board of Education, in "Methods of the Schools of Quincy, Mass." ("Education," September, October, 1883.) *The Quincy Methods, 1885, Preface, p. iv.*

9. It is not incumbent on teachers to mark out a course of study, for that is always provided, or at least should be. It is their function to interpret and teach what is indicated in the course of study. It is very noticeable that the "eternal why of things" has not been as carefully considered and answered as the importance of the work demands.

When asked why we teach certain things in a certain

manner there is often a look of blank surprise which expresses, at least, a query as to whether work and *methods* are legitimate fields of investigation. *The Inland Educator, Jan. 1897, p. 291.*

10. Geography, well taught, is an educational study cultivating the imagination and judgment, as well as the memory; training the mind in both observation and language. Perhaps no other branch in the grammar-school curriculum gives opportunity for culture in so many directions.

Are we to have question and answer, or topical recitations? Surely both have a place. During the presentation of new points the Socratic *method* is the true one. The teacher must excite mental activity in the class by skillful questioning. The children must be led to think, to examine, to express the results of their study. The teacher should tell them nothing they can naturally find out for themselves; but their earnest study should be supplemented by bits of information, vivid descriptions and other illustrations, given by the teacher, in their proper connection. This, and this alone, is true oral instruction, the direction of the mental activity of the pupils. After this come the memory-lessons, the definitions, and finally, the reproducing of the different points of the geography of any country, by topical recitations. These should be the independent efforts of the pupils, expressed in their own language. *Crocker's Methods in Geography, 1884, pp. 5, 6, 7, 10.*

11. Address delivered at the Winter Convocation of the Morgan Park Academy, January 4, 1897, by Robert H. Cornish:

"Science is classified knowledge. When the facts of language, of mathematics, of history or of literature are put into orderly arrangement, are grouped according to their

relationship and are explained by laws then we have the science of language, of mathematics, or of literature. Science thus considered includes all school studies, and students of the branches just mentioned are students of science. This is not the use of the word in our subject. According to another more restricted use of the word, science includes a classified knowledge of things objective, that is, of things that have their existence outside the human mind. Bunker Hill and patriotism, broad fields and contentment, the ocean and sublimity may be synonymous terms, but as subjects of study the surface of the earth and the ocean are fundamentally different from hope and contentment.

Science then is classified knowledge of the facts and phenomena of the physical universe with an explanation of the reasons of these phenomena so far as the reasons are understood. But the physical universe is a very large affair and is constantly growing larger through our increased knowledge of it. The men who attempt to include the whole range of the physical universe in their studies are very few. Humboldt was perhaps the last of a line of scientific workers who kept in touch with all branches of science and made contributions to all. Scientific workers divide and subdivide their work and thus we have developed those great branches of scientific study of which physics, biology, and astronomy are examples. These branches of science or sciences are grouped into two great divisions; (1) the physical sciences or those which deal with matter and energy. Physics, chemistry, and geology, are physical sciences. (2) Those which deal with matter and energy and an added something called life. The group constitutes the biological sciences and includes botany and zoology as principal members.

Our subject then is the value, in a school such as ours, of the training of one or more sciences not as opposed to but

as contrasted and compared with other subjects which are studied by our students.

The time has gone by when it was necessary to enter into any defense of the place of science in a general education. There was a time when the sciences were not recognized as necessary in a college course, much less in a secondary school. Latin, Greek, and mathematics, with mental and moral science which were not science at all, were about the only things studied at Yale College one hundred years ago. The colleges all over the country have now admitted science studies into the general curriculum. In many colleges the science courses are elementary in character and differ not at all from those given in many high schools. Into secondary schools which prepare for college the admission of science studies has been slower than into the colleges themselves. Time forbids entering into a full discussion of the reasons for this. I agree with those who say that any subject that knocks for admission at the door of our already crowded curriculum should justify its claim. I agree with Professor Remsen who says that slipshod laboratory work in science is a very poor substitute for a good course in Greek or mathematics. If science courses in college or the academy are "snap" courses, if they do not as a rule give either the mental training or spiritual quickening that comes from other courses they would better be thrown out. In order to understand better the value of science in school training allow me to describe the scientific *method* of work.

I think it is of more value to the student to understand the scientific *method,* to develop the scientific habit of mind than it is to acquire a few or even many facts about a particular science. The scientific *method* has the following steps: (1) The collection of facts. This involves observation, classification, comparison, measurement. If the objects dealt with cannot be measured, if they cannot be

counted, or weighed in a balance, then they do not belong in the realm of the sciences that I am considering. These observations it may take years to collect. This part of the work is of great importance. Every notable scientific achievement rests upon a long continued series of patient observations. (2) The enunciation of a general law which groups and explains the facts. This is called induction or generalization. The larger the group of facts examined, the wider the generalization must be to include them all. (3) The third step is verification by experiment. This tests the law discovered by applying it to a new case or by bringing forward the facts not known when the law was enunciated which prove or disprove it. If our facts cover a very wide range of phenomena, especially if they belong to different sciences or possibly to all sciences, then the generalization which groups and explains them is called an *hypothesis.* This is an effort of the scientific imagination to explain the reasons which lie back of the laws themselves, or to discover a more general law. When new discoveries have confirmed the hypothesis it becomes a *theory* and a theory which stands the test of years and to which exceptions are not found takes its place among the *accepted* body of *scientific truth.* Let me illustrate these steps. That carbonic-acid gas consists of 27 per cent. oxygen is one of a thousand or more facts known to chemists. That any given chemical compound always contains the same elements in the same proportion by weight is a law whose establishment at the beginning of the present century was attended by a long and spirited controversy. That chemical compounds consist of atoms united to form molecules and that the atoms unite in the ratio of small numbers is a theory which has stood the test of one hundred years of verification and which seems likely to become a part of the body of scientific truth.

The intellectual faculties called into exercise in these processes are the powers of observation, of comparison, of inductive reasoning or generalization, and the constructive imagination. The moral qualities which are developed in scientific work are patience in prolonged investigation; perseverance in overcoming obstacles, and openness of mind to the reception of new truth. It is not claimed that these mental and moral qualities are the exclusive possession of scientific men. Such a statement would be absurd. I do claim that any investigation not conducted in the scientific *method* is of very doubtful value. The dominant motive of the scientific worker is the discovery and utilization of truth. To push out the boundary of human knowledge, to capture some of the territory of the unknown and make it known is his great aim.

Other motives may lead him on, such as a desire for fame, for power, or for wealth, but I think it is universally admitted that the joy of discovery of some truth new to the investigator is the greatest connected with his work. The rewards of the scientific worker are: (1) the interest and pleasure of his work; (2) the recognition which he is bound to receive if his work is well done. It is the scientific workers whose discoveries afford the means of improvement of all the material conditions of life. Our modern civilization with all it includes of material comfort is a monument to the scientific thought of the age. It is not the rule, however, that the inventor becomes rich. Neither does the man of science. Agassiz had no time to make money. Nor should people be impatient with the apparently useless discoveries made by men of science. No doubt many investigations will never bear any so-called practical fruit. Yet many apparently useless facts brought to light in the laboratory have upon further investigation yielded practical results.

Why then do we advocate science in the schools and especially in the secondary schools?

Because the habits of mind which have been described and which are generally characteristic of scientific men are worthy of cultivation, and some of these, notably the power of observation, are cultivated by no study so well as by nature study.

The study of nature does or should beget a love of nature and the love and study of nature become a source of perennial happiness to him whose eyes have been trained to see her beauties.

> "To him who in the love of nature holds
> Communion with her visible forms she speaks
> A various language: for his gayer hours
> She has a voice of gladness and a smile
> And eloquence of beauty, and she glides
> Into his darker musings with a mild
> And healing sympathy that steals away
> Their sharpness ere he is aware"

Anyone who has acquired a love of good books and an intelligent interest in some branch of natural history has two never-failing sources of happiness.

The study of science and the influence of the scientific *method* lead to care in making statements and check one of the serious faults of all young writers, viz., the tendency to make sweeping and exaggerated statements. Professor A. H. Tolman of the Department of English Literature in The University of Chicago, in an article on "Natural Science in a Literary Education," says:

"Great forms of thought, mighty molds which of necessity give shape to our thinking and then to our very imaginings, these come to us from the study of things, not from the study of language. Literature itself must largely find its raw material, its great metaphors and similes, its vivid

pictures and mighty symbols within the domain of natural science, and this increasingly as the years go by.

"The chemist's law of definite and multiple proportions; the laws of motion; the phenomena and laws of light, heat, and electricity; the strata, the glaciers, and the process of earth sculpture of the geologist; the winds, tides and ocean currents; the theories of animal evolution; the struggle for existence, the survival of the fittest; the mighty phenomena, the impressive uniformities, the nebular hypothesis of astronomy—these are great forms of thought as well as facts and theories of science. A man who is unacquainted with modern science cannot well understand the language of educated men and he cannot interpret sympathetically and adequately the literature of his own day."

The study of science develops and strengthens the imagination and the feelings. The person who studies the slow processes of geology and undertakes to find out the age of the earth, or who tries to grasp the distance to the sun as a measuring stick with which to measure the distance to the stars must exercise imagination in the highest degree.

A noted critic said that two men whose imaginations were the most brilliant of any of their day were Michael Faraday and Charles Darwin.

Science studies appeal to a certain class of minds which are but little attracted to other branches of study. These studies are the intellectual salvation of some who otherwise might perish by the way."

12. Prof. Cady said that he would not speak as a musician but as an educator. The present tendency of education is development from within. The educational world owes a great debt to Pestalozzi and to Froebel, but neither of these, nor yet modern psychology, gives us the true basis

for the development of individuality. This basis as Professor Cady thinks, is found in ontology, as expressed in Mrs. Eddy's *Science and Health.*

Formerly observation was the watchword of education; then apperception took its place. But conception, unfolding from within, is the watchword of the newest education, and this is the highest of all. The relation of this to music is that music is *idea* and not product of sense development. Music is conceptive thinking, and hence a positive factor in education. Thus far it has been too often a positive evil, in developing vanity on the part of the performer and envy on the part of the listener; in conveying the impression of musical consciousness when none exists, and in displaying bondage to the physical instead of deliverance from it.

The usual test of determining whether a child can discriminate between tones is no evidence of musical consciousness. Music is thought which must be grasped. The musical idea has three elements; melody, rhythm, and harmony, each of which must be conceived and gradually unfolded. Conceptive development may be expressed in two words; analysis and synthesis. Analysis is the individualizing process; synthesis, the unifying one. Attention is nothing more than the developing of the conceptive process.

The simplest thing with which to begin is melody. Until simple melodic phrases can be conceived there is no evidence of musical consciousness. The second step is the recognition of the rhythmic basis of melody, and the third is the development of the harmonic basis underlying the melodic and rhythmic expression. When this conceptive foundation has been laid, the forms of musical manifestation, the voice, or the different kinds of musical instruments may be considered.

Thus music is the expression of the whole of life. Its

principles are as fixed as those of geometry and their development as logical. The danger lies in considering music as one-sided, as the language of emotion only. True music cannot be the language of discord; it must express the highest unity and harmony.

Professor Cady's *methods* are employed in the University Primary School, and frequent references have been made to them in the *School Notes and Plans* as published in the *University Record.* The issue of February 19 gives especial attention to the work in music."

13. In the preface to "The Essentials of Method,"* the author calls attention to the importance of analogies, and to the fact that there are many analogical theories of mind. Of these, two are important:

1. That which regards the soul as a germ containing by involution that which it is to become by evolution—a self-active power.

2. That which regards the mind at any given stage of its development as the resultant of the variations of its environment.

These two theories are regarded as but two figurative expressions for the thought that there is a method in the child, and a method in the subject of study. The preface adds that the work deals with the adjustment of the subject-matter and the mind. "It seeks to find the essential forms of methods of instruction, as determined by the general law of development in the mind of the child."

When the author speaks of a method in the child and a method in the subject of study, it would appear that he uses the term method in the first case to signify a mental activity, that is, the psychical change occurring in the child as he develops toward the perfection of his being

* "The Essentials of Method" (1897) by Charles De Garmo. D. C. Heath & Co.

under the stimulus of the subject; and that he uses the term method in the second case, to signify the external although invisible activity by which each fact or individual of the subject of study is produced. For example, if the subject of study is plants, then it would be thought that if the author speaks of a method in the subject of study he would mean the mode of activity by which plant energy produces the individuals of the plant world. Such, however, does not seem to be his meaning in examining the work on pages 91-93. There, by method in the learner, he refers to the act of observation, abstraction, induction and deduction, etc. This is in accord with the second view of method. In referring to "methods with regard to the thing to be learned," (page 92), no reference seems to be made to the activity by which each fact or individual in the subject is produced. The thought seems to be that each subject or object is a whole consisting of parts. This being the case, the child's mind may be apprehending the whole, and proceed from this to a consideration of the parts, giving an analytic procedure; or it may begin with the parts and move toward the whole, giving the synthetic procedure. Method in this case is also mental, and accords with the second view of method. On page 93, when speaking of "*method* with regard to the teacher" reference is made to the "monological" and to the "dialogical." In the same paragraph the author speaks of the "catechetical, Socratic, developing *method.*" It seems evident from these expressions that he is speaking of external activities, such as questions, illustrations, example, etc., as method. This is according to the first view.

The book consists of three parts:

I. Psychological basis.

II. Necessary stages of rational method.

III. Practical illustrations.

Under the psychological basis the work presents:

1. The individual notion.
2. The general notion.
3. Apperception, or the assimilation of knowledge.

Under the necessary stages of rational method, three are indicated:

1. Apperception of individual notions.
2. Transition from individual to general notions.
3. The return of the general to individual notions.

Under practical illustrations considerations are presented concerning language, arithmetic, reading, geography and history.

The use of the singular form of the word method in the title of the book, indicates that generally the author implies the term to signify a definite mode of mental activity, and not the various devices used to stimulate it. The work is not, however, free from the latter use. In certain passages the term is used in a way to imply that the author holds to the first view of method. In other passages the inference would be that he holds to the second view. In still others it would appear that he approaches in his conception the third view. The following are passages indicating the first view of method:

1. "It seeks to find the essential forms of *methods* of instruction, as determined by the law of development in the mind of the child." (Preface, page 5.)

2. "Physiological Psychology studies mental acts by observing and measuring their mechanical occasion and results, according to the *methods* of Physical Science." (Page 25.)

3. "When we recognize the process of apperception, however, then the external standpoint gives place to the internal one, and the teacher regulates the amount and *method* of his instruction by the psychical needs of the

child, which are determined largely by his knowledge and his interests." (Page 27.)

4. "It is not uncommon for us to strive to create interest in study by appealing to emulation, to ambition, to love of praise, approval of others, duty, etc., or by indulging in spectacular display in *methods*. These, and similar diversions may enable us to develop a momentary interest, etc." (Page 31.)

The following may be noted as indications of the second view of method:

1. "But if the essentials of right *methods* are observed, there may be almost infinite variety of devices in teaching and reciting the lesson, without vitiating the results." (Page 86.)

2. "Deduction corresponds most closely to the stage of application; or to the return from universals to new particulars." (Page 92.)

3. "The *method* which begins with the whole and proceeds to the parts is analytical." (Page 93.)

The work presents, however, a view of method far more important and fundamental than that indicated in these quotations which are here given to signify the first and second views. While the prevailing view in the work is not strictly that explained in the present treatise as the third view of method, it maintains a close analogy to it, and is identical in the sense that a true method is a mental activity returning in new shape to the original stage.

It will be observed that the method presented is both triple in form and a return to itself, in that it contains these stages:

1. Knowing the particular.
2. Deriving the general from particulars.
3. Returning with the general to the consideration of new particulars.

This is a very important and fundamental view. This triple movement and return, however, are found even within the first stage in which the mind deals with the individual notion. This renders the view of method presented in the book still more valuable, because it reveals more fully its accord with consciousness—consciousness being essentially subject-object or—

1. A potential capacity.
2. Existence in a particular form or act.
3. A return to the subject, in that the qualities produced in this special form of activity abide in the subject as a tendency, or as apperceiving material for new activities.

In noting the discussion on pages 45-60, in connection with the illustration on pages 94-98, it will be observed that the movement of mind in dealing with the individual object is:

1. To consider the object practically as a whole.
2. To consider it "in small logically connected sections." (Page 55.)

The second movement is called by the author the law of "Successive Clearness." It is evident that it is analytic. These two stages, therefore, resemble very closely the two that have heretofore been given, in the present work, under the third view of method. Are the third and the fourth stages indicated? The following seems to denote the third stage or the organization of the distinctions by relating them to the central unity. "On the other hand, to fail to associate the parts of the lesson and to bring them to consciousness as a logical unity, would be to reveal the mind distracted by the apprehension of a confused mass of disconnected details. These two steps, the absorption of individual notions, and their apperception, Herbart compares to the process of breathing, calling them the inspiration and expiration of the soul. Our maxim, step by step, has to do

with this process, but it is incomplete, for its suggests only the sub-division without hinting at its purpose—the clear perception of individuals and their proper synthesis in consciousness." (Page 56.)

As a hint of the fourth stage, (referred to in this work on page 26), the following may be quoted: "Next to the formation of the series in instruction comes the need of fixing it in the mind. This, as we have seen, needs time. It needs also a constant attention to the matter in hand. Repetition gives the time, and skill on the part of the teacher will secure the attention." (Page 60.)

In this work, therefore, is found a close approach to the third view of method.

14. In the preface to "Systematic Methodology"* the author indicates:

1. That the work is written for those interested in understanding the philosophy of teaching.

2. That the work is to be a systematic treatment of the problems of teaching.

3. That parts I and II are adapted to those wishing to master the philosophy of education, and parts II and III to those desiring to study merely the practical problems that arise in presenting the different branches of study.

In the introduction there are presented:

1. The idea that methods as usually given are varied, inconsistent, and even contradictory; that they lack unity and completeness.

2. The author's view that the art of teaching is capable of order and of systematic treatment.

3. The thought that there are two important lines of investigation necessary to make methods rational:

a. The study of the human mind.

* "Systematic Methodology," by Andrew Thomas Smith. Silver, Burdett & Co.

b. The study of the nature of truth.

4. The thought that in order to make the discussion complete and systematic, three things must be done:

a. Terms must be used with consistency.

b. Recommendations must not be given in one connection and violated in another.

c. Methods in the given subjects must all obey certain well defined fundamental lines applicable to truth in general.

5. The statement that one aim of the work is to make clear to the reader that all school studies which have to do with a body of truth to be comprehended are capable of being taught by the same comprehensive plan.

6. The claim that another aim of the work is to make clear to the learner that there are many school subjects which do not consist of a body of truth to be comprehended; that these are either subjects that may be called arts, or subjects expressing merely facts to be impressed upon the memory.

7. An explanation of the terms "practical method" and "device."

8. The thought that method is, in large part, a derived science.

Under the explanation of the first aim, the author presents his view of the world: "In the world of things about which we study, only individuals exist, while generalizations are merely contrivances of man wrought out for his convenience in mastering the truths concerning this world of real, but individual things."

This same view of the world is again presented under the discussion of Principle on page 10: "We know nothing of the essence of mind, as we know nothing of the essence of matter. Phenomena alone are open to our study. What mind or matter does we may know, but not what either is."

Under the discussion of the first aim, the author also presents "the comprehensive plan" according to which subjects expressing truth may be treated. The comprehensive plan is, "Generalizations of a given order are to be comprehended only in the light of the appropriate individuals embraced within them." This is termed "the one comprehensive plan or principle of learning."

The book consist of three parts: first, The Nature and Development of the Mental Faculties; second, The General Philosophy of Method; third, Applied Methodology.

Under the first, all forms of psychological activity are briefly considered.

Under the second, three main topics are discussed:

1. The notion or concept; 2. Distinctions of *method* based upon the truths of the concept; 3. The actual realties of school subjects.

Under the second, four subordinate topics are treated:

1. The four *methods.*
2. The order of use of the contrasted *methods.*
3. Special process in teaching facts and art.
4. The concrete and the abstract in teaching.

Under the third, attention is given to method in the various branches.

In considering whether the work is based fundamentally upon the first, second, or third view of method, it will be necessary to examine certain expressions.

On page 5 the author says, "Works on teaching abound in which are to be found many and varied recommendations in *method,* most of which do not rise above the dignity of reasonable devices." This seems to distinguish method from devices.

On page 11 the following definition of method is given: "A *method* in pedagogy is a rational plan or series of steps for effecting results in teaching."

The first portion of this statement seems to regard method as an idea in the mind of the teacher; that is it is a rational plan held in consciousness. The second portion of the statement looks upon it as a series of steps. It seems that these steps are the outward acts of the teacher, because they are spoken of as intended to bring about results in teaching.

In the same connection this is said: "*Method* is procedure according to principles." This would seem to indicate that method is the outward activities of the teacher governed by a certain thought or principle.

It is also said upon the same page: "A *method* of teaching, then, is procedure in teaching according to the principles of teaching." This implies that the method consists of the outward activities of the teacher.

On page 12 it is said: "*Method* is a way of reaching a given end by a series of acts which tend to secure it, but device refers rather to a single action." This seems to identify device and method, in that it regards each as an act, and the assumption is that this act is the outward act of the teacher, since the author looks upon device as merely a single act, while method is a series of acts.

The use of the terms, "analytic *method*," "synthetic *method*," "inductive *method*" and "deductive *method*," on pages 111 and 113, implies, unless closely scrutinized, that method is the psychological movement of the child in studying. A more careful examination of these expressions, however, seems to indicate that the author means, under the analytic method, the explanations, questions, suggestions, etc., of the teacher adapted to lead the child to analyze an object into its parts or elements. The same inference may be drawn as to the other methods mentioned.

On page 125 the author says: "Learning should begin with individuals and should return to individuals." This

outwardly indicates that the third view of method is held.

On page 127 there is an indication that the child is (1) to comprehend an object as a whole, analyze it into its parts, comprehend the whole as made up of these parts; (2) to conceive from several such wholes a general belonging to these similar objects; (3) to discover this general in new objects. This also hints the third view of method.

On pages 286-291, in considering the subject of literature, there is also some indication of the third view of method. The first movement of consciousness is indicated on page 286, the second on page 288, and the third on page 291.

On page 309 the following statement occurs: "We know a man, a horse, a house or a piano first as entire things; we are able to recognize these things and give their names; later, through our desire to know them more fully, we are forced to the necessity of mentally analyzing them. Then, after we have studied the details of their parts, we know the things in their entirety more intimately." This gives an indistinct indication of the third view of method.

On page 318 the author says: "The *method* in this, as in all natural sciences, should be inductive—leading up from the individual instances presented to the appropriate generalizations, and then returning to apply these truths in newly discovered instances." This likewise suggests the fundamental movement of consciousness.

Under all these uses, however, there is no clear indication that the author regards method as the fundamental movement of consciousness in the child. There is rather the indication that he considers method to be the activities of the teacher controlled by the notion that the mind may deal with particular objects in two ways, and with generalizations in two ways. Fundamentally, then, the work is in harmony with the first view of method. The principle that

prevents the work from being truly organic or systematic is the one mentioned on page 8. "In the world of things about which we study, only individuals exist, while generalizations are merely contrivances of man wrought out for his convenience in mastering the truths concerning this world of real but individual things." This idea would indicate that a greater degree of truth is reached in sense-perception than in memory, a greater degree in memory than in imagination, a greater degree in imagination than in conception, etc. This view of the world is essentially divisive. According to such a view, no work can possess a fundamental unity. The reason is that, according to such a view, the individual is the only truth.

This view of the world is again reflected in the idea of the concept presented on page 98. This indicates that the concept is the notion of an individual object or of the class. It is to be noted that the class is regarded as merely an aggregation of individual objects, and is usually, therefore, a space-occupying thing. The notion which applies to a class is regarded as concerned with the set of common attributes. This does not harmonize with the modern view of the concept, namely, that it signifies the creative activity producing the various objects of the class. This view of the world again reveals itself in the division of method into four kinds, the analytic, the synthetic, the inductive and the deductive. If the world is a true unity instead of being made up, as the author suggests on page 8, of particulars, there is a single method according to which every branch of study should be taught. The separative tendency of the view of the world given by the author on page 8 also manifests itself in the classification of subjects given on page 131. It is further exhibited in that the author presents the different psychological facts much as they would be given in a work on psychology instead of

limiting the psychological treatment strictly to those elements that reflect the notion of method given in the book.

The separative tendency of his view of the world also exhibits itself in the fact that the special methods given under the different branches of study do not definitely reveal the idea of method presented on pages 111 to 114. The view that, "In the world about which we study only individuals exist, while generalizations are merely contrivances of man wrought out for his convenience in mastering the truths concerning this world of real but individual things," is the ground for the various ways in which the author uses the term *methods*.

After having explained the four distinct *methods* as given on pages 111 to 114, would the author be entitled to use the term *method* in any other sense than in one of the four given? Would there not be, indeed, a tendency on the part of every reader to seek some one fundamental sense to which these four could be reduced? Let the following uses of the term be noticed in order to decide whether they are already included in one or more of the four mentioned on pages 111 to 114.

On page 8 the author speaks of "the varieties of so-called '*methods*' of learning as simply 'variations of one comprehensive plan.'" This identifies the term "method" with the term "comprehensive plan."

On page 10 the author speaks of a "principle" as the "basis of method." This distinguishes method from principle.

On page 133 the following occurs: "Our *method* of teaching, then, should be one of imitation and practice." What is the relation of this method to the four mentioned on pages 111 to 114? Apply the same question to the use of the word "method" in the following quotations:

Page 134, "It seems to receive attention only when the

study is one that requires in its recitation some special *method* of delivery, as in declamation or singing."

Page 141, "The only difference between childhood and manhood in regard to these *methods* is the difference in the predominant element. Both *methods* should be employed always." The author here refers to the concrete and the abstract methods.

Page 146, "The product secured through such direct study should be compared with the products secured by the other pupils through a similar *method* of study."

Page 167, "This *method* of procedure robs the drawing class of its mechanical drudgery."

Page 249, "It is not the ancient, stereotyped *method* of parsing."

Page 257, "The child's *method* of study"; "a method of testing"; "the written method of recitation."

Page 263, "History is a *methodical* record of the important events which concern a community of men."

Page 331, "To this end we should adopt what is called the scientific *method* of counting rather than the given *method.*"

On account of the view that the world consist of real but individual things and that there are no generals in reality, the distinction is made into subjects expressing truth, those expressing facts and those that are merely form. This leads to a variety of method. In consequence, the book does not present one fundamental method. The tendency of the book is to lead the student to regard method as the outward activity of the teacher controlled by the principles belonging to the subject of study.

15. In "Scientific Method in Education"* the "scientific method" is held to be an attitude of the mind. Thus

* "Scientific Method in Education," by Ella Flagg Young, in Volume III. of the Decennial Publication, published by the University of Chicago Press.

on page 144 it is defined as follows: "Scientific *method* is the *method,* the attitude of mind that makes a search for the principle under which facts and observations may be experienced in their relations and made significant." This is seen to refer to the psychological activities of the learner. It does not, however, indicate a process of the mind as given by Mr. Cramer in the "Method of Darwin," page 30.

Mr. Cramer gives the "scientific method" as "observation, induction, deduction and verification." In both cases, however, the view of method is that which has been termed the second view in that it relates to the psychological activity of the learner. Often in the discussion the first view of method appears. The following are examples: "Educational method to be of worth should be scientific method applied to the art of teaching." (Page 147.) "The return to old *methods* of instruction and school management, the repudiation of the theories which have issued from investigation of biology and psychology have at once indicated that the theories have been found wanting because of the readiness with which they were constructed from the few facts." (Page 152.) "The application of the *method* of science to research in the social heritage of the child of to-day." (Page 154.) "Many individual teachers in the schools of this country are in intelligent sympathy with the aims and ways of scientific *method* as applied to education." (Page 155.)

The second view of method is, however, more prominent in the article. The definition of the scientific method given above indicates the second view. The following are also examples of that view:

"The *method* of the teacher is simply an attitude of the mind like that of the scientist.—Page 147. "To teach children necessitates a knowledge of the mind, the law of mental activity."—Page 148. "The first element, the

children, necessitates a readiness on the part of the teacher in interpreting the contents of mind, clear vision as to their *method,* and a sympathetic understanding of general conditions which are indicated not only by language expression but also by bodily expression."—Page 150. "There should be an acquaintance with this which has been obtained by the psychologic *method;* that is, through investigation, through observation of sequences, and also by the logical *method,* that is, through making conscious standards, or norms, of the ends toward which the psychological material points."

"The two aspects of a subject gained by these two lines of approach,.....may be called the *method* of the subject."—Page 151.

"A growing understanding of the *method* by which the mind works and develops shows it to be the inductive *method* of the scientist."—Page 154.

The third view appears but once in the discussion. It is then only incidental. It is indicated in the following: "As one does not become a botanist or a zoologist by beginning with the principles and data of pure science, so one cannot understand the life process of the soul if there be no original observation of the activity of the mind preceding the study of psychology. As in the other sciences, the purely scientific study must be followed by a return to such material as formed the basis of observation and experience in the first stage, so in psychology the applied science must follow the pure science. In the study of psychology, the teacher must go through three stages: first, the observational and introspective; second, the purely scientific and experimental; third, the applied, which is generally termed educational psychology. He does not go through the third, he enters into it."—Page 149.

CHAPTER VI.

METHOD IN A BRANCH OF STUDY.

It is assumed that one who enters upon an investigation of method in a branch of study is familiar with the facts of the subject. Upon the basis of this familiarity he investigates the essential features that give organization to the subject.

These essential features may be held to be: the central idea of the subject, the scope as determined by the central idea, the divisions and subdivisions as determined by the central idea, the relative importance of the divisions and subdivisions as determined by the central idea.

The act of the pupil in learning a fact of the subject so characterized constitutes the fifth element. This would result in special mental effects. These mental effects constitute the sixth aspect of the method in a branch of study.

There are certain rational means, to a large extent peculiar to each subject, for stimulating and guiding the pupil's process of learning the subject. The method in a subject, therefore, includes:

I. The Organizing Principle of the Subject.
II. The Scope of Material.
III. The Divisions.
IV. The Relative Importance of the Divisions.
V. The Mental Process in Learning a Fact of the Subject.
VI. The Mental Effects.
VII. The Means or Devices.

Of these the central or organizing principle is predominant. It determines the scope, the divisions and subdivisions and relative importance. It contributes in determining the process in the child's mind, the effect produced in the mind of the child, and the devices to be employed. The first four, the organizing principle, the scope, the divisions and subdivisions and the relative importance relate to the branch of study. The fifth and sixth relate to the mind of the learner. The seventh is a stimulus to the mind of the learner in mastering the subject- matter. It is identified on the one hand with the knowledge of the pupil, and on the other hand with the nature of the subject-matter. These characteristics of method in any branch of study may be illustrated by the subject of composition.

METHOD IN COMPOSITION.

I. In composition the *organizing principle* is thought which is in a process of development, expressed in language which is changing to adapt itself to the growing thought, for the purpose of communication.

II. The *scope* of composition is that range of material possessing the distinguishing mark of composition, that which differentiates composition from other language studies. This material is found to include an attribute which unifies composition with all other language studies and an attribute which unifies it with all existence. The first is the particular attribute; the second, the general; and the third, the universal.

III. The *divisions* in composition must be genetic, that is, they must involve the organizing principle. The fundamental division is therefore into developing content, and developing expression. The developing content then differentiates into developing purpose and developing thought. The form or expression differentiates into changing audible

expression and changing visible expression. Both form and content manifest many other subdivisions.

IV. The *relative importance* of these divisions and subdivisions is determined by the degree to which they manifest the organizing principle of the subject.

V. In composition, as is the case in all other branches of study, the fifth essential element is *the psychological process in the mind of the learner.*

1. The process.

The first step in the process is the objectification of a thought. The following paragraph may be used in illustration:

"The word 'noise' is derived from a Latin word meaning nausea, through a French word meaning quarrel. The significance in each of these derivations is that of the negative. Noise is sound that is not rhythmical. The movement of neural life and also of mental life is marked by rhythm. A noise is, therefore, in a certain sense, a quarrel with these movements in that it hinders the natural process. Even rhythmical sound becomes noise if it tends to hinder or to annual a rational process entitled to occur at the time. Thus, sweet music, or a well-modulated conversation, if interfering with a required explanation, conversation, slumber, or rest of an invalid, is, under the circumstances, a noise. Any sound, then, which quarrels with a required rational process is a noise and a damage."

2. The analysis of the process:

In the given case, the first stage in the process is the indistinct projection of the subject in language. There is no separation of content and form. If the idea of the object is present, the term itself seems to be inseparably with it. If a distinction is thought in the content, as that noise is a lack of rhythm, the thought does not precede the language appropriate to the thought. The language is

there contemporaneously with the thought. The self may be said to think in words. Composition is one of the best subjects by which to illustrate the doctrine that the first stage of consciousness is a dim apprehension of a fused unity. The above paragraph when first created was a fused union of expression and meaning.

The writer may have thought spontaneously of the noise of a whistle, the stimulus being present. The object thought of and the expression were known as one. Then there arose the conception of noise, but the word was there embodying the concept.

The thought of noise as a damage was the stimulus for the purpose, and in a subconscious process the writer thought of mankind as not knowing that noise is a damage; created the ideal of mankind as knowing it thus; desired the ideal condition and then chose it. The purpose to communicate the thought of noise as a damage seemed too general and the writer spontaneously limited it to the purpose to explain the kinds of noises in general that are damaging. The purpose had now become conscious and definite.

This describes the psychological process by which a self imposes upon itself, at first unconsciously, and then consciously, a purpose. It also reveals the interaction of theme and purpose. Often a general theme arises in consciousness which stimulates a definite purpose. This more exact purpose determines the limits of the theme. It is this second theme which is expressed in discourse, not the first. This gives the purpose as arising first and the theme second in the process of creating discourse when the process arises spontaneously.

If the creation of the discourse is assigned from without the purpose precedes the theme. Thus discourse always expresses a theme limited and characterized by the purpose.

The purpose and the special theme having been created

in the case given, the writer entered upon the stage of thinking the subject as a whole, in conceiving it as negative; this was succeeded by the stage of distinction in thinking noise to be negative when lacking rhythm, and when possessing it under given circumstances. To this stage succeeded the one in which all distinctions, while held in consciousness, were unified in the one object characterized as negative. As each distinction in thought arose, it appeared clothed in its own language. Thus, at the conclusion of this movement, content and form are fused. The paragraph, as it exists now in space, is a fused product, the result of the first stage of consciousness, although all three stages have appeared in the process of creating this product. That was to be expected, however. If the threefold movement is native to consciousness all three will be reflected in the first movement itself.

The person who has written the paragraph now enters upon the second stage, that of distinction. Giving attention to the constructed paragraph, he begins to differentiate it into form and content. In doing so he enters upon the second stage of the process in composition. In giving attention to the expression as it is, the process is abstracting. This expression is then distinguished from its meaning (discrimination). Other similar expressions are reacted. Each of these reacted expressions is discriminated from the meaning and from the original expression. This terminates the second stage.

These different expressions are compared with one another and with the meaning. In this comparison the mind enters upon the third stage, that of unifying. The mind judges as to the most appropriate expression, and decides as to the ground for considering this expression the most appropriate. This concludes the process in composition.

In the given paragraph the following may be noted as activities which exhibit the second and third stages:

Consideration of the paragraph as a whole. Has the paragraph unity? That is, does every sentence bear upon the subject *noise?* In answering this question, sentence four may be studied. At first it may seem that in this sentence nothing has been given concerning noise, yet if the sentence is taken in its connection with the preceding one, it is found that rhythm is given as the positive of noise. The words of transition should be near the beginning of the sentence so as to make the connection between the thoughts evident at once. Thus the second sentence may be rearranged and combined with the third so as to read as follows: "Each of these derivations signifies the negative, i. e., noise is sound that is not rhythmical." In the fourth sentence the transitional word is rhythm, so it may be changed to read, "Rhythm is the characteristic of neural and also of mental life."

After these changes have been made, the paragraph will appear as follows:

The word, "noise," is derived from a Latin word meaning nausea through a French word meaning quarrel.

Each of these derivations signifies the negative; i. e., noise is sound that is not rhythmical.

Rhythm is the characteristic of neural and also of mental life. A noise is, therefore, in a certain sense, a quarrel with these movements in that it hinders the natural process. Even rhythmical sound becomes noise if it tends to hinder or to annul a rational process entitled to occur at the time.

Thus, sweet music, or a well-modulated conversation, if interfering with a required explanation, conversation, slumber, or rest of an invalid, is, under the circumstances, a noise. Any sound, then, which quarrels with a required rational process is a noise, and hence a damage.

Consideration of the details.

Attention is given to the fact that the word, "word," occurs three times in the first sentence. This may be modified by using for the second, the word, "term," and for the third, the word, "expression."

The word, "meaning," occurs twice in this sentence. "Signifying" and "denoting" may be used instead.

In the second sentence the expression, "words," may be employed instead of "derivations."

After the word, "rhythmical," the following may be inserted: "Noise may lack rhythm in being too monotonous, as is often the case with heathen music, or it may manifest an unregulated and excessive variety."

The words, "neural action," and "mental process," may be used instead of "neural" and "mental life."

After "mental process" insert, "This is peculiarly true of consciousness, because it is fundamentally subject-object, that is, an existing condition, a departure from it, and a return to it."

Instead of the expression, "These movements in that it hinders the natural process," the following may be given: "The alternate ebb and flow of nervous response and with the rhythmical process in sense-perception."

The expression, "To annul or even to hinder," may be used instead of "to hinder or to annul."

For the expression, "a rational process entitled to occur at the time," may be substituted "an activity higher than the sensuous response to rhythmical sound, or one in the interest of such higher activity."

After the expression, "modulated conversation," there may be inserted "or any similar rhythmical activity."

In the last sentence after the word, "and," the term, "hence," may be inserted.

As finally modified, the paragraph will appear as follows:

"The word, 'noise,' is derived from a Latin term signifying nausea, through a French expression denoting quarrel. Each of these words signifies the negative, i. e., noise is sound that is not rhythmical. Noise may lack rhythm in being too monotonous, as is often the case with heathen music, or it may manifest an unregulated and excessive variety. Rhythm is the characteristic of neural action and also of mental process. This is peculiarly true of consciousness because it is fundamentally subject-object, that is an existing condition, a departure from it, and a return to it.

A noise is, therefore, in a certain sense, a quarrel with the alternate ebb and flow of nervous response and with the rhythmical process in sense-perception. Even rhythmical sound becomes noise if it tends to annul or even to hinder an activity higher than the sensuous response to rhythmical sound, or one in the interest of such higher activity.

Thus, sweet music, or a well-modulated conversation, or any similar rhythmical activity, if interfering with a required explanation, conversation, slumber, or rest of an invalid, is, under the circumstances, a noise.

Any sound, then, which quarrels with a required rational process is a noise, and hence a damage."

The process of producing this series of paragraphs involved abstraction (noticing a given expression); abstraction (separating this expression from its meaning); discrimination (holding the expression and meaning apart in the one act of consciousness); memorization (reacting or creating another or other expressions for the same meaning); discrimination (holding each of the new expressions apart from the meaning and from the other expressions). This practically concludes the second or separative stage.

The mind then enters upon the third stage. This involves comparison, (the act of considering the expressions as to their relative fitness to communicate the meaning);

judging, (the act of deciding upon the most appropriate expression); deductive reasoning, (the act of becoming conscious of the ground or general principle for the judgment).

Further modification of the paragraph, even in a single respect, would also involve both the second and third stages of the language process.

The entire process is—(first stage) consciousness of a general theme; limitation of a general theme; construction of a purpose to communicate (consciousness of a limit in those to be addressed, idealization of condition in which the limit is removed, desire for that condition, choice of the desired condition;) consciousness of the theme as adapted to the purpose; apprehension of the theme as an indistinct whole; abstraction, or the analysis of the theme into its elements regarding each one as distinct; judgment that a given element is the central or characteristic element; conception or the knowledge of this central element as manifesting itself in varying degrees in each of the other elements. (In all this process the thinking was in language so that, as the thought was produced, the corresponding language was created. The consequence is that the thought exists expressed and has become an object for the mind's activity in the second and third stages of the language act, which stages appear as follows): abstraction of some element of expression; abstraction of this element from its meaning; discrimination of this meaning and expression; remembering the construction of similar expressions; discriminating each of these from the meaning and from each other; (end of the second or separative stage); comparing the expressions as to their fitness to express the meaning; judging the expression most appropriate to the meaning; reasoning deductively as to the ground for the judgment; (the end of the third stage.)

VI. Among *the mental effects* to be produced by composition, the following may be noted:

1. As related to the whole.

The establishment of the first stage of the language activity as a habit. (*Psychology*, Dewey, page 211.) This involves sense-perception of the expression, the imagining or thinking of the meaning in an indefinite way, the thinking of the meaning in more definite form, the creation of a distinct purpose, the expression of the meaning as adapted to the purpose, the thinking of the language and its correspondence to the meaning.

2. As limited to the separate elements:

Meaning or content.

Distinct knowledge of the purpose of discourse.

Knowledge of the three kinds of objects (objective, subjective and figurative) and of the four subordinate kinds—(individual object changing, etc.)

Fuller knowledge of the various attributes and relations of objects.

Emphasis of the relations of fused unity, difference, and unity after difference.

A strong sense of order in the unfolding of an action or of an object.

A consciousness of the central law of discourse —unity (purpose)—and of subordinate laws—(selection, order, completion, coherence and proportion.)

A tendency to have a conscious center in all discourse.

The notion, that each sentence, paragraph and entire selection has a center.

Expression.

A clearer idea of the three kinds of language and the four forms of discourse.

The creation of a tendency to brevity.

A refinement of taste in the use of words.

The rendering of iteration purposive.

The rendering of slang useless.

Satisfaction on account of the best field for objectifying.

The correspondence of meaning (purpose and thought) and expression.

The habit of self-examination as a test in the use of words.

Satisfaction in the knowledge of the thought of the race as expressed in words.

VII. The *devices* in a branch of study are general and special. The general device or means is the organized course of study. This general device in composition may be given as follows:

THE COURSE OF STUDY IN COMPOSITION.

STAGES IN THE PRIMARY GRADES.

The First Stage.

First and Second Grades.

In the first stage of composition, conversation is prominent. The effort is to have the child acquire the correct use of language without giving attention to its structure or to the principles underlying the structure. The result is that the child is intent upon communicating only, and meaning and form are practically fused. During this stage there should be a strong effort to awaken the sense of the value of power in conversation, and the sense of the importance of the English language. The conversation is at times to be ordered, in that the teacher selects the objects, and decides upon the successive topics.

This is for the purpose of making the child familiar with thoughtful, regulated conversation manifesting law. At

other times the conversation is to be more fully under the choice of the child, in that he will select the object and determine the successive topics. This will be favorable to his spontaneity. In bringing about conversation upon any subject, the pupil will be led to objectify freely his thought in language. The teacher will then aid him in changing the meagre, or profuse, or otherwise inartistic forms into clear, concise and refined expression. Much conversation centers in the systematic construction of a series of sentences expressing the successive phases of an activity in nature, or in the life of man, viewed as returning to its beginning phase. Conversation also arises in the form of the free reproduction of stories read or told by the teacher. The conversational aspect of the work may be supplemented by its reproduction in script or print upon the board, by the expression in script or print of sentences slowly constructed concerning an inanimate object, plant or animal being studied, and by the combination of these sentences, and their formation into paragraphs. Conversation, and also all the more definite forms of work mentioned as belonging to this first stage, may be both strengthened and refined by the consideration of songs, poems and artistic prose.

Five lines of work are thus implied:

Ordered conversation on objects selected by the teacher.

Conversation on objects chosen by the child.

The learning of selections of a high literary value.

Reading to the children by the teacher for the refining effect of the language and thought upon the pupil's power of conversation, and for the purpose of having the selections read and reproduced substantially.

The construction of a series of sentences expressing in ordered sequence the elements in acts of nature and in

the institutions of society. (Astronomy, geometry; an act in the home; an act in the school, etc.)

The ordered conservations may be upon natural objects, upon manufactured objects, upon productions in art, upon the various activities of instutional life, etc.

Among the objects constituting a basis for these ordered conversations may be noted the following:

Geographical.

September, Equal days and nights, direction, the direction of the sun at sunset.

October, Frosts, dew, the formation of dew on cold surfaces.

November, The winds, their direction, force and temperature (the thermometer).

December, The short days and long nights, the length of the sun's shadow at noon.

January, Snow flakes, the covering for plants.

February, Freezing and thawing, the crumbling of clods, rocks, etc.

March, Clouds and their forms and names, action of frost, rain, etc., on the soil.

April, Rain and its measurements, illustrations of evaporation.

May, examination of a brook, its action in carrying and depositing soil.

June, Length of days, position of the sun in early morning, at noon and at sunset.

Examination during the year of sand, pebbles, boulders, gravel, shale, limestone, sandstone, etc.

Biological.

Plants.

September, Aster, golden rod, mustard, gentian, touch-me-not, velvet leaf, the various kinds of mallow, corn flower, dodder, beech drop.

October, The flowering plants remaining are the specimens of September. During October the conversations could be based upon the material of seed distribution. Among these may be noted the sandbur, cocklebur, burdock, milkweed pods, seeds of dandelion, seeds of maple, oak, beech, gum, etc. During November, December, January, February and March, the conversation could be based upon non-flowering plants. Among these are the common puffball, earth star, the various toadstools and mushrooms, lichens (reindeer and others), common bread mould, shelf fungus, mosses (pigeon wheat preferred), ferns, Indian compass plant, and some algae.

April, Spring beauty, wind flower, hepatica, blood root.

May, Buttercup, marsh marigold (see Songs of Seven), trillium, Jack-in-the-pulpit (see poem, Indiana Third Reader, page 191).

June, Dandelion, the various mustards, clovers, spiderworts, iris, wild geranium, water leaf, etc.

Animals.

September, Grasshoppers, beetles.

October, Clams, Oysters.

November, Butterflies, moths. (See book on Butterflies, pub. by Doubleday, Page & Co.)

December, Crayfish, lobster.

January, Fishes—yellow perch, Jack salmon.

February, The frog.

March, The woodpecker, crow, blackbird, jays.

April, Redbird, sparrow, marsh robin.

May, Wren, thrushes.

June, Hawks, owls.

Manufactured objects.

These are so numerous and so common that no selections need be indicated.

Art.

Architecture.

The dome, the Greek column, the Roman arch, the Gothic window, the spire.

Sculpture.

A selection (probably in picture form) of an example from Oriental, Greek, Roman, Mediaeval and Modern Sculpture.

Painting.

A selection from Oriental, Greek, Roman, Mediaeval and Modern Painting.

Activities in institutional life.

These are so numerous and so accessible that no example need be given.

Selection to be read to children.

(Portions of these selections may be committed to memory by the children after the thought has been carefully worked out.)

"In Time's Swing," Fourth Reader, McGuffey's, page 77; "The Lapse of Time," Bryant's Poems (household edition), page 75; "Freaks of the Frost," Fourth Reader, Harper's, page 46; "The Frost King," in "Rhymes and Jingles," by Mary Mapes Dodge, page 199; "Snow," in "Rhymes and Jingles," by Mary Mapes Dodge, page 12; "Snow Song," Lucy Larcom's Poems, page 123; "The First Snow Fall," Literary Selections (Lowell), page 320; "Evening Hymn," Second Reader, McGuffey's, page 43; "Twilight," Third Reader, Harper's, page 257; "The New Moon," Second Reader, Harper's, page 161; "The Moon's Lullaby," Third Reader, Harper's, page 39; "March," Second Reader, McGuffey's, page 139; "March," Lucy Larcom's Poems, page 124; "April," in "When the Birds Go North Again," by Ella Higginson, page 43; "The Rainbow," (stanza at the close) Supplementary Sec-

ond Reader, Golden Book of Choice Reading; "The Rainbow," Fifth Reader, McGuffey's, page 195; "The Seasons," (the stanza on "Summer"), Fourth Reader, McGuffey's, page 237; "A Summer Day," School Reading by Grades, page 35; "The Seasons," (stanza on "Winter"), Third Reader, McGuffey's, page 237; "Winter," Lucy Larcom's Poems, page 179; "The Seasons" (stanza on "Spring), Fourth Reader, McGuffey's, page 237; "Spring," Third Reader, McGuffey's, page 132; "The Seasons" (stanza on "Autumn"), Fourth Reader, McGuffey's, page 237; "The Autumn Is Old," Fourth Reader, Indiana revision, page 234. Other selections expressing other aspects of life, both of nature and man, may be chosen.

Pictures.

Conversations upon objects similar to those indicated in the foregoing and graded according to the time of year and difficulty of use, constitute the work for the first and second years. The work contemplates a definite period for composition of not less than ten minutes from three to five days during the week.

The Second Stage.

Third Grade.

This second stage, although also one of conservation, is marked especially by the fact that it is a stage devoted to the discovery of distinctions. Throughout, the pupil is concerned with differences, and is therefore chiefly analytic in his procedure. During the year the work is to be so organized as to lead the pupil to notice and to express himself as to the following distinctions in language:

The distinction of language to express the external; as, *fence;* the spiritual; as, *I fear he is not here;* the symbolic; as, *I am the vine, ye are the branches.* These distinctions

are to be the more simple ones, and are to be sought in the readers and in general conversation.

The distinction found in the separation of a stanza or paragraph into a series of disconnected sentences. The first stanza of Tennyson's *Bugle Song* so separated will read—

"The splendor falls on castle walls.
The splendor falls on snowy summits old in story.
The long light shakes across the lakes.
The wild cataract leaps in glory."

The idea of the sentence.

The distinction of the sentence into its kinds.

The distinction of each kind of sentence into its two uses—to express some fact, and also to express the mental attitude or state of the speaker.

The distinction involved in working out different forms for some one sentence, as,

The plowman homeward plods his weary way.
The weary plowman plods his homeward way.
His homeward way the weary plowman plods.
His homeward way the plowman weary plods.

The distinction of the sentence into its elements.

The distinction of the sentence into its separate words, especially the chief ones, as nouns, adjectives, verbs,

The distinction found among words, as—

Common noun, proper noun.

The distinctions under each, as names of places, of animals, etc.

The distinction of words into main parts, prefix and suffix.

The distinction between the current and the literal meaning of words.*

The distinctions in the meanings of words as

*See "The Problem of Elementary Composition," by Elizabeth Spalding, p. 27.

shown by readings from such works as Gilman's *Short Stories from the Dictionary.*

The distinction of words into those that are mere signs and those that are onomatopoetic.

The distinction of words into syllables.

The distinction of such words as to, too, two; in, into; is, was, were; has, have, had.

The distinction in meaning belonging to a word of one form, as race.

The different sounds belonging to each letter.

The difference as to the beginning of lines in prose and in poetry.

The difference found in the ending of lines in poetry.

The different images for a sentence separated from its context, as, "It was standing near the fence."**

In this work the separate sentence should be placed before the children upon the blackboard. Each child should then construct in his imagination an environment which, to be fully expressed, would require the given sentence along with other sentences. The pupil's thought of this environment should then be expressed in the form of a brief composition. These compositions should afterward be studied in order to render them both more full in certain respects, and more compact and brief as a whole. At this stage the opportunity arises to consider the different images and the different meanings possessed by the word *it* in the different stories.

The distinction found in the successive elements in a full activity, as, an act in society, an act in geology or geography, an act in physics.

** See "Language for the Grades," by John B. Wisely, p. 141. Published by Atkinson, Mentser & Grover, Chicago.

The different objects, actions, etc., mentioned in a brief selection.

The distinction of the speaker and hearer in brief selections.

The distinction of letters into their form and content, and the distinction of the elements of their content.

The distinction in the process of writing and forwarding a letter.

The distinction of the elements of suspense, surprise and suggestion in stories.

The distinction of the parts of a reading lesson illustrated by pictures, from the parts not so illustrated.

The distinction of the use of pictures in description, from their use in illustrating an element of a story.

The collection of examples of simile and of personification in the pupils' ordinary language.

The examination of brief literary selections in order to discover simple examples of simile and of personification.

Selections from these and similar distinctions should be carefully adapted to the development of the pupil and of the subject.

Fourth Grade.

The work in this stage is essentially constructive. Based upon the many clear distinctions discovered in the previous stage the pupil now enters upon synthetic work. Of course the work in this stage is not solely synthetic. A stage of work in which differences are discovered always involves unity. In like manner, a stage in which unity is the main thought is necessarily marked by many distinctions. The different kinds of work are substantially the following:

1. The study of synonyms.
2. Readings on the literal meanings and history of words

from such works as, Palmer's *Folk-Etymology*, Trench's *The Study of Words*, etc.

3. The elaboration of a single sentence into a paragraph.*

The selection of the sentence, as, "The stream was very clear."

The enumeration of appropriate details.

The construction of a paragraph based on these details.

By class and teacher working together.

By the individual pupil.

The analytic study of paragraphs to discover the truth that a paragraph is merely an elaborated sentence having a common subject and diverse predicates.

The reduction of paragraphs to this simplest form. Suitable paragraphs for such reduction may be found in the works of Irving, Hawthorne, etc.

The analysis of paragraphs to discover:

Topic and attributes.

The law of unity and its relation to diverse objects, and to opposites, as *war* and *peace*.

The study of successive paragraphs to determine:

That the topic limits.

The form of the beginning in each.

The mode of indicating quotation.

The mode of uniting paragraphs.

4. The construction into a brief organized discourse of some one of the series of separate sentences indicated under the work of the previous stage. In this work the pupils should be led to refine and to render more accurate the sentence and then to notice the order of the sentences belonging to the series, and to decide whether it is the order desired. The sentences should then be unified by the use

* "The Problem of Elementary Composition," by Elizabeth Spalding, pp. 64-75

of *and, for, because,* etc. The different thoughts should then be elaborated, the result being fuller expression. This should be followed by the organization into paragraphs.

5. Selection of a particular object, as a tree, and a study of this object resulting in a knowledge of the following laws of the form of composition called *Description.*

Formation of mental picture (Visualization.)*

Point of view. (Referring to place and distance of writer or speaker from the object he is describing.)

Manner of describing (mode of procedure.)

Whole by means of its attributes.

Parts by means of their attributes.

Reconsideration of the whole.

Range of senses appealed to.

Action in description.

Ordering of attributes.

Obvious to obscure.

Physical to mental.

Near to remote.

Specific language.

Purpose of Description.

6. The examination of a brief, simple description of a high grade in order to discover in its structure indications of the characteristics under 5.

7. The study of some simple object accessible to the children and possessing an interest for them.

This study is to lead to the preparation of a brief description of the object. The description is then to be studied in order to learn the purpose of the writer.

The purpose of studying the description is to form the basis for deciding whether the pupil selected just those attributes and parts needed to accomplish his purpose;

* "First Steps in English Composition," by H. C. Peterson, pp. 19-20. (A. Flanagan Co., Chicago.)

whether they were in the order necessary to accomplish the purpose, whether all the attributes and parts needed to accomplish the purpose were given and whether there was proportion of treatment.

8. The construction of descriptions of objects when the point of view is from a distance (a device in harmony with the first stage of consciousness) and when the point of view is near (a device in harmony with the second stage of consciousness.)

9. The examination of already constructed discourse to discover cases of onomatopoetic words.

10. The construction of onomatopoetic paragraphs.*

11. The selection of one or more brief narrations of high grade, upon topics of interest and value to find the following main laws governing this form of discourse.

Essential characteristics, change and coherence.
Theme, purpose and plot of different narrations.
Incidents leading up to main incident.
Setting, time and place.
Characters.

Use the plot, as worked out, in writing first a reproduction of one of the narratives studied. After this, work out a plot of an original story with the whole class and have the pupils write the story. Later let each child write a plot of an original story and then write his own story.

12. The selection of a brief narration of a high grade, upon a topic of interest and value, and the examination of it to discover the laws indicated under 11.

13. The examination of songs in order to stimulate and to direct effort toward literary production.

14. The selection and examination of letters written by children during the different periods of English and American History. The letters selected should be, in so far as

*"The Problem of Elementary Composition," by Elizabeth Spalding, pp. 42-43

possible, representative of different classes. They should pertain largely to home life, and to the relation of child to parent; of brother to sister, etc. To some extent they should relate to society and to the church.*

15. Letter Writing.**

The letters in this stage should relate to affairs of home and school, and to the simple aspects of society for children. They should be written to schoolmates, friends in the neighborhood, friends in distant regions, parents, brothers and sisters.

The established forms of letters should be made clear, and the work should enable the pupil to write a brief letter involving any of the relations above given, according to the accepted form, legible, correct in paragraphing, language, punctuation, etc., and obedient to the laws of discourse.

STAGES IN THE INTERMEDIATE GRADES.

The First Stage.

The first stage is not one of work in the sense that the teacher attempts actively to lead the children into the comprehension and use of more developed forms of language. It is that comprehension and use of language resulting from the work of the fourth and of the other preceding years. The stage is one of fused unity, although not so fully so as the first stage in the primary grades. Knowledge is always partial. The realm of the unknown is far more extensive than that of knowledge. The clearly known in comparison with the unknown or the dimly known is always slight. At the conclusion of the work of the four years the pupil's com-

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*See the "Diary of Anna Greene Winslow," a Puritan girl ten years of age. The diary contains a series of letters written by her while residing in Boston, to her parents, then residing in Nova Scotia.

**For additional examples of letters and for helpful suggestions on the process of beginning the work in letter writing, see pp. 4-5 "The Problem of Elementary Composition," by Elizabeth Spalding.

prehension and use of language involves many indistinct aspects. The stage is one of synthesis, because these aspects are fused into a unity, and because many distinctions are not noticed.

The Second Stage.

Fifth Grade.

The second stage deals with the discovery of distinctions which are somewhat more advanced and difficult than those considered in the third grade. These distinctions are a development of the differences studied in the third grade, and an unfolding of the distinctions not known, or at least but dimly known, at the conclusion of the work of the fourth year. Hence this stage is analytic. Among the distinctions of the stage are the following:

1. The distinction of words as to their current and their literal meaning.*

2. The distinction of words into those that are mere signs, as *hat, on, sit,* etc., and those that are onomatopoetic, as *crash, buzz,* etc.

3. The difference in such expressions as *he, his, him, who, whom,* etc.

4. The difference in the form of the pronoun after the verb *to be* and after such verbs as *to have, to strike.*

5. The difference in the forms of comparison, and their relative value, as, *more dark, darker.*

6. The difference in significance of one and two negatives, as (correct form), *I know nothing of it; I do not know nothing of it* (incorrect form).

7. The difference between an indefinite and a definite subject, and the forms the succeeding pronouns tend to take, as (correct form), "If *Henry* should carry this package to

*The distinction into the current and the literal meanings may be aided by readings from such works as Waites' *Forgotten Meanings.*

the store, *he* would find, etc.; If *anyone* should carry this package to the store *they* would," etc. (incorrect form.)

8. The difference between the single and the double direct object, and the tendency toward different forms for the objective, as (correct form), "He asked *me* to go; He asked *Mary* and *I* to go (incorrect form).

9. In the third grade symbolic language was distinguished from language used to express the external, and from language employed to signify mental states. In this stage further distinctions in symbolic language are to appear. These distinctions will be found under both form and content. Under form are the figurative expressions belonging to single words, and those found in sentences.

The figurative expressions in words are brought about by omission. There may be omission from the first of the word, from within the word, or from the end of the word. In "The Vision of Sir Launfal" the word *'gan* is used instead of *began.* This is called aphaeresis. This is also shown in *you'll for you will.* The second form is syncope. This is shown in the word *o'er.* The third is apocope. An example of this is the use of *yon* instead of *yonder.* This is shown in the "Bugle Song." Another figurative form of words is that of combining by the use of the hyphen.

In sentences also figures are formed by omission, as in the ellipsis. An example of this is, *The virtue I admire,* instead of, *The virtue which I admire.* Related to the ellipsis is the figure called asyndeton. This is the omission of connectives as, *The boy, his father, his mother, his sister, are present.* Another form is obtained by inserting. The general term for this is pleonasm, as, "Thy rod and thy staff *they* comfort me." A subordinate form under this is epanalepsis. This is the repetition of an expression after intervening words or expressions, as *The sun—that great luminary of light and warmth—the sun began to ap-*

pear in its glory. Another subordinate form is epizeuxis. This is the repetition of a word or expression immediately, as, *The sun—the sun, the great contributor of light and warmth began to appear.* A third subordinate form is termed polysyndeton. This is the employment of many connectives, as *The boy, and his father, and his mother, and his sister, are present.* The word *or* may be used in the same way. Another figure under the form of sentences is obtained by substituting one part of speech for another. Among the examples often used are the following: *She will queen it; He will out-Herod Herod.*

Symbolic language deals not only with the form, but also with the content. Under the content the symbolism is shown by *comparison,* by *association* and by *contrast.* Under *comparison* are the well known figures of simile, metaphor and allegory.

It has been held that the work on the simile should at first be oral and common to the class. In the beginning there should be the reading of simile after simile and free conversation concerning each one in order to awaken the thought that the function of the simile is merely to picture or illustrate the writer's thought, and that the thought is the prominent thing. In this discussion it should appear that similes are to reveal striking likenesses amidst marked differences. It is thus seen that the enjoyment of similes rests upon surprise.

The work should then change, and the children should enter upon the examination of literary productions in order to discover cases of the simile.

By means of these exercises the pupils would be prepared to construct paragraphs and brief compositions involving similes. In connection with the metaphor are the forms known as personification and apostrophe.

The work on personification, as that on the simile, may

be oral and common at first. This will be introductory to the examination of literary productions for the purpose of discovering and studying examples of personification. The mode of work recommended in connection with the simile and with personification is mentioned in order to indicate the spirit of work with all figures of thought.

Under *association* are found the two figures spoken of as synecdoche and metonymy. An example under synecdoche is, "Give us this day our daily bread." An example under metonymy is, "The pen is mightier than the sword." The forms of symbolic language under *contrast* are antithesis and climax.*

In these the contrast is clearly expressed. There are in addition the epigram, the interrogation and irony. In these the contrast is merely implied.

These various distinctions involve many strange terms, as aphaeresis, syncope, polysyndeton, etc. Shall these pupils (in age about ten years) be made acquainted with such unusual terms? The difficulty in the use of new, long, scientific words is not essentially in their pronunciation, but in the clear knowledge of their content or exact significance. When the meaning is simple enough to be considered, the exact scientific terms should be taught. For example, the idea expressed by the word polysyndeton is easy of comprehension. After the meaning has been worked out the exact scientific term should be taught and used. To the pupil there is a distinct pleasure in the mastery of such terms. These terms have been produced by the race in its process of development, and they have supplied a distinct need. To be able to comprehend and to use them is, therefore, an act on the part of the pupil which identifies him

*In connection with the study of the climax, the distinction between it and the ending may be shown in the examination of selections, involving the climax. ("The Problem of Elementary Composition," p. 20.)

with the entire race. It has a tendency to make him universal, and although he does not distinctly know this, he feels it to a certain extent and experiences pleasure on that account. The use of the term, *isosceles triangle,* identifies the child and his knowledge with the whole progress of the subject of geometry; and it gives him this sense of the unity with the universal, much more than does the expression, *a space inclosed by three lines, two of which are equal.*

10. The distinction of a selection, as, the "Bugle Song," into the aim of the author in writing it; the thought used to accomplish the aim; the expression; the adaptation of language to thought, and thought to purpose.

11. The distinction of the sentence into the thought to be communicated; the aim of the writer or speaker; the adaptation of the language to accomplish the aim. This last involves the whole realm of distinctions implied in careful substitutions. For example, the pupil may be considering the adaptation of the words in the sentence, *The prisoner's innocence is to be assumed.* He may be led to see by substitution the following: *The innocence of the prisoner is to be supposed.*

12. The distinction of the direct and the indirect quotation, the expressions appropriate and their relative strength.

13. The distinctions found in the successive elements of the full activity in some form of institutional life, as an act in the realm of business, of state, etc.

14. The distinctions found in the successive elements of a full activity in nature, as an act in the development of a plant.

Selections from these and similar distinctions should be carefully adapted to the development of the pupil and of the subject.

The Third Stage.

Sixth Grade.

The work in this stage is like that of the fourth grade—essentially constructive. The work of the fifth grade is a consideration of distinctions more difficult and more extensive than those examined in the third grade. The pupil is now prepared to enter upon this higher grade of synthetic work on account of the preparation given by the work in the fifth year.

As was suggested concerning the work of the fourth grade, the work in this stage is not, and can not be, solely synthetic. In constructive work necessarily certain distinctions are brought into notice; but practically and mainly this stage is a synthetic one in which language is viewed in the process of construction.

The different kinds of work are shown by the following:

1. A careful study of the primary law of discourse—unity (purpose).

Let this law be carefully illustrated. After this has been done let one or more selections from discourse be examined in order to show how they exemplify this primary law.

2. A careful study of the secondary laws of discourse—selection, completeness, order.

Relation to the laws of coherence and proportion.

Carefully and fully illustrate each of these laws, and then examine brief selections from discourse in order to discover in them the presence of these laws.

3. A careful and systematic study of the nature of the paragraph and its laws.*

Examination of paragraphs selected from discourse in

* Study in connection with this work special works upon the paragraph, such for example, as "Paragraph Writing," by Scott and Denney, published by Allyn & Bacon, Boston, Mass., and "Writing in English," by Maxwell and Smith, (especially Chapter IX,) published by the American Book Co.

order to discover the presence of these principles of the paragraph. More advanced work in the elaboration of single sentences into paragraphs as indicated under 3, of the fourth grade work.

4. The construction into a brief, organized discourse of one or more of the series of separate sentences, indicated in 13 and 14, under the work of the fifth grade. Pupils should in this work be led to consider:

The order of the sentences belonging to the series.

The unity of the sentences. This would involve the use of *and, for, because,* etc.

Elaboration of the different thoughts.

Organization into paragraphs.

5. Advanced work in harmony with the suggestions made under 5 in the work of the fourth grade.

6. The examination of a description of a high grade somewhat more difficult than that belonging to the fourth grade to discover in its structure the characteristics mentioned under 5 of the work of the fourth grade.

7. The selection of a particular object viewed as changing, as the formation of the Magna Charta.

The study of this activity as to its purpose, time, cause, effects and parts.

The study of one of the parts as to purpose, time, cause and effect.

The preparation of a brief narration by the pupil setting forth the formation of the Magna Charta.

An examination of this narration in order to test it by the laws of discourse.

8. Advanced work in harmony with the suggestions made under 11 in the work of the fourth grade.

9. The selection and examination of letters written by children and by men and women during the different periods of English and American History. These letters, as

those belonging to the fourth grade, should be selected in so far as possible, to represent different classes of society. The letters in these grades, however, should relate largely to the more complex aspects of society, to business, to the state, and to the church. The pupils should make a collection of letters relating to society, business, state and church, from their parents, from men of business, from government officials and from church officials. Selections should also be made from magazines, works on history and on fiction, and from the daily press.

Examine one or more of the selected letters, testing them by the thought of 5 and 11 of the fourth grade.

10. Letter Writing.

The letters in this stage should relate chiefly to the more advanced aspects of society, to business, to the church and to the state. Among them, however, should be letters upon the more simple aspects of society for children; friendly letters to schoolmates and to friends in general, both in their own neighborhood and in distant regions; letters to parents, to brothers and to sisters. More careful work than that of the fourth grade should be given to the established forms of letters. The purpose is to enable the pupil to write a brief letter that is legible, correct in language, in punctuation, and in paragraphing, on any of the topics above given, and in any of the relations.

SPECIAL DEVICES OR MEANS.

Many special devices have been referred to in this discussion. Several important ones will be mentioned here. The last of these—the construction of a series of sentences—will be given a special explanation, which will bring into view many auxiliary devices:

1. The use of the picture for the purpose of description.

2. The use of the picture to illustrate some event in a story.

3. The preparation of a brief outline for a story by the pupils with the aid of the teacher and the construction of a story as based upon this outline by the pupils.

4. The preparation of an outline for a story by the pupils and the construction by them of a story based on this outline.

5. The construction of a series of sentences expressing the different events in an activity viewed as returning to its beginning.

In the appendix examples of the different series of sentences referred to under the fifth kind of work are given. The action expressed in these sentences is to be found in the work of nature or in the activities of man. The various series representing the activities of man are to reveal his processes in the institutions, that is, in the family, in the church, in the state, etc. Series of sentences could be constructed which would reveal his processes in the arts, as in architecture, painting, etc., and in the modes of activity by which he reveals himself in games and plays.

In the series of sentences given in the appendix, none relate to the field of art or to games or plays. The pupils under the guidance of the teacher, may be led to grade games and plays according to their adaptation to the age and development of the pupils, and to construct series of sentences expressing the activity in typical games and plays. The various series presented in the appendix and also others to be constructed should be graded upon certain definite principles. Among these principles are familiarity, simplicity, and the rise from a high degree of passivity through the different stages of advancement to a high degree of activity. The different series given as examples are distributed and graded mainly according to the third principle.

They are subject, however, to a new distribution and gradation in the light of the first and second principles suggested.*

*The following may be consulted to advantage in the different kinds of work indicated above :

1. "How to Learn a Language in Six Months, by W. T. Stead, (Review of Reviews, Vol. V, July, 1892.)

2. "The Art of Teaching and Studying Languages," by M. Francois Gouin.

3. How to Learn a Language," by J. S. Blackie. (Review of Reviews, Vol. VI, August, 1892.)

4. "The Mother Tongue," Books I, II and III. (Ginn & Co.)

5. " How to Learn a Language in Six Months." A Report of Progress, by R. W. Waddy, and others. (Review of Reviews, Vol. VI, Nov., 1892.)

6. "A Royal Road to Learn Languages." The Result of Six Months' Experiment—W. T. Stead's Report Upon the Experiment in His Family. (Review of Reviews, Vol. VII, March, 1893.)

7. "The Acquisition of Language by Children," by M. Taine. (Mind, Vol. II, April, 1877.)

8. An Infant's Progress in Language," by F. Pollock. (Mind, Vol. II, July 1873.)

9. "Thought and Language," by G. F. Stout. Mind, Vol. XVI, Jan. 1891.)

10. The Chapter on—Language Tone and and Gesture; Articulation, Relation of Tone and Gesture to Words, Speech—in "Mental Evolution in Man," by George J. Romanes.

11. "Language for The Grades," by J. B. Wisely. (Atkinson, Mentzer & Grover, Chicago.)

12. "The Threefo d Purpose of Primary Language Work," by J. B. Wisely. (A brief article in the Inland Educator, Vol. III, Nov., 1890.)

13. "Beginning Steps in Composition," by H. C. Peterson. (A. Flanagan, Chicago.)

14. "The Problem of Elementary Composition," by Elizabeth Spalding. (D. C. Heath & Co.)

15. "The Teaching of English," by Percival Chubb. (The Macmillan Co.)

CHAPTER VII.

METHOD IN A LESSON.

The material in a lesson is identical in nature with the material of an entire branch of study. Method in a lesson is, therefore, characterized by the same essential elements as method in a branch of study. Each lesson has its dominant idea. This is the *organizing principle.* The subject-matter in expressing the general nature of the material and the attribute to be emphasized, indicates the *scope.* The assignment sets forth, substantially, the *divisions, subdivisions* and their *relative importance.* The steps reveal *the psychological process of the learner,* and the devices correspond to the same element in the method in the branch of study. In the method of the lesson, however, these seven aspects of method in a branch of study are treated under subject-matter, assignment, steps, purpose and devices. The psychological aspect is somewhat more prominent in the method of the lesson than in the method of a branch of study. Therefore, the method of the lesson is developed from the principle underlying the process of education.

The method in the lesson is, indeed, practically the activity which is characteristic of education. Education is not merely knowledge; it is aspiration, insight, power. That branch of study which arouses most fully the activity of the student, is the one that is the most educative to him. This subject, to some students, is history; to others, it is mathematics; and to still others, physical science. Education has its principle, and the method in a lesson is identical

with this principle. A principle is the essential mode of activity in an object or process. The principle in education is that psychological activity or process in the pupil which is manifested in every stage of his development.

This central, comprehensive principle of education is best denoted, perhaps, by the term *self-determination.*

The word determination is not here used to signify a fixed purpose, although its meaning includes such acts. The expression, "determination," means *limitation,* indicating that when the self is existing in a given particular act a termination has been put to all other special acts, except in so far as they are involved in the given particular act, and furthermore, that a permanent limit has been given to the self, in that a tendency to react the particular act has become a trait or characteristic.

Why, however, is the principle or mode of activity referred to as *self*-determination?

In order to imply that the object in the physical or in the spiritual environment which seems to be the *cause* of the particular mental state is merely a stimulus, an excitant.

The self having been stimulated by some object in its environment, acts upon itself and thus produces a particular act or state of itself. The self as a distinctive energy or entity, creates out of its potential condition the special state of itself.

It is to be noted further that the activity or principle of self-determination has its process or stages.

1. The self as energy exists as mere capacity, as potentiality. This is a condition of fused unity. In a sense, the mind is "without form and void."

2. The self, aroused by a stimulating object, creates in itself a definite, particular activity. The result is separation. The self in this mental state is different from itself

in the potential stage and also from itself in any other special activity.

3. The self then becomes negative and brings to an end its particular activity. The energy involved in the given activity returns, as it were, to the potential condition, with, however, a definite tendency to react the special activity which has just been brought to an end, apparently.

The foregoing signifies that the self, in the process of education, gradually gives to itself its own definite traits or characteristics, by producing them out of its native but undeveloped capacity. This principle of education is announced by Rosenkranz in "Philosophy of Education," page 26.

One may make the principle more real to himself, and understand more fully its universality, by considering thoughtfully "The Rhythm of Motion," in First Principles, by Herbert Spencer, pp. 250-271; the process in the seed, in the amœba, in the object expressed by the sentence, in a drama or in any other form of fiction.

The second element in the principle of self-determination, i. e., the special activity, differentiates into:

The process of objectifying or making existent in the world ideas that are strictly subjective.

The process of rendering subjective objective existences whether physical or spiritual.

The Objectifying Process. The idea to be objectified may be that—

Of some object of utility, as the cotton gin, the Brooklyn bridge, the constitution of the United States.

Of an idealized activity, as the spiritual condition expressed in "The Chambered Nautilus."

Of a form of conduct or behavior.

Of these three, the last has been selected for a brief con-

sideration because of its explicit manifestation of the process in education.

Behavior always implies a criterion to which one is to conform. This is the reason that any human activity may become moral.

The first stage in behavior is that in which the criterion seems to be externally imposed, as the regulations of the home, the rules of school, the Ten Commandments.

The second stage in behavior is that in which the criterion is subjective only. This is the realm of conscience. If conscience is irrational obedience to it can not be justified. If it is universal it will ultimately become institutional and thus pass over into the third class of criteria. Paul persecuted the Christians in obedience to his conscience. But his conscience was irrational, because if made universal in its application it would have meant that every one was to be persecuted for his religious belief by every one who did not believe in the same way. The conscience of the East Indian impelled him to bury the living wives with the dead husband, but the conscience of the British officer commanded the abolition of the custom. In order to be a true guide the conscience must be educated and thus made universal.

The third stage in behavior is that in which the criterion is subjective-objective, thus possessing the form of universality. The criterion may become subjective-objective in either of two ways—

1. By having the one who obeys the criterion a participant in the creation of it.

2. By having the one who obeys it, study the criterion until he sees the rational ground for it. In this way he takes it up into his consciousness and recreates it, as it were. For example, if the Jews had assembled in convention, and under free discussion, had formulated and adopted the Ten

Commandments as a criterion of conduct, the Ten Commandments would have been a subjective-objective criterion produced in the first way. After the Ten Commandments had been promulgated they could have been rendered subjective--objective to any individual Jew by having him study the reason underlying them until he justified them in his own reason. He would thus have recreated them, and, in a sense, would have become the producer of them. In these ways the regulations of the home, the rules of school, the rules of base ball, lawn tennis, the by-laws of an organization, a party platform, the customs of society, the rules of business, the creed or discipline of a church, and the laws of the state become subjective-objective criteria.

These stages of activity constitute *the principle of discipline or government.*

The Subjectifying Process. This is the process of knowledge or of scholarship. It implies that the Infinite consciousness and the finite consciousness have each passed from the potential condition into the stage of distinction, or the separative stage. To exist in this second stage is to objectify. The Infinite consciousness has objectified itself in suns, stars, clouds, plants, animals, i. e., in the universe of nature. The finite consciousness has objectified itself in the arts, in machinery, in means of communication, in books, and in all kinds of manufactured objects. Scholarship consists in rendering subjective these two great realms—the world of nature and the world of man. Each object in either of these realms is essentially the self. It is the self objectified. Its essence is the process of the self involved in the objectification. The essence of the cotton gin is the process of Eli Whitney's mind in creating it. It is not alien to him, and hence not to mankind. The self of the most immature mind is essentially reflected in the cotton gin. It is the acme of scholarship to possess the tendency to

apprehend intelligence, purpose or the process of the self as the essence of the object. To discover the self in an object does not mean that a subjective, introspective ego is actively present in the object as in the animated body. The meaning is that the rational process of consciousness is reflected in the object. The rational process involves essentially a consciousness of limit or defect, idealization of a new condition lacking the limit, desire for the new condition, choice of the reality of the new condition, creation of the new condition. To become aware of the reason for the web feet in the swan is to discover the self in the object. It is to comprehend the process of intelligence in the Infinite consciousness which, through the process of evolution, gave rise to that structure in the swan.

The General Nature of Knowing.

It may contribute to a clear knowledge of the stages in knowing, to refer to the sense in which the words *object* and *image* are used.

In general usage the word, "object," signifies a space-occupying existence, as a tree, a chair, a cloud, etc. In psychology, the term is used not only to signify existences of this kind, but also to denote any existence whatever, physical or psychical, possible or impossible. The term is used to denote that which is being attended to by the subject. Whatever is set over against the self as an activity is considered to be an object. If the self examines its own activity, the activity which is examined is regarded as an object, while the activity of examining is spoken of as subject. Even the most fleeting psychological or philosophical phenomenon is an object.

The term, "image," also has its narrower and wider significance. In the narrower sense, it denotes a mental

state which signifies a space occupying object. In this sense, it is regarded as the mental transcript or picture of the object. In psychology, however, the word has not only this meaning, but also an additional one. The term signifies the special mental state at any given instant. The particular mental condition at any time, following one mental state and preceeding another, and characterized by a certain definiteness of detail, intensity, etc., is an image, even if it signifies an abstract object. The mental state denoting diversity, patriotism, infinity, etc., is termed an image in psychology. The word, "image" signifies any initial mental state whatever, and the object denoted by the mental state may be material or immaterial. The image is merely the initial aspect of a mental process as the spring is a source of a river. The spring is not one object and the river a separate object. That which is termed spring or source is the river itself in its beginning aspect, while that which is termed river is the spring or source in its developed state. In other words, the image is not one distinct mental state while the succeeding stages constitute another distinct mental act in which the mind manipulates the image.

In entering upon a study of knowing, i. e., of the process of rendering the objective subjective, it is to be noticed that it exhibits certain stages, marked by development.

The first, which has least recognition of the self in the object is *sense-perception*. In every act of sense-perception there is involved the self as an energy, the process in the particular act, and the object perceived as present. The sense-perceptive act is one of fusion in that the object perceived is regarded as entirely different from the self, there being no recognition that the object is an objectification of the self; in that neither the self as an energy nor the special process in the particular act is in consciousness. In sense-perception the mind is engrossed with the object as

something quite distinct from the self. This mode of activity is known as *presentation.*

Its first stage is *sensation.* This is the process of becoming aware of the entire environment as an indistinct whole. In the form of successive and simultaneous sensations the mind responds to the various characteristics of the present objects. All sensations with their corresponding attributes are given slight attention, but there is no special emphasis or selection.

In sensation the mind is rather under the domination of the external world, although each sensation is a manifestation of self-activity, in that the self created it out of itself. It is not received.

The second stage is *perception.* In perception the mind withdraws its slight attention from all attributes or objects being sensed except one. In concentrates its energy upon this one object, dwelling upon it until it has created a distinct image of the object. The self projects this image. That is, it interprets the image to signify the object as present.

The third stage in presentation is *apperception.* Perception is separative. It distinguishes the object from the fused environment and the special act of perception from the condition of the self in sensing.

Apperception is, however, a unifying process. It unifies the present image of the present object with kindred ideas or tendencies which are already elements or constituents of the organized self. The present image may be that signifying a present white grape, (the first one known.) In apperception this idea is identified with and differentiated from already existing ideas of grapes and of other fruits. This process gives organization to newly created knowledge.

The process of subjectifying has as its second stage *representation.* This is more nearly a recognition of the self

in the object because, the object being absent, the mind tends to consider itself as the producer of the image of the object. The object is still regarded as distinct from the self. There is no consciousness that the process of the self is the essence of the real object. There is, however, a knowledge of a certain degree of identity. The image, which constitutes one element of the self, is known to be a psychical recreation of the object. Thus a kind of superficial identity is felt.

The mechanical stage of representation is *memory*. It is spontaneous, voluntary or systematic.

Spontaneous memory exhibits the potential stage of consciousness. The elements in the process are fused or indistinct, and there is no contradiction in the self.

Voluntary memory manifests the second or separative stage of consciousness. It involves a contradiction in the self in that there is an effort to direct and stimulate the spontaneous activities. The mind discovers that, at the time, it is unable to act in the direction desired. There is thus, division in the self. It is based upon the act of forgetting, the negative aspect of memory.

Systematic memory is a remembering which involves both the voluntary and the spontaneous process. This form of remembering includes all that is signified by the term mnemonics from its superficial to its rational aspects. The self always has a mnemonic system of its own and the value of this system depends on the degree of culture. Systematic memory is a remembering planned before hand in order to enable the self to react voluntarily the beginning element in the process. This then stimulates the spontaneous process.

A higher form of representation is *imagination*. The freedom of the self begins to appear distinctly in imagination. Not only does the mind recognize itself as the pro-

ducer of the image, but it also discovers that to a degree it recreates in a new form the object itself.

In imagination the mind interprets the image which it has produced in itself, to signify a particular object, not present at the time and never present. The process of imagination has several forms, as the mechanical, the separative and the creative or poetic.

The mechanical imagination may relate to present objects or to absent objects. For example, while engaged in considering an object which has just been sense-perceived, the self may modify one or more of the elements in the sense-perception image, as, the element denoting the roughness. This changes the image to an imagination image, and the image is interpreted to denote a smooth object of the kind under consideration. The object will be known as not present at the time and as not at any time present.

A similar change may be brought about by the self when it is engaged in remembering an object. The object of memory may be a field of green wheat. While existing in the act of remembering, the mind may reconstruct the memory image so that it is the image of a field of ripened wheat. This image is interpreted to signify an object not at any time present.

The separative imagination is so termed for the reason that the self creates the image of a given object, as of a word or of some externality in a product of art, and then interprets the image to denote, not the object which has been imaged, but instead, a separate object. For example, a person may create the image of the expression, "It was the great hall of William Rufus," and interpret the image to signify not this expression, but rather quite a separate object, namely, a large hall in London, as not at any time present to the person who is imagining it. This form of

imagination is very prominent in history, geography, discourse, etc.

The second form of separative imagination is concerned directly with the externalities of ordinary pictures, and of works of art, as, products in architecture, sculpture, painting, etc. For example, let it be assumed that a person has constructed the image of the marble which has been chiseled into the shape of a hand in the statue of Minerva. The mind, instead of interpreting this image to denote the actual marble so shaped, interprets it to signify the actual hand, as an object not now present, and never present.

The imagination is also creative or poetic. This may be illustrated by reference to language.

In the very early stages the child uses the same word for two different objects, not knowing that the objects are different. Since the impression is the same as that previously experienced, he assumes the object to be the same. Thus if the child calls the moon a lamp, his language is not figurative. He assumes it to be a lamp, since the impression is similar to that experienced when looking at a lamp. In the same way a little child calls any man father.

A second stage in language is that in which the metaphor is created. There is, first, the existence of a dim conception, as of something that is protective. This is then differentiated into two clear conceptions, as for example, into the idea of the advantage and protection belonging to one if the spirit is characterized by a godly disposition and on the other hand into the idea of a shield as protecting the body. The third notion is that of the identity of the two conceptions. This is expressed in the form of the metaphor, as "God is a shield."

The next stage in the development of language is that which gives rise to the simile. Here the discrimination is greater than in the metaphor. The two objects are seen

clearly to be different and yet an identity is discovered. The expression is, "God is like a shield."

The fourth stage in the development of language is one that gives rise to prose. In this case there is no consideration of two objects, but merely of an object and its attribute, as "God protects."

In general the creative imagination is that form of mental activity in which a spiritual condition is exhibited in terms of the physical.

Under representation there is a third stage involving both memory and imagination, and even higher forms of knowing. It is a mode of consciousness in which the transition to thought is made. It involves the consideration of language or signs in general. The term often used for this mental process is *interpretation.* Interpretation, however, indicates one-half only of the language process, i. e., that process in which—

Language already existing is observed,

The content or meaning is remembered, imagined or conceived and

The language is judged to signify the content.

The other process in language is creative. It is as follows:

The mind constructs an idea.

It imagines or remembers language adapted to this idea.

It judges this language to signify the idea.

A good term for the complete process is *the language act.*

The third and most important stage in the process of subjectifying is *thought.* Thought is that mode of activity in which the self discovers its own process to be the essence of the object. In the process of thought the mind becomes aware of its essential identity with the object. Although it is not obvious, nevertheless any process of answering the question, "Why?" is a process of discerning the intelligence

manifested in the object. If one by study answers the question, "Why has the orange a rind?" he puts forth the process of finding the process of self in the orange. That is, he becomes conscious of intelligence in the structure of the orange. In thinking, the mind has its own process as its object, although its object seems to be something else.

To become conscious of the reason for the stopper in an ink bottle is to comprehend the intelligence in the stopper, the significance of it. The stopper is an object of meaning. This is to say that it is the objectification of a volitional process. Before the existence of the stopper a conscious process substantially as follows occurred:

1. A person became aware that the ink in the receptacle with no covering evaporated too rapidly, received too much dust and was likely to be lost through the overturning of the receptacle.
2. He idealized or imagined a condition in which these things could not occur.
3. He experienced some degree of mingled pain and pleasure on account of the consciousness of the contrasted conditions.
4. He desired the idealized condition.
5. He chose to produce it.
6. He thought out the process of producing it; that is, he constructed the notion of the stopper and of the process of creating it.
7. His purpose and intelligence having given freedom to the appropriate impulses he put forth the series of actions necessary to produce the stopper.
8. He judged and accepted the result.

In this sense the stopper is an objectification of the process of the self. When the stopper is sense-perceived, remembered or imagined, this process is not known. To

think the stopper, however, is to obtain a notion of the process of mind which is its essence. Thought discovers the intelligence under the object. In the process of thought the self faces its own process and identifies the process with itself.

There are degrees in the clearness with which this is done.

The first and lowest stage of thought is called *understanding.* This is the dim knowing of the process of the self as the essence of the object. It is an indistinct consciousness of intelligence or meaning as the reality of the object. The peculiarity is that it fails to realize that the object has within it a process or energy which creates and organizes it. To the understanding, the object is organized from without; the distinctions of the object are externally imposed. They do not, to the understanding, arise from a generic force within the object.

Still the process of understanding is a process of *thinking,* because there is some consciousness of meaning, or of the ego as the essence of the thing understood.

Understanding is marked by three stages.

The first stage is *apprehension.* In this stage the meaning is grasped in a fused or indistinct way.

Apprehension is rather a feeling of meaning. This is indicated by the popular use of the word.

The second stage is that of *distinction.* This stage is separation. In it the mind analyzes or isolates in order to remove the indistinctness of apprehension. The processes in distinguishing are *abstracting, discriminating and comparing.* Comparing is a separating or distinguishing which has an element of unity in it. It is therefore the basis and the transition to *classification.*

Classification is the third stage of the process of understanding. It also has subordinate stages within it.

The first is *identifying.* In this act the mind unifies the

object with a class on the basis of some external attribute. This act is sometimes termed generalizing because it indicates a somewhat superficial consideration. The word generalizing is, however, usually restricted to the act of discovering a general truth in the inductive process.

The second is *separating* the object into *cause* and *effect*. This unifies it with two classes—causes and effects.

The third is *unifying* the object with its own inner law or organizing energy. This process is the discovery of the structural principle of the object, but the mind as *understanding* becomes aware of it merely as a passive attribute, and not as a genetic, inner force giving rise to all the distinctions in the object.

The second stage of thought is sometimes termed *ratiocination*. It is the distinguishing process of the mind as a thinking activity. It is the separative stage growing out of the stage of fusion or potentiality represented by *understanding*. This stage of thought differs from the previous stage in that the energy producing the object and its details is regarded as within the object.

When the mental process manifests development, a new term is required to denote the differentiation. The word, "understanding," signifies a mental process which terminates in a knowledge of the central meaning of the object, regarded as merely there, but not as giving rise to the object and its differentiations. As the self develops, this central characteristic, which the mind has discovered in its act of understanding, appears to the self as a generic energy. This is really consciousness of the general or universal as manifested in the particular which it has produced. The object known constitutes, therefore, the true individual. If this awareness of the unity of the generic activity with the particular which it produces is somewhat potential, with the emphasis upon the general, and with the

distinction between the general and the particular rather implicit, the act is *conceptive;* if the distinction is explicit and the awareness of the two clearly distinct aspects is definite, the act is one of *judgment;* if in discovering the unity of the two aspects the awareness is deeper than a consciousness of the unity, in that it includes also, and mainly, a knowledge of the ground or reason of the unity, the activity is that of *reasoning.* In case the ground, or mediating principle, is the uniformity of the process of the generic force, which has been discovered in the particular object, or in a number of such objects, the reasoning is *inductive.* If the mediating principle is the identity of the characteristics of the class with each particular of the class, the reasoning is termed *deductive.*

To designate the common characteristic of these four stages of becoming conscious of the generic in its relation to the particular, the term, "ratiocination," is employed. By some psychologists, the words, "elaboration" and "reflection" are used in a somewhat similar sense. The word, "ratiocination" emphasizes the idea of a generic energy which is productive of the object and also of the differences in it and in the class. The category of the mental process denoted by this term is *difference* while that belonging to the act of understanding is *identity.* It is true that in understanding an object its distinctions are discovered, but they are regarded as imposed mechanically, or from without, while the differences recognized in ratiocination are known as arising from the creative energy which gives origin to the object itself. In ratiocination the idea of an object is regarded as that which gives it being and which accounts for all of its parts, attributes and relations. The term has its root in the Latin word, "ratio," which signifies reason. John Stuart Mill limits the term to the process of necessary inferences because he is unwilling to admit

that ratiocination is, properly speaking, reasoning. If the process of ratiocination is to be thought of as including reasoning, it is, on the other hand, to be distinguished from the higher stage of thought known as *reason, intuition* or *insight*. Sir William Hamilton's notion of the process of ratiocination is referred to in "Fleming's Vocabulary of Philosophy," page 334. The word is not extensively employed in psychological writings. Notwithstanding this fact, it is here used because it seems best suited to express in one comprehensive unity the processes of conception, judgment, inductive and deductive reasoning, as activities of recognizing the identity of a particular with a universal which is the generic aspect of the particular. In "Angell's *Psychology,*" page 216, one form of the word is employed as shown by the following: "Beyond this we can say very little, save that there seems some reason to believe that all the more reflective and *ratiocinative* forms of thought process involve in an important way the action of the Flechsig association centers." The term is rarely used in common speech and in current general writings. In this respect, it differs distinctly from the great mass of terms employed in the science of psychology. Such terms as desire, memory, conception, distinction, etc., belong to the everyday speech of the people, in all ranks of life. In consequence of the lack of exactness which belongs to the science of psychology as compared with the exactness of other sciences, the terms in psychology are mainly those of common usage, and it is only occasionally, in order to express definite distinctions as they arise, that strange terms which are held to be especially suitable, are employed. There is not that elaborate development of technical scientific terms which is found in the definitely organized sciences. This may be clearly realized by examining any set of terms used in a

closely organized science to express the closely discriminated distictions that belong to its subject-matter.*

The first stage of ratiocination is *conceiving.*

In its beginning in any given case, conceiving is a continuation of the highest stage of classifying. The organizing attribute of the object, which in classification is regarded as merely common to all aspects of the object, is, in conception, discovered to be genetic.

In the second stage of conceiving the mind attends to the particulars or distinctions produced by the creative activity.

The third stage of conceiving is one in which the self becomes aware indistinctly that each particular is genetic. The energy of the object is now observed to be creative of all the distinctions in the object. The universal and the particular are, in this stage of conception, identified.

The second stage of ratiocination, namely *judging,* is the mind's process of apprehending indistinctly the particular, i. e., the *object;* of isolating and knowing clearly the universal, i. e., *the isolated attribute,* of ceasing to regard the attribute as isolated and noting distinctly its *unity* with the other aspects of the object.

Reasoning, the third stage, renders explicit the development of the identity expressed by the copula.

One reason that students have difficulty in comprehending the process of judging and of reasoning is that their first approach to each of these processes is usually logical

* FUNGI.
Series I.
Class 1. Phycomycetes—The alga-like fungi.
Sub-class I. Oomycetes.
Order 1. Chytridineae. On algae, etc.
Order 2. Saprolegniineae. Water moulds. Those growing on seedlings. Those growing on insects.
Order 3. Peronosporineae. White rusts.
Sub-class II. Zygomycetes.
Order 1. Mucorineae. The red mould, etc.
Order 2. Entomophthorineae. Insect parasitic fungi, etc.

rather than psychological. In regard to the judgment it is often said that consciousness being possessed of two ideas, one universal and the other particular, identifies them or discriminates them, thus producing the judgment or proposition. This is a mechanical explanation and removes judgment from the realm of actual psychological processes of discovering truth in actual objects. Judging begins in the construction of the idea of a single object whether general or particular. In the examination of this object the self abstracts or isolates an attribute (or the absence of the attribute) and then identifies it with the object. In the first case the sentence would express identity. In the second the direct expression is that of non-identity, although in reality the judgment is always the discovery of identity. The judgment thus expressed is called a proposition.

Reasoning has often received the same mechanical explanation as that referred to concerning the judgment. Reasoning is said to be a connection of propositions. One who reasons is supposed to have in consciousness two propositions, and to deduce from these a third proposition. This explanation is based upon the notions of formal logic and not upon the nature of the psychological process of reasoning. The logical process is a generalization based upon the psychological process. In the psychological process of reasoning the mind is concerned with a single object and is making a real examination of it in order to discover some fact concerning it—a fact not immediately accessible. The first process is that of judging. That is, the mind constructs the idea of the object as a whole; then, as a result of continued contemplation of the object, it abstracts or isolates an attribute, and then identifies this attribute with the object and its class, or with the object through its class. The self does not, however, have in consciousness a judgment concerning the object and a judgment relating to the class

and then deduce a third judgment termed the conclusion. The truth it discovers as to the class belongs to the process of reacting similar past experience common to all processes of knowing. There is no attention to a class until the necessity for its consideration arises in the direct examination of the object. It is a great aid in obtaining a knowledge of reasoning to note that the mind always spontaneously regards each object old or new as one of a class. The reason for this is that each object of its entire past experience has been found to belong to a class. In reasoning there occurs a judgment, and then the process of discovering the ground for the identity. There are three stages in this process.

The first is termed *identification*. In identification the minds apprehends indistinctly the relation to the class which is the ground for asserting identity. This indistinctness is the basis of the inaccuracy so frequent in this stage. Reasoning always involves the particular, the general or class and the universal. The mind in identifying unifies the particular with the class because it has discovered in the particular an attribute (the universal) which it is aware belongs to the class. This attribute may, however, belong to another class, and may thus give rise to an incorrect conclusion, somewhat as follows: In examining a word, as *red*, the characteristic *expressing an attribute* may be isolated and then identified with the word. This completes the judgment. Based upon past experience, the characteristic—*expressing an attribute*—may be identified with the class, attributive verbs. The word, *red*, may then be identified with the class attributive verbs. The defect in the process is lack of distinction or differentiation in knowing fully the isolated attribute. The characteristic which has been abstracted has three elements, but one only is noticed in the given case. The act involves, expressing an attribute, of an object, without asserting it.

The psychological process is—

Becoming conscious of the word, *red,* as a whole.

Isolating the characteristic *expressing an attribute of an object without asserting it;* but observing only the element, *expressing an attribute.*

Unifying the isolated attribute with the object (the word *red*).

Identifying the isolated attribute with the class, attributive verbs.

Identifying the word, *red,* and the class *attributive verbs* on the ground of their unity in *expressing an attribute.*

The syllogism in the logical process is—

The word, *red,* expresses an attribute.

Attributive verbs express attributes.

The word, *red,* is an attributive verb.

It is to be noticed that the middle term is the universal, and that it is expressed in the predicate of the major and of the minor premise.

This stage of reasoning is that of fused unity. It resembles the potential stage in the mind's activity.

The second stage in reasoning is known as *induction.* It is the separative aspect of reasoning. It is the stage of distinction, although the final result is synthesis. The characteristic element in induction is the isolating or discovering of the *distinguishing* attribute of the class. Therefore, the result is both synthetic and analytic. The objects of the class are unified on the basis of the central attribute and the class is separated from the other classes on the same basis.

In induction there is always a particular object to be investigated. Let it be assumed that the object is the word, *red,* as found in the sentence, "The leaf is red," and that it is the first lesson in thinking the nature of the adjective.

It is also to be assumed that the pupil does not know the name of the class or that there is a class. While it is not a new word, it is practically new so far as its definite meaning is concerned. Many objects exist thus to the pupil, and even to the mature scholar.

The psychological process in induction with the word *red* as its object is: The pupil's mind attends to the word as a whole; abstracts the characteristic *expressing an attribute of an object without asserting it;* judges or rather assumes the object to belong to a class; gives consideration to (abstracts) the creative activity which produced the words of the class; judges it to be uniform in its process; infers that all the words of the class possess this characteristic—*expressing an attribute of an object without asserting it.* This is essentially the mind's process in inductive reasoning, and as a mere process is as clearly revealed with one object as it would be with many. In order, however, to insure validity to the result, there must be an investigation of many objects.

The syllogism of the logical process is—

The creative activity of a class is uniform in its process.

The creative activity produced this object (the word *red,*) with the characteristic—*expressing an attribute of an object without asserting it.*

All objects of the class possess that characteristic.

This equips the mind of the pupil with a general principle, called in logic the major premise.

It is to be noted that the attribute abstracted is actually found to be present. It is also to be observed that the subjects in the first and second propositions are the same, while in the identification the predicates were the same. Induction begins by discovering an attribute in a sin-

gle object and ends by asserting that attribute of the whole class.

The third stage in reasoning is *deduction.* It resembles the third stage in the process of consciousness. It is synthetic in that it unifies an attribute with a single object, but the result is to distinguish the object. That is, it terminates in analysis or separation.

The psychological process in deduction is as follows:

The learner attends to some object as a whole, as, to the word, *red,* in the sentence, "The red sandstone is expensive."

He inquires whether the word, *red,* limits the application of the word, *sandstone,* or whether it merely emphasizes an attribute belonging to the object named by that word. This is the act of abstracting the attribute *limiting* and inquiring whether the word,*red,* possesses it in this special case. The second step in deduction is always, substantially, of this form.

He then classes the word, *red,* on the basis of an attribute which is different from the one inquired for. This second attribute is one that is observed to be present. In this case the characteristic on the basis of which the word is classed is *expressing a quality* (color) *which is variously manifested by the object denoted by the substantive.*

He then analyzes the class. In this analysis the class is found to consist of words which express an attribute of an object; the attribute is found to be one which appears in various forms in the object; the word is seen to express one form of the attribute only and therefore to limit.

He knows that the words of the class limit, because his analysis has shown *limiting* to be one of the characteristics of the class.

He infers that the word, *red,* limits the application of the word, *sandstone,* because it was found to belong to

the class *expressing a quality* (color) which is variously manifested.

The syllogism of the logical process is—

All adjectives expressing attributes belonging to only a part of a class are limiting.

The word *red* is an adjective, expressing an attribute belonging to only a part of the objects expressed by the word, *sandstone.*

The word, *red*, possesses the attribute of limiting the application of the word, *sandstone*, in the sentence, "The red sandstone is expensive."

It is to be noted that the attribute isolated is not directly known to be present as is always the case in induction. In deduction the attribute isolated, i. e., thought of, is not directly accessible. The mind gives attention to the attribute and inquires whether it is possessed by the object. Sometimes the person in the process of deduction centers attention upon the fact that the object has a cause, a use, an effect, a relation of likeness or difference, and inquires, not whether it *has* the function, etc., but *what* the function or relation is.

It is to be further noticed that the subject of the major premise is the predicate of the minor premise. While the truth discovered in induction is based on uniformity in the creative process and is given a general application, the truth discovered in deduction is based on the uniformity of the essential class attributes produced by the creative activity, and is given a particular application. This indicates that there is no "inductive method." Induction is only one stage of a process. Deduction is the other. Induction, beginning with a single object, discovers a general truth. Deduction, beginning with the general truth, discovers that the general truth belongs to a certain particular object. The growth of knowledge is not "from the particular to the gen-

eral'' but from the particular, through the general to a particular, which is enriched to the mind by the discovery that it (the particular) possesses the general.

Analysis of the Process in Knowing.

The special stages in the process of subjectifying or knowing are here to be reconsidered briefly, in order to illustrate them somewhat more fully, as a basis for the interpretation of lessons taught in the various grades:

I. *Presentation.*

The characteristic of presentation is that the self, in an act of sense-perception, regards the object denoted by the image to be particular, present in space now, and to be entirely different from the knower. This is expressed in Dewey's *Psychology,* page 159.

1. *Sense-perception.* In an act of sense-perception there are, on the one hand, a present object or stimulus, as a postage stamp, and on the other hand, the mind's act of sense-perceiving which involves the creation of the image, the reacting of similar past experience, the relating of the present image and the past experience, and the judgment that the present image signifies a postage stamp present now.

This entire mental process is practically sub-conscious. The only thing the mind seems to be conscious of is the object itself. The mind ignores the fact that it has created the image of the object and has obtained the meaning of the image by adjusting its past experience to the image. It is engrossed with the meaning, i. e., with the object. It does not discover its own nature or process in the object, although it is just its own process which constitutes the essence of the object. The postage stamp is the objectification of the process of the self. It came into being through the

fact that the self became aware of some defect, idealized a new condition, desired the new condition, chose it, thought out the means, etc. All this process underlies the production of any human product, and a similar process in the mind of the Infinite is at the basis of the productions of the objects of nature. The self is, in this sense, the essence of each object. The characteristic of sense-perception is that this unity of the object with mind itself and hence with the mind of the one who is perceiving it is not known. The object is regarded as a particular existence present in space, and the fact that it has an essential unity with the mind of the one who is knowing it is not even considered.

Sensing. The first stage in sense-perception—sensing—is a general process in that the person is sensing at any given instant all elements of his environment. He senses or is dimly conscious, for example, of the blackboards, of the wall paper above, of the light entering from the east, of the open door at the west, of the chandeliers, of the benches, of the students in the class, of the desk, of the dictionary upon it, of the postage stamp lying upon the dictionary, of the breeze, of his own position, of the sounds of the hammer, of the murmur of distant voices, etc. The mind in a sub-conscious way constructs a sensation for each of these objects, practically simultaneously, and by adjusting its past experience to each sensation, indistinctly interprets it. This is the initial stage for many acts of perception, but it is too fused and general to be termed perception. Sensing is a condition in which many acts of perception are merely potential. The attitude of the person to his environment is that of indistinctness or undifferentiation. There may be, also, a special sensing, as of a single quality. It would be helpful to the student to trace the full circuit of this.

Perceiving. The transition may be made, however, from sensing to perception at any instant. For example, the sensation which the mind has created in response to the postage stamp as a stimulus, may develop into the perception of the stamp. The perception would begin in the concentration of the attention upon that object. This is a separative process. It isolates the object from the world of objects and it separates the perceiving mind from the undifferentiated condition of sensation, and from its condition in any other special act. The initial result is an indistinct image of the object as a whole.

This is the mere beginning of perception, however. The process continues by further isolations. For example, the face of Washington with its surrounding frame is distinctly isolated and imaged. This occurs also with regard to the four stars in their exact location, with regard to the figure "2" and its surrounding wreath, with regard to the round corners below and the pointed corners above, etc. The creation of a distinct image in each of these cases stimulates the reproduction of appropriate past experience, the adjustment of this past experience, and the judgment as to meaning. The act of perception is, therefore, a series of acts of knowing. One by one the parts and attributes are distinctly attended to and thus clearly imaged. As each part or attribute is imaged, the image is interpreted, and its meaning unified with the meaning as a whole. All of the images successively constructed fuse into a distinct image of the one complex object. The image is always interpreted to signify a particular object, present now, and different from the self.

Apperceiving The definite particular created in perception, is not left isolated. It is, through the mind's tendency toward unification, classed with its kindred ideas, just as a geologist, upon obtaining a new specimen, places

it with its own kind. In the example given, the mind would apperceive by ordering the idea of the two-cent stamp with such ideas as those of postoffice, mail car, letter carrier, special delivery stamp, etc. Apperceiving is ordering or modifying a given set of tendencies or ideas by unifying with them a kindred idea. This idea modifies the established ideas and they in turn modify it. The conclusion of sense-perception, then, is the classing or ordering of the newly constructed idea. This is done to a certain extent sub-consciously, but in the process of education the learner should be made distinctly conscious of the relation. It would be of great advantage to work out, at this stage, the neural basis of sense-perception, as an aid in understanding both the process and the pedagogical principles derived from it.

Among the pedagogical principles implicit in the process of sense-perception, the following may be mentioned:

An object to be sense-perceived must first be presented as a whole to the learner's mind without calling attention to its various parts and attributes.

The ideas, feelings, etc., that are already in consciousness when one is beginning to perceive should be harmonious with the object to be perceived, because the learner is prone to perceive the object corresponding to his existing mental state, whether it is present or not.

The sense-perception should, in the second place, become analytic, because while the object is at first perceived as "single and distinct," it is merely distinct from other objects. This analysis should be accurate, because the ideas are to be the basis of future acts.

The process should, in the third place, be made apperceptive, that is, the idea should be identified with the other ideas of this class. For example, as suggested above, the idea of postage stamp should be identified or classed with

ideas of the postal service, as, with the idea of letter box, etc.

II. *Representation.*

The term representation denotes the mind's act of reproducing some former particular experience consciously. It does not, as here employed, indicate that subconscious employment of former experiences which is a characteristic of all forms of knowing. An act of representation involves the recreation of a former mental image by the self and the interpretation of this image to signify a particular object, not now present, other than, or alien to the self. All this mentioned is consciously known. The case may be one in which the self is aware that the object being represented has been present before, or it may be a case in which the mind knows, that, in its present condition, the object has never been present. The act of representation involves the unconscious reproduction of past experience in order to interpret its present image, as does sense-perception, but, in the main, the mind is conscious that its state is a represented state.

It seems evident, therefore, that the characteristic of representation is as follows: It is an act in which the mind recreates in itself a particular image, and by relating this to already acquired experience, interprets it to signify a particular object, other than the self, once present but not now present; or not present now, and not at any time present in its imagined form. The object, as in sense-perception, is regarded as different from the self, or rather it is tacitly assumed to be different from the mind knowing it. The separation of the object from the self is less complete, however, than it was in sense perception. In representation the self is distinctly aware of the image, and that it is the image of an absent object. This gives rise to a certain

feeling of identity. An image which constitutes an element of the self, and is also the actual image of the object must, therefore, be kindred to the object. Thus, the mind is aware of a superficial identity between it and the object. It does not, yet, however, discover that its own process is the essential nature of the object.

It will appear from the foregoing that the mind in representation manifests itself in three forms—memory, the more simple and the more strictly reproductive; imagination, the more complex and the more creative; and the language act, which involves the previous processes and is also a transition to thought.

1. *Memory.*

The act of memory exhibits three stages—spontaneous, voluntary and systematic.

Spontaneous memory.

The characteristic of spontaneous memory is the lack of intention, and of consciousness in the process. All of the four movements are put forth by the mind automatically, and throughout the first three movements, i. e., throughout the re-creation of the image, the re-acting of similar past experience, and the process of comparing and contrasting the present image with the ideas of the past, there is, practically the absence of consciousness.

In the fourth movement, however, namely, in the inference, consciousness is present.

The process in an act of memory includes, as just indicated, the re-creation of the image, which becomes thus, the memory image; the reproduction of similar past experiences, the relating of the memory-image to this past experience, and the inference that the memory image denotes a particular object, as the leather back of a book, observed at a given time and place with certain environments. The object is assumed to be different from the observer, but not

so completely, as is the case in sense-perception. A superficial identity of the knower and the object being remembered is indistinctly felt, since the image—an element of the self—is the image of the object.

The first step in the process is that of creating the memory image. This begins in the production of what may be called the *initial* element of the memory image. This initial element must be an element of a present mental act, and it must have been an element in the former experience. Therefore when this element is produced by the self, the mind has really entered upon the former act. In the former act of sense-perception, for example, there may have been in the image an element appropriate to the curve of the leather on the back of the book. In the present act of sense-perceiving a dry, crooked, tapering branch of a tree in a forest, there is in the image constructed by the mind a similar element denoting the curved surface of the branch.

This element is the initial element of the memory image. Its presence is due to the stimulus in the object and to the self-activity of the mind. Having produced this element in itself, the mind is, to a degree, existing in the former act.

What are the other elements of the former image, and what occasions their reproduction? The other elements may be assumed to be the element denoting the material, leather, the element denoting the length of the leather, that denoting the width of the leather, that denoting the place of the object, that denoting the time of the observation, that denoting other persons present, etc. What stimulates the mind to react these elements, which, with the initial element, constitute the complete memory-image? The stimulus is not an extra-organic stimulus, but rather an internal one, viz., the tendency of the mind to complete any activity it has reentered. But the question may arise, "Why did the mind re-enter just this former act, when, no doubt, the ini-

tial element was the beginning of many former acts?'' This is answered by reference to subordinate laws of association as determined by recentness, repetition, novelty, and relative interest.

When the mind has thus fully reconstructed the memory image it has not, as is often supposed, completed the act of memory. To complete the act of remembering requires three additional movements or mental conditions. The first of these is the process of reproducing former experiences, as, for example, experiences at various times and places in the past in which the mind has become aware of leather as belonging to the binding of books.

The second is an activity of relating. The mind carefully compares and contrasts the present memory-image with the reproduced experiences, one by one, and finally identifies it with a certain one of them. This identifying is of the nature of an inference. On the basis of the process of relating and the feeling of similarity, the mind interprets the memory-image to signify a particular piece of leather observed at a certain time, under definite circumstances, but not present now. The object remembered is always assumed, tacitly, to be other than the self. That is, the self does not, as yet, discover the object to be merely an objectification of its own process, although it is aware of a superficial identity between itself and the object because its image is the image of the object.

This form of memory—spontaneous—corresponds with the first stage of the law of consciousness, since it is so fully marked by unconsciousness, by lack of differentiation.

Voluntary memory.

This second form of memory is separative, manifesting thus the second stage in the law of the mind. It is based upon the negative aspect of memory—forgetting—and is intended to negative the negation.

Voluntary memory arises because some act of spontaneous memory is incomplete. The first movement is to become aware of the lacking element. For example, the element in the memory-image signifying the color of the leather on the back of the book may not have been re-acted.

The second stage is to construct in consciousness the purpose to react the lacking element, or, using objective terms, to become aware clearly of the color of the leather. It is the existence of this purpose which constitutes the voluntary aspect of the act of remembering. This form of memory is often termed *recollection.*

The third stage in voluntary memory is the act of judging or deciding upon the set of objects which are adapted to stimulate mental images which may initiate the spontaneous re-acting of the sought-for mental state. For example, the mind may judge that its attention should be concentrated on leather as to its natural color, on leather as possessing other colors as revealed by past experience, especially on leather as used in the manufacture of book covers.

This third stage merges immediately into a fourth aspect which is the mental reconstruction of these various objects with their various colors. Among these ideas which have been re-acted is the one signifying the color which had not been remembered, or one so similar to the idea of the sought-for color that under the stimulus of it the mind spontaneously reproduces the particular mental element denoting the color, of which color the mind was, without effort, unable to become conscious. The act of voluntary memory is, however, incomplete until this mental state is *recognized* as the desired one, or in objective terms, until the color, now reproduced in consciousness is recognized as the one which was upon the leather. This mental act of recognition is due, probably, to the feeling of

familiarity as arising from the similarity of both the idea and its neural basis to these two forms of re-action in the former experience. The process of recollecting a name would involve a process consisting of the same stages.

Systematic memory.

The third form of memory may be termed *systematic.* It involves a distinct preparation at the time of learning the object. The person who is becoming acquainted with an object or event has, it is to be assumed, special reasons for desiring to be able to reproduce, with facility, the idea of the object or event at any future time when it is needed. He, therefore, plans to learn it in the way that will give him most power in reproducing the idea of it. The most economical mode of doing this is to relate the object being learned to objects whose corresponding mental states are habits in the life of the learner. For example, if the learner is a minister, the objects for which he has habitual corresponding psychical activities are his parsonage, his church building, the hymnal of his church, the Lord's Prayer, Paul's journey to Damascus, etc. In case he should relate the new object to one or more of these familiar objects, it would, in future be necessary only to react voluntarily the idea appropriate to the familiar object to stimulate the spontaneous reproduction of the idea of the new object.

The central fact in the preparation is that the object being learned is to be related with objects whose mental representatives have become habitual in the life of the learner. It is evident, therefore, that the act of relating in the case of any person would reveal features peculiar to him, and also features common to him and others.

The individual should relate the new object to familiar objects under one or more of the relations given in

the following descending grade: To familiar objects as to their purpose; cause and effect; likeness and difference; time and place; or perhaps to a familiar artificial system. This last is referred to as a *mnemonic system* by Angell on page 201 of his work in psychology, and by James under *ingenious methods,* on page 298 of his "Briefer Course." The latter gives as a common figure alphabet the following:

1	2	3	4	5	6	7	8	9	0
t	n	m	r	l	sh	g	f	b	s
d					j	k	v	p	c
					ch	c			z
					g	qu			

In this alphabet the vowels are not to be considered. Therefore, if one wished to remember 1718 as a date in history or as a street number he could relate it to some such expression as "To go to fee." It may help the student to understand the relations referred to above, to decide upon the relations one should seek to establish in order to gain permanent knowledge of "1718 Talbot Avenue," as a street address, or of the thoughts of the "Compact on the Mayflower," in their order.

All this is merely the preparation for an act of systematic memory. The process in the act of remembering is now to be noticed. The first stage is that of reacting voluntarily the mental elements or states denoting the system of objects which have been related to the object to be remembered, as, for example, reacting voluntarily the idea of the expression "To go to fee."

The second stage is the spontaneous reacting of the idea of the object to be remembered, as the idea of the number, 1718. The example given belongs under the artificial system of relations, but the stages are the same when the established relations are inherent in the object to be remembered.

The value of relating the new object to objects habitually considered by the self is evident.

In what respects is memory more fundamental than sense-perception? Range of consciousness of relations is the factor which determines whether one mode of mental action is more fundamental than another. Mind is held to be "the universal substrate," and whatever form of mental activity exhibits most of the self-activity of the mind is most fundamental.

With this as a criterion, memory appears to be more fundamental than perception in these respects: It involves a more extended range of consciousness. In sense-perception the mind has constructed an image, but the self is unconscious of the image, the attention being centered upon the external object only. In memory, however, the mind is distinctly conscious of the image and of its process in knowing the absent object.

Memory is more fundamental than sense perception, also, in the fact that it involves a more complete idea of the self. Sense-perception is limited to the immediate present. It involves but a brief portion of the observer's life. In memory the individual is conscious not only of his present, but of a definite past, and in a certain sense of his life during the intervening period.

Memory is also more fundamental than sense-perception in that in an act of memory the mind ignores, to a certain extent, the various details of the object of which it was distinctly conscious in the act of sense-perceiving. This act of ignoring the details in the object is a more advantageous basis for thought, since it concentrates attention upon the essential nature of the object more fully than is done in sense perception.

The student should here make a careful study of *the neural basis* of memory.

Among the pedagogical principles that are implicit in the act of memory the following may be noted:

The mastery of an object involves repetition, a repetition that should reveal elements of differentiation. That is, in re-studying an object, or the material of a lesson, the review should vary to a certain extent from the original work. It is evident, also, that the ability to remember an object is closely related to the interest of the person who is engaged in the act of knowing the object in the beginning. Interest is the basis of attention, and a discriminative attention insures greater efficiency in the memory.

The third principle may be stated as follows: The child should be led to make clearly conscious to himself the element that is lacking in any case of voluntary memory. In voluntary memory the object is already largely known. Some aspect of it, however, is lacking in consciousness. In enabling the child to re-know this aspect of the object he should be led to define to himself exactly the element which is lacking.

In the fourth place, the child who is preparing to remember an object should be given a clear knowledge of closely related objects. These relations should also be, in so far as possible, essential relations.

In the fifth place, the child should be led to identify the object he is studying with other objects according to a certain grade of relations. If necessary, the child should identify the object with other objects by means of certain aspects of an artificial system; by means of relations of time and space; through relations of likeness and difference; through relations of cause and effect; and through relations of purpose.

2. *Imagination.*

a. *Mechanical imagination.*

There are two kinds of mechanical imagination,

i. e., the modification of images signifying objects present, and the modification of images signifying objects absent.

In the first kind the mind creates the sense-perception image of a pencil, which is, for example, a paper pencil with certain letters on the outside, and a blue crayon point. The mind then changes the element signifying blue in the crayon point, and produces in its stead the element signifying red as the color of the crayon point. It continues to act along with this, all the other elements of the sense-perception image, and interprets the new image, which is now the imagination image, to signify the pencil with attributes indicated as not present now and never present.

In the second kind the mind constructs, for example, the memory-image of a particular gold-handled pen. In creating the memory-image the mind reconstructs all of the elements of this image just as they were. The mind then constructs instead of the element signifying gold-handled, the element signifying pearl-handled, retaining all the other elements of the memory-image and interpreting the modified image to signify a pearl-handled pen not present and never present.

b. *Reproductive imagination.*

There are two kinds of reproductive or separative imagination. The first is the interpretation of the image appropriate to words, to denote objects expressed by the words, rather than the words themselves. In this interpretation the objects are felt to be objects never experienced in that exact form.

The second is the interpretation of images appropriate to pictures or to the mere externalities of works of art, to signify the objects which these express. These objects are known as objects which have never been experienced.

In the first kind take, for example, these words, "Through the black smoke of the city rose the lofty tower

of the court house." As the mind sense-perceives the sound of these words it interprets the auditory image appropriate to the words, to signify the object—a tower looming up through the smoke, rather than the words, "Through the black smoke," etc. One element of the activity is the consciousness that this object has never been experienced.

In the second kind take the example of a photograph. As the mind perceives light and dark shades it interprets the image of these to signify the actual body of the person, the actual material of the dress, etc., as objects never experienced.

c. *Creative imagination.*

Creative imagination is either productive or interpretative. Its range is much greater than that which is included under the process of creating the metaphor, yet, since this process is typical, creative imagination will be explained from this point of view.

In that form of creative imagination which is termed productive, the mind creates the ideal, images an object appropriate to the ideal, and judges that this object symbolizes the ideal.

There are three forms of productive imagination, i. e., that which satisfies the aesthetic interest, that which satisfies the intellectual interest, and that which satisfies the volitional interest.

The creation of the object expressed by the metaphor, and, in fact, the production of the world of art in general, come under the first form.

In the creation of the idealized object symbolized by the metaphor, the mind in the first stage, attends to some general idea. In the second stage, the self differentiates its idea of the general into two aspects, one signifying a sensuous or physical object and the other, the spiritual object. Each of these involves the general of which the mind

is conscious in the first stage. In the third stage the mind identifies the spiritual object with the physical as its symbol. For example, in the first stage, the mind may be considering the general object, purity. In the second stage it differentiates its idea of this general into two aspects, one of which signifies the physical object, as a lily, snowy white, growing in a quiet valley; and the other signifies the spiritual object, a soul unstained by sin. In the third stage the mind identifies the physical object, the lily of the valley, with the spiritual object, the unstained soul, as its symbol. Strictly considered, this concludes the act of creative imagination, but the imaginative process naturally merges into the language act, and the mind expresses the idealized unity by some such expression as "The soul is the lily of the valley."

A modification of this process is that in which the first stage is a consciousness of a single object either physical or spiritual, but usually physical. In the second stage the mind retains in consciousness the idea of this particular object and constructs in contrast with it the image of an opposite, but kindred object. In the third stage the mind identifies the physical object with the spiritual, regarding the physical as symbol. For example, the mind may be conscious of a lute which the various breezes are playing. In the second stage the mind continues to be conscious of this object, and creates in contrast with it the image of a spiritual object, i. e., the soul, stirred, sometimes, by the passing whims of fashion into discord, and soothed, at times, by deeds of philanthropy. In the third stage, the mind identifies the physical object—the lute—with the spiritual object, the soul, regarding the physical as its symbol. By the language act the mind may express the idealized unity somewhat as follows: "The soul is the lute upon which every passing breeze may play."

In the second form of productive imagination—that which satisfies the intellectual interest—the process is similar to that which satisfies aesthetic interest. There is first the creation of some notion, as, for example, that of plant-life; second, the creation of the expression, as a discourse on plants; third, the identification in the mind of the author, of his discourse, and his thought relating to plant-life under the relation of symbol and thing signified. The process in the invention of the sewing-machine, and of the cotton-gin belongs under this form.

In the third form of productive imagination—that which satisfies an ethical interest—the process is similar to that under the intellectual and the aesthetic interest. The mind constructs the idea for some general truth or principle as, for example, that expressed by "all just government derives its authority from the consent of the governed." In the second movement, the mind creates some embodiment of this, as, the constitution of the United States, or the charter of a city. In the third stage it judges that this constitution or this charter manifests this principle.

Interpretative imagination, in a way, reverses the process in productive imagination. For example, let it be assumed that a statue is being studied. At first the mind will contemplate the particular object. It will then, by reflection, comprehend its inner meaning. It will conclude, by estimating the statue, i. e., by judging whether, as a symbol, it adequately expresses the meaning. (See Dewey's *Psychology,* pp. 195-200..)

It seems evident from the foregoing discussion that the process of imagination is more fundamental than the process of memory. Some of the main ways in which there seems to be greater development may be mentioned:

The imagination reveals more freedom from external restraint. In the act of remembering the pencil, the mind

created the image of the particular pencil, and this image corresponded exactly to the external object. In the act of imagination the mind created the image of an object—a pencil—which had never been experienced, thus manifesting the mind's initiative.

It has more of consciousness in it because in any given case the mind ceases to act an element or elements then being produced and constructs other elements signifying other characteristics of the object. There is also a fuller range of consciousness, since, in imagination, the person is slightly aware of the general. For example, in the case of the pencil, the mind ceased to act the element signifying blue in the crayon point, and constructed in its stead the element signifying red. Since the object with the new characteristic, red crayon, is still regarded as a pencil, it is evident that the mind is slightly conscious of the general idea which the word, "pencil," names.

It is more developed than memory because its activity is related more distinctly to the purposes of the self. Every time the self images an object, either in an improved form or merely in a new form, the first step toward purposing to have the object in that form has been taken. In harmony with this idea it has been said that "brain paths lead to action."

The imagination is more fundamental than memory in that it is more closely related to the feelings, particularly to the aesthetic feelings. Any creation arouses the feeling of satisfaction in the form of admiration or negative aesthetic feeling.

At this stage let the student make a careful investigation of *the neural basis* of imagination.

Some of the main pedagogical principles which originate in imagination are as follows:

The child should be trained to select words that

are graphic, picturesque. For instance, the child may be led to listen to the sound of the wind until he will be inclined to describe the wind as howling.

The child should be led to image according to true relations. For example, if he is writing a description of the object suggested by this sentence, "Aunt Polly sat in her little back parlor paring a panful of red apples before the fire," he may, by a few suggestions, be made conscious that Aunt Polly's parlor would not be furnished with a piano or with a Brussels carpet.

The child's imagination must be so trained that he will tend to seek the inner meanings of works of art. For instance, in the picture of *St. Michael and the Dragon* the child should first sense-perceive the picture as a whole. Then he should be led to distinguish the picture into its constituents or parts—an angel with large wings, bright face, and great arms, holding a mighty sword in one hand over a dark scowling figure with small wings, and with the other hand forcing this ugly figure down into a dark pit between two mountains. By explanation, questioning, and suggestion the child may be led to interpret the great arms and large wings to signify strength, and the bright, fair face, goodness; the small wings, weakness; the scowling face, evil. The child is then to be so directed that he will unify the various parts with their meanings in a way to catch, creatively, their general truth, "Good conquers evil."

3. *The Language Activity.*

This is a mode of mental activity concerned with symbols, i. e., letters, words, sentences, etc. In one aspect it is partially an objectifying activity. It is a complex activity involving sometimes sense-perceiving, remembering, judging, imagining. Sometimes it contains conceiving and reasoning. Its content or object of consideration is language. The act has been termed memorization. This term

is somewhat objectionable, however, because it suggests the activity of *memorizing* which is quite a different activity from that referred to as memorization or the language activity. The general nature of the language activity is explained in *Psychology,* by Dewey, pp. 211-212.

The language act is the process of the self in either producing or interpreting language.

a. *The act of producing language.*

In this act the mind first becomes conscious of an object. The term, *object,* is here used in the sense set forth on page 158. It denotes the object known in sense-perception, memory, imagination or introspection, and the relation or meaning of which one becomes conscious in an act of understanding, conception, judgment, reasoning, or intuition. For example, through the presence of an object, or of a picture of it, or through language, a person may become conscious of an animal, as, the squirrel; or through introspection the mind may become conscious of its distinct mental states and be impressed with each as a unit; or through abstraction the mind may become conscious of an attribute or characteristic of an object, as is illustrated in the botanical experiments of Mr. Luther Burbank. In examining closely a new fruit he noted particularly, i. e., abstracted, certain characteristics of both the potato and the tomato, as, the green top of the potato, the growth of the fruit on the top, like the tomato, the size and shape of a small tomato, white colored flesh, like the potato. This was an example of abstraction. The abstracted attribute was the object which was afterwards to be expressed in language.

The abstraction is the first stage in the productive language act. Adam, according to Scriptural account, emphasized a certain characteristic of his companion. This was the first stage in his process of naming his companion.

By reflection or abstraction he became conscious of the general characteristic—"Mother of all the living." This characteristic is the object which is to be expressed in language.

In the second stage of the act of producing language the person becomes conscious that there is no suitable term to preserve the idea of the object of which he became conscious in the first stage. He, therefore, purposes to produce such a symbol. In the first of the cases referred to above, having noticed particularly the tail of the animal, and especially its bushy character which enables it to cast a shadow, he imaged the term, *squirrel*. In the second case, having emphasized the distinctness of each mental state, and the unity of the mental states in this respect, he imaged the term *psychome*. In the third case, having been impressed with the characteristics of the new fruit which he had obtained by crossing the potato and the tomato he imaged the term, *pomato*. In the other case mentioned, the special attention to the characteristic expressed by "mother of all the living," stimulated the act of imaging the name, *Eve*.

The third stage in the act of producing language is, practically, contemporaneous with the second, and implied in it. It is the judgment or decision that the imaged term is appropriate to the meaning. This is its selection.

This act of judgment and selection may be very brief, or it may require considerable deliberation. The process which has been indicated for words, is also present in the construction of phrases, sentences, paragraphs, chapters, and entire volumes.

b. *The act of interpreting language.*

This process is essentially the reverse of the former process. The assumption is that the language has been

produced, and that the learner is examing it in order to become conscious of its structure and meaning.

The first stage is the process of becoming conscious of the term as a visible or audible object. For example, the pupil may become conscious of the word, "squirrel," or "psychome," or "Eve," or "psychiatrist," as a visible or audible expression. Since this term is always a particular, material object, the process of becoming aware of it is always sense-perception, memory or imagination.

The second stage in the interpretative language act is the process of remembering, or constructing for the first time the idea of the object or meaning expressed by the term. For example, the child may be led by questioning, explanation, and the use of reference books to interpret the word, "squirrel," to mean an animal with a bushy tail; the name, "Eve," to mean "mother of all the living;" the term, psychiatrist," to mean one who ministers to a mind diseased.

The third stage is the act of the mind in judging or asserting distinctly that term which was considered in the first stage is an appropriate symbol for the idea which has been either recreated or created. This act of judgment, while distinctly a separate movement in consciousness, does not succeed the second stage in time, but is rather co-existent with it.

The language act is a more fully developed form of consciousness than imagination. Some of the manifestations of this development are as follows: In the language act, the mind is more distinctly conscious of the relation. (Symbol and thing signified.)

It is more distinctly conscious of the general. (The idea expressed in the language.)

The object or symbol which is created in the second stage of the productive language act is more fully in

identity with the self than the object which is created in imagination. For example, a picture, a statue, a work of architecture has in it more or less of the material, while a word, as, "faith," is very largely a product of the self, manifesting, to a certain extent, its fundamental process. There is a more distinct consciousness of social relations, because the object created, i. e., the word, phrase, etc., is for the sake of communication. For example, the rattling of a window produces a sound, but the sound has no social significance. The sound, "Good-morning," does, however, have social relations because it is uttered by one person, to reveal that which is in his consciousness, and is heard by another, and its meaning becomes a part of the consciousness of the person hearing.

The student may here make an investigation of the *neural basis* of the language act.

Among the pedagogical principles implicit in the language act are these:

The child should be led to distinguish the three kinds of language, i. e., objective, subjective, and symbolic. (See page 135.)

He should be led to value, and to secure a rich fund of terms.

He should be taught to discriminate closely, and to be satisfied with exact expressions only.

He should be given a close acquaintance with the literal meanings of words.

It should be the aim to give him the habit of emphasizing content or meaning over expression or form.

III. *Thought.*

1. *The Understanding.*

The language act is the transition from imagination to thought, because in becoming aware of the meaning the

thought processes are involved. The content of language is usually the concept, the judgment, or the product of some process of reasoning. The general nature of thought was shown on pages 164-165. It was there noted that its main stages are understanding, ratiocination, and intuition or reason. The mental activity termed understanding is the lowest, most indistinct, and most mechanical form of thinking, although in its highest stages it becomes a very important process, involving considerable reflection. In its lowest stage it takes the form termed apprehension. This is the mode of activity referred to in Angell's *Psychology*, pages 203-206, as "consciousness of meaning." On these pages it is shown that perception, memory and imagination, while signifying primarily particular objects, denote, also, in an indistinct way, the meaning exhibited in these objects. The author says: "Perception could never lead to the establishment of habitual co-ordinations were we not able to apprehend the meaning of that which we see and hear and touch. Memory would be an abortive resuscitation of the past could we not recognize the meaning of that which we recall. Imagination in all its forms would be a mere mental logomachy were it not for our ability to understand the meaning of the images which occupy our minds. From beginning to end, therefore, of our mental activities the presence of meaning is absolutely indespensable."

The essential nature of understanding is indicated by stating that its predominant category or relation is *identity*. In its act of understanding the mind becomes aware of the different parts and attributes of the object, but these parts and attributes are regarded as brought about in the object by forces that are external to it. The mind, in the stage of development known as the understanding, does not become conscious of an essential inner force in

the object as giving rise to all of its parts and distinctions.

The predominant stages of the understanding have been given as *apprehension, distinction* and *classification.*

In apprehension the mind constructs the image or special mental state appropriate to the object, reacts similar past experiences and interprets the image to signify a given meaning. This meaning is reached without the conscious process of reasoning, and there is a tinge of doubt as to whether the true meaning had been discovered. This doubt is reflected in the term "apprehension." The mind therefore attempts to test the result reached. The doubt develops into the process of distinction, in which one by one, the mind abstracts and examines the different parts and attributes of the object in order to discover the special meaning of each. It then holds the particular meaning of the attribute or part in consciousness along with the meaning which has just been apprehended, being aware that they are different, although known in the one mental act. This is to discriminate them. The two separate meanings are then compared. It is thus evident that the total process in distinction consists of abstraction, discrimination and comparison. The mind examines, thus, in its process of distinction, the various parts and attributes of the object until it feels justified in classifying it.

The first process in classification is that of classifying the object as a whole, on the basis of the meaning discovered in the examination of the various parts and attributes.

The second process in classification is the act of identifying the object with its causes and effects.

The final process in classification is to identify the object with its central meaning. In this stage the mind becomes aware of the generic force which underlies the object as its dominant characteristic, but is not conscious of

it as creative; that is, does not recognize it as a generic force. It merely becomes aware of this central truth as in the object. Through the whole process of understanding the object or objects the mind regards all parts, attributes, divisions, etc., as externally imposed.

The following examples will reveal in simple form the general nature of the process in understanding:

Let the object be a glass pen in which the tubular holder tapers at one end to form the point.

In the first stage—that of apprehension—the mind first creates an image appropriate to the object. The image stimulates the mind to react similar past experiences, and to compare and contrast them with the present image. Upon this basis the mind dimly interprets the image to mean a glass pen. This completes the stage of apprehension.

The presence of this meaning stimulates the process of distinction. In this process the mind first abstracts one particular element of the image to which it directs its attention. In this case it abstracts the element signifying the tapering point. The mind then sets the idea of the tapering point over against the apprehended meaning of the object. This stimulates the comparison of the idea of that particular characteristic with the apprehended meaning to discover whether or not it is in harmony with it, thus tending to prove it to be the correct meaning. The mind may put forth this full process of distinction with attribute after attribute of the object until it is certain as to whether or not the meaning apprehended is the correct one. In this case the element signifying a tapering point supports the meaning, a glass pen, and the apprehended meaning is correct. This completes the stage of distinction.

The process of distinction develops into the stage of classification.

First, on account of the external attributes of the

object, the mind classifies it, as a whole, as a glass pen.

The object is then classified as to its cause and effect. To do this the mind reflects concerning the process in the consciousness of the producer. What ideas caused him to produce the object?

This reflection may result in the idea that the producer wished to make a pen in which the pen and holder would be in one piece. He may have thought that a glass pen would prove more attractive to the child than an ordinary pen, and that in consequence the sales might be greater. He may have known that a glass pen would be easily broken, and that this would also tend to increase the sales. The person who is studying the object may, by his reflection, have discovered many other causes of the glass pen, but these are sufficient to make the example clear.

The mind of the investigator next discovers the effects of the production of the object. He finds that the pen is always ready for use, since it is made in one piece; that it attracts the attention of the child, and that every child will have one if possible; that it is easily broken, and that a paper written with a glass pen does not present as neat an appearance as one written with a steel pen.

The last stage in the process of classification is the discovery of the central idea in the object. In this case it discovers the idea, writing with a one-piece object to be the dominant notion. This central characteristic of the object is, however, considered as passive, as merely there.

Let a second example be the process of understanding some strange plant, as the *water-mould.*

The act begins by the apprehension of the mould as it lies on a piece of mounting glass. In this process of apprehension, as shown in the previous example, there are three distinct movements, e. g., the mind sense-perceives the mould on the mounting glass, reacts similar past ex-

perience and compares and contrasts the idea of the present object with similar past experience and is thus led to infer that the object present now is water-mould. Apprehension is really the first aspect of the law of self as manifested in the act of understanding.

The presence of the apprehended meaning stimulates the mind to pass into the stage of distinction. This stage either proves or disproves the inference made in the stage of apprehending. It also is a complex process: First, the mind abstracts an attribute as *colorless*. It then discriminates the meaning of this attribute and the general idea or meaning—water-mould—which it had apprehended. It compares the meaning of the abstracted attribute—colorless— and the meaning of water-mould, asking the question, "Does the meaning of water-mould harmonize with the meaning of the abstracted attribute?" One distinction may furnish sufficient basis for the classification of the object, but the mind usually abstracts many attributes. For example, in this case the student may, by means of the microscope, isolate the characteristics—thread-like parts, spore-producing, particularly shaped spores, etc, and in each case discriminate and compare, asking, meanwhile, the question given above.

When the process of distinction has disclosed considerable significant data, there is a development into the higher process of classification.

In this process, on the basis of the meaning of the attributes discovered, i. e., living in water, receiving nourishment from seeds, fish eggs, fish and dead insects, colorless, thread-like, spore-producing, having spores of a characteristic kind—the mind makes the general classification of the whole object as water-mould. This meaning is more fully mediated than that of apprehension. This act of general classification is succeeded by the act of classing

the object with its causes and effects. It is discovered, for example, that the causes of the water-mould are the presence of water in large quantities, of dead insects in the water, its own nature, etc.

The self continues its process of classification by becoming conscious that the effects are as follows: the disintegration of the lifeless insects, and the restoration of the elements in them to the air and soil, the destruction of dormant fish, the prevention of the hatching of fish eggs, the destruction of the germ in the seed, etc.

The conclusion of the process of classification is the act of identifying the water-mould with its predominant characteristic, i. e., putting forth its peculiar mode of activity *in water*, as its name signifies.

The understanding is more fundamental than the language act in that the most active element of consciousness—attention—is concentrated more largely upon meaning, as such, than is the case in the language act.

As previously indicated, the element of relation or meaning is indistinctly and indirectly noticed even in sense-perception and memory. This apprehension of meaning becomes slightly more explicit in imagination and still more so in the language act. It remains true, however, that in each of these forms of activity the focus of attention is upon the particular object which, in the language act, is language or expression itself.

In the act of understanding, the focus of attention has changed from the particular object to its meaning, i. e., the mind does not apprehend the particular object, but rather the meaning of it; it does not notice the abstracted attribute, but the meaning of the abstracted attribute; it does not discriminate the object and the abstracted attribute, but the meaning of the object and the meaning of the abstracted attribute, etc. This is an im-

portant advance. It is the act of being concerned with relation, a general, permanent something, rather than with a particular, transient existence.

What is the *neural basis* of the stages in the progress of understanding?

The following may be given as pedagogical principles implicit in the activity of understanding:

The pupil should be led to feel that sameness is the relation emphasized in the understanding and that distinction is for the purpose of identity.

His process in knowing the meaning should be in harmony with the order of development in the process of understanding—apprehension, abstraction, discrimination, etc., but there should be no effort to make him acquainted with the process itself.

He must be led to feel that the true totality of an object is found in its causes, its present condition and its effects, and that what is usually called an object is only abstract, i. e., partial.

Finally the pupil must be so directed in his work of discovering the meaning of objects that he will feel that each object possesses a central characteristic which gives most insight into its nature.

2. *Ratiocination.*

The nature of this general process has been sufficiently considered on pages 168-170. Attention is to be given here to its first form.

a. *Conception.*

The beginning stage of ratiocination is the process of conception. The idea resulting from the process is termed the concept. Conception takes its origin as do all other mental processes, in an initial condition, the image. (See page 158.) The image is the preliminary adjustment

of the mind to the object. It may be said to be any particular mental state of the self prior to the discovery of the function or meaning of that state. The image is the germinal stage of the total mental act, the other stages of which develop from the image according to the general laws of the mind and the special culture of the individual. The process of conception may be defined in a preliminary manner, as the construction of an image which is an adjustment to a particular object present or absent, and the interpretation of this image as symbolizing, not the particular object, but rather its creative activity. That is, the past experience is so adjusted to the image as to invest it with a general meaning. In other words, the image in conception signifies a *relation* of the object, and not merely the particular object, and this relation is the essential nature of the object.

It is held by some psychologists that one may have a concept of a particular object, as of Lake Michigan. This seems to be the position of Herbart and those who are in harmony with his psychological doctrine. The view is not limited to these, however. In Angell's *Psychology*, pages 213-214, the same opinion is expressed: "We define conception as a process of forming general ideas, and this seems to be the most striking feature in the process. But if all words are essentially concepts, we must have concepts of individual objects as well as of classes; or at all events, our method of thinking individual objects must be the same as our method of thinking classes. This is, indeed, the fact. We really have a concept of Jupiter, as well as of gods; a concept of earth, as well as a concept of planets; a concept of this particular book, as well as of books in general. We have only to remember that conception is, after all, at bottom simply a mental process of designating meanings, to see that we can in this way indicate any meaning we wish;

e. g., the meaning of a single object or a dozen; the meaning of a mathematical relation, or of an historical relation; the meaning of a familiar object, or of an impossible one. In each and every case we shall have a concept, and in most cases a word, or a word-image, will be a very convenient device by means of which to think it.

We may easily connect the process by means of which we gain concepts of single objects with the process by means of which we obtain general ideas of classes of objects, if we observe that in both cases we have simply set a boundary line about certain things; in the one case the boundary contains one object, in the other it contains an indefinite number. But in both cases our mental act has been the distinguishing of one kind of meaning from all other kinds of meaning. That form of the process in which our idea refers to some common property, or properties, of a number of experiences has commonly been regarded as the true type of conception, because we appear in such cases to have *abstracted* the common qualities of a number of events, then *generalized* upon these, and so obtained the concept, or general idea. But the process by which we reach a concept of a single object involves abstraction just as truly, if not so extensively, as the previous form of operation. To obtain a concept of London involves setting the idea of London off against all other ideas; involves abstracting it in a perfectly definite way. In a sense, too, our concept of London is just as complete, just as universal, as is the concept *city*. It applies to *all* of its object, as truly as does the concept city, and it is in a measure an accident, an irrelevant incident, that the total object referred to is singular and not plural.''

In objection to this doctrine two things may be said: In the first place, close introspection would probably show that a person while considering the seemingly particular

objects, e. g., Jupiter, the earth, London, etc., is in a subconscious way, aware of each as one of a class.

In the second place, the process of abstraction, which is said to be involved in the act of creating the concept of a particular object, really resolves the particular object, as London, into many objects, and hence the meaning observed is a general meaning in that it is common to all the aspects of the particular object. For example, one may dwell in London for months, or years, and gradually become acquainted with its streets, docks, tramways, banks, cab lines, bridges, tenement houses, etc. In each of these aspects of London he becomes aware of a common spirit or meaning. This common meaning is the concept or significance of the many objects or aspects of the one city.

A more common notion of conception is that the act is one in which the person interprets his image of a single object to denote a meaning common to it and to all others of its class. In this case the person is aware that the particular object is merely one of a class. The image of a particular object is related to the observer's past in such a way as to symbolize the common attribute, or the group of common attributes as passive, i. e., as merely there. This aspect of conception is closely allied to the understanding. This more common notion is shown on page 208 of Angell's *Psychology*: "We may say, following the common usage, that conception is that mental operation by means of which we bring together the common points of our various experiences and mentally consolidate them into ideas; ideas which we are then able to use as symbols, or representatives, of these manifold ideas."

This is probably the notion of the concept which is best adapted to educational work in the grades and to a large extent in the high school.

In the closing years of the high school and to a

limited degree somewhat earlier, the pupil is able to know, or at least, to feel a more fundamental meaning. To this more generic aspect of the meaning created in conception attention will now be given.

The essential idea in conception is that of creation or production. It is an act of constructing an image of a particular object, as, for example, of a column, and interpreting the image to symbolize the creative activity which gives rise to this object and to all other objects of the class. In Dewey's *Psychology* this doctrine is thus expressed on page 204-205: "A concept is an image having the function of symbolizing some law or principle in accordance with which a thing or a number of things may be constructed."

In the Public School Journal, Vol. 11, pages 128-130 the same writer in explaining the act of conception says: "The concept arises from the percept *through realizing the full meaning im*-plied, but not *ex*-plicit in the percept. For example, take the percept of the triangle. So far as this is a mere percept, it is regarded wholly as a particular thing. Knowledge of it from this point of view would be exhausted in getting its exact shape, size, length of sides, degree of angles, stuff made of, color, etc. The mind would nowhere be led beyond the consideration of the bare thing present. If it were found that the sum of its three interior angles was equal to two right angles this would be a trait of the particular angle, a bare item of information of no more general value than that the length of one side was one and two-seventeenths inches.

But suppose the mind advances beyond the particular triangle to the thought that there is a principle involved in the triangle; that the triangle, like everything else in the world, is made upon a certain principle which is embodied in it; that this principle furnishes the plans and

specifications according to which anything must exist in order to be a triangle at all; a principle which, if exceeded or come short of, there is no triangle at all. What shall we call this principle? Is it not evident that, since it is this principle which constitutes the particular thing a triangle, rather than a pumpkin or a stove pipe, it is this principle we really mean by triangle and are attempting to know? Well, it is this principle which forms the concept, 'triangle'. The concept of 'triangle,' in other words, is the *way in which three lines are put together;* it is a *mode* or form of construction."

In regard to this doctrine Dr. W. T. Harris, Commissioner of Education, offers the following on page 179 of the same volume of the Public School Journal:

"I was very glad to see Professor John Dewey's article on the question, 'How does the concept arise from the percept.' I think that his answer to the question is substantially the right one, and I do not know of anything more important in psychology than this view of the question. The concept arises from the percept, not by omission of certain traits and features that are not common to the special percepts—it does not arise from abstraction—but it arises by a deeper insight into the constructive nature of the process which creates or generates the particulars which form the objects of perception. Sense-perception furnishes us objects which are dead results. The conceptive faculty perceives the generatives causes, the formulative processes and sees these, more or less adequately, when it uses general names. The conception thus, as Mr. Dewey tells us, perceives a deeper reality than sense-perception. Nominalism had inverted the true order. It supposed that the objects of sense-perception were the true realities, and that concepts were mere classifications or empty names, without a corresponding reality.

There are two grades of reality; the dead results offered to our senses, and the living process or force, which brings or causes these dead results or things. The process is the deeper reality, because the cause contains in it all the reality of the effect and also all of the reality which is necessary to annul the effect. However, few people have learned to think sufficiently to see that change involves, first, the reality of the thing as it is; secondly, a deeper reality which annuls the thing as it is and causes another thing to exist in its place."

The process in the act of conception may be illustrated by considering it in relation to the column as a feature in architecture. With the Greeks there were at first two orders, the Doric and Ionic. From these there developed the Corinthian order, and in later times, under Roman influences, there arose the Tuscan and the Composite orders. Each column consists of base, shaft and capital. The base usually includes the plinth, torus and scotia. The shaft is a cylinder varying in height from four to nine and one-half diameters. It is fluted, and the flutings vary in number, from sixteen to twenty-four. It slightly increases in diameter for about one-third of its height, and then decreases gradually to the capital. The capital consists of one or more grooves running around the top of the shaft at right angles to the flutings, the echinus, and the abacus. There is great variety in regard to these different features, but amid all variety the column maintains its central function of *supporting* and manifests a gradual transition from the stylobat to the architrave.

Let it be assumed that a Doric column is present to the observer. What is the process in his act of conceiving the column?

His mind adjusts itself to the particular column present

as it would in an act of sense-perception. That is, it constructs a definite image of the object.

The presence of this image stimulates the reaction of similar past experiences. The presence of the present image and of the re-acted experiences in consciousness, stimulates the relating activity of the self. The result is a careful comparison of the present image with the re-produced experience.

The act of relating gradually becomes an inference. The mind infers its present image to denote, not the present particular column, not the set of common attributes belonging to columns, but something still more fundamental, i. e., the creative activity which produced this and other columns.

The process thus terminates in the idea of the principle or energy which produces columns.

In perception the mind would have interpreted the image to signify the particular column as present and as different from the self.

In the act of conception, however, the image is interpreted to denote a much more complex object. It denotes (1) the generic energy or column-producing activity as undifferentiated; (2) the differentiation of this universal energy into its principal modes of activity, as the activity revealing itself in the Doric order, that revealing itself in the Ionic order, etc., and the differentiation of each of these predominant modes of activity into particulars; (3) The manifestation in each of these particulars of the universal mode of producing columns, as well as the more special mode, as, for example, the Doric principle.

It thus appears that the mind in its act of conception reads into its particular state or image a rich and important meaning. The image denotes a generic force, a universal; the differentiation of this universal into sub-

ordinate modes of activity, and the further differentiation of the subordinate modes into the particulars; and the manifestation by each particular of both the subordinate and the universal energies or modes of activity. The great significance of the act of conception is that it results in an implicit recognition of the unity of the universal and the particular. It is important to have merely a feeling that the particular is generic.

Conception is more fundamental than the act of understanding in the following respects: It involves a consciousness of the central characteristic as a creative force. It is the change from the comprehension of an object as passive to the notion of it as active, as having within it a mode of activity which creates its parts and attributes.

It would be advantageous to work out at this stage *the neural basis* of the act of conception.

Among the pedagogical principles implicit in the process of conception the following may be noticed:

The teacher may lead the pupil to think of the idea in the object itself as determining the various parts and attributes of each particular object. For example, the central idea or function of the column—supporting—determines that there shall be a base, a shaft and a capital; that the plinth shall be a transition from the scotia to the torus, etc.

The pupil should be led to see the unity of function of the parts and attributes of each single object.

He should be encouraged to select the common characteristics of the objects or subordinate classes and of the total class.

He should also have awakened in him the desire to clarify his indistinct concepts. This sometimes widens the meaning, as when Jesus said to the Jews, "Ye shall now the truth and the truth shall make you free." It

sometimes restricts the meaning, as when one thinks the word teaching to denote all instruction, and afterwards conceives teaching as the art which puts the learner more into possession of himself.

b. *Judgment.*

The psychological activity of judging is a development of conception. In conception the self is conscious of a universal, a particular, and their unity. There is a distinct consciousness of the universal as such, but the knowledge of the identity of the universal and the particular is implicit. Judgment is a higher mode of knowing than is conception in that the consciousness of the relation of the general to the particular becomes explicit. The judgment involves discrimination as an element, because the universal or general and the particular are held apart in consciousness, but comparison and the act of identifying are also elements. The explicit knowledge of the identity constitutes the development out of conception.

The awareness of the relation of the general and the particular is so distinct that it is called an *assertion* and may afterwards be expressed in the copula of the sentence. Since in the act of conception the mind is conscious of the universal or the generic activity, the subordinate modes of the generic activity, the particular, and of the fact that the particular manifests the generic activity, the act of judging is merely the explicit knowledge of the same factors.

The characteristic fact of which the self becomes conscious in its process of judging is that *the particular is generic.* This is implicit in every judgment and may be observed by noticing any expressed judgment, as, "This Doric column is fluted." It is evident that the subject of the sentence expresses a known object, the predicate a known attribute, and the copula a known identity. The

fact that the particular is spoken of as a column and as Doric, indicates that the mind is aware that the particular manifests the generic, i. e., the universal activity which produces columns, and that it also manifests that subordinate form of column-producing activity known as Doric.

The word "fluted" also denotes the presence of generic activity, since the attribute expressed by the word is one of the potentialities of column-producing activity.

It appears from this analysis that the process in an act of judgment is: Consciousness of a particular, of a universal, and of their unity. Hence, the judgment seems to represent more closely than does any other form of knowing, the characteristic process or law of the mind.

The inference is that the subject of a sentence always expresses a particular, at least in comparison with that which the predicate denotes, the predicate a universal and the copula a unity of the two.

Let this inference be examined by a consideration of examples under the classes of sentences:

1. On the basis of the characteristic process of the self, judgments are immediate, conditional, or definitive.

Examples of these forms are:

This flower is blue.

If the snow is melting it is warm.

A circle is an enclosed space, every point in the circumference of which is equally distant from a point within called the center.

2. On the basis of whether the attribute expressed by the predicate adds to the meaning of the object expressed by the the subject of the sentence, judgments are analytic and synthetic, as:

The robin is a bird.

This flower is blue.

The shortest distance between two points is a straight line.

The first of these is regarded as analytic, because the object expressed by the word *robin* is thought to include the characteristics denoted by the word *bird*. The second and third are considered to be synthetic on the ground that the attribute expressed by the predicate adds a new characteristic to the object expressed by the subject. It is probable that all judgments termed synthetic are, psychologically viewed, analytic.

3. On the basis of the *necessity* of the unity of the particular and the universal, judgments have been classed by Kant, Brougham, Sir William Hamilton and others as contingent and apodeictical. An example of the contingent form is "All existences are useful," while the apodeictical form is shown in "Only one straight line can be drawn between two points."

4. On the basis of purpose judgments are classed into four kinds exemplified by the following:

Iron is a metal.

Is the book heavy?

Open the letter.

"How far that little candle throws its beams!"

5. On the basis of the number of psychological assertions of the unity of the general and the particular, and the relation of these thoughts, judgments are classed as simple, complex compound and compound-complex, as:

This flower is blue.

This flower which is in the vase is wild.

This flower and the vase are mine.

This flower which is in the vase and the vase are mine.

6. On the basis of whether the relation asserted is

unity or difference, judgments are classed as positive, or negative, as:

Anger is an emotion.

This fruit is not an apple.

It will be of advantage to examine, one by one, each of these judgments given to illustrate the various classes, in order to decide whether the mind is conscious of a particular in that which is expressed by the subject, and of a general or universal in that which is expressed by the predicate; and also to determine whether the relation expressed is always, fundamentally, one of unity, even in those cases in which the writer's intention is to denote difference.

It is evident that the mind asserts a unity between the particular and the general in the judgment, "This flower is blue." In the sentence, "Iron is a metal," is this also the case? A single fragment of the iron of the world, or the whole of the iron existing may be regarded as a particular object. That which the self is conscious of as denoted by the predicate seems on the surface to be a space-occupying object. Reflection, however, indicates that the mind is thinking of the *characteristics of metal* or the attribute, *being in the class, metals.*

Each of these is a general, and hence wider than the object expressed by the word "iron."

The same may be shown in regard to the mind's act of judging as expressed in the sentence, "Anger is an emotion."

The nature of the mental process in judging, may be made more clear by examining the negative form in order to determine whether the clearly expressed relation of difference is really intended to signify the existing nature of the object. If this is the case, all acts of judging are, essentially, a consciousness of the unity of a particular

and a general, although the expression in the sentence may manifest the mind's attention to difference, which mental stage is also present. The example given above is, "This fruit is not an apple."

The one who uses the sentence evidently intends to express the thought that the fruit under consideration is *different* from the apple, i. e., that it does not manifest the characteristics of the class, *apple*. Does not the writer thereby express, secondarily, the unity of the particular, *this fruit*, with the attribute, *being different from the apple?*

The foregoing examples may be examined further for the purpose of considering whether the mental act of judging is an awareness of the unity of a particular object and the attribute of that object, or whether it is a consciousness of the relation of concepts.

In the judgment expressed by the sentence, "This flower is blue," does the writer of it intend to express his thought that the idea of the object is in identity with the idea of the attribute, or is it his purpose to express his notion that there is a unity of the space-occupying object expressed by the words, "this flower," and its actual attribute denoted by the word, "blue?"

The judgment has been spoken of as "the assertion of a relation between two mental elements." This assumes that the judgment is a mental process of becoming aware of one concept, then of another, and then of their relation. This seems too mechanical, and it always implies three factors as underlying every sentence, e. g., "This wood is hard." These factors are,

The actual wood, the actual attribute expressed by the word, "hard" and the relation of unity.

The concept denoted by the word, "wood," and the

concept denoted by the word, "hard," and the concept of their unity.

The consciousness of the unity of the two concepts. Considered psychologically, the given sentence expresses the known unity of the actual object and the actual attribute of which the person is conscious. This attribute was abstracted from the complex object and identified with it at the same time, for the second and third stages in the act of judging are practically contemporaneous.

What, psychologically, is the relation of the extent of the object expressed by the subject of the sentence, and the extent of the attribute expressed by the predicate?

The mere form of the sentence, sometimes indicates that the attribute may be of wider extent, as, The pencil is hard. In other cases the form suggests equality of extent, as, A man's a man. Four equals four.

Considered as an element in the psychological process, the attribute denoted by the predicate appears to be of greater extent in all cases than the object expressed by the subject. This seems evident in regard to the sentence, "The pencil is hard." Reflection will show that such is the case, also, in the other examples, "A man's a man," and "Four equals four." The word "man," in the subject means a particular man, i. e., a man with his ignorance, poverty, ragged clothes, evil tendencies, etc., while the word, "man," in the predicate denotes manhood, or the potentiality of manhood. A similar explanation may be given for "Four equals four."

The fact that judgment is studied as a development from conception, does not imply that this mode of psychological activity is not manifested at all in the earlier stages of consciousness. The mind is really judging implicitly in sensation, sense-perception, memory, etc. Even the mental ac-

tivity of the child which is expressed in the single word, "ball," is the implicit judgment, "This is a ball."

Why, then, is there an explicit treatment of a special form of psychical action known as *judgment?* Judgment, as that form of mental action which is the stage succeeding conception, is a *distinctive* form. It is a judgment constructed after the mind has become somewhat *conceptive* in its thinking and it involves, consciously, a concept in the predicate. It thus seems that the psychological activity of judging is a *constant* form, appearing at first implicitly, and afterwards, explicitly.

While, however, the judgment may be viewed as a psychological activity developing *from* conception, it is in a crude form the mental state out of which the concept arises. This is well shown by the following from Angell's Psychology, page 228: "All of which seems to indicate with no great uncertainty that the origin of such a concept as badness is to be found in mental processes which are in their nascent stages crude, vague, undeveloped judgments, involving a rudimentary recognition of relations between certain more or less distinct portions of our experience. We get at these elements of experience mentally by means of rudely distinguished ideas—in the case of our illustration the idea of the act and the idea of its consequences. Such concepts as this, i. e., badness, owe their creation, then, to elaborations of already attained ideas in a primitive form of judgment."

The judgment is more fundamental than conception because, as noted above, it involves a more extended consciousness. In conception the awareness of the unity is implicit, while in judgment it has become explicit. This implies a more distinct discrimination of the general and the particular. The general and the particular also become more distinct or differentiated in themselves in judgment.

The foregoing explanation of the psychological process in judgment leads to an investigation of its *neural basis.* This investigation may be assisted by a study of pages 241-251 of Angell's *Psychology,* and pages 170-177 of Thorndike's *Elements of Psychology.*

The following pedagogical principles are among those which seem to be based on the nature of judging:

1. To foster accurate habits of judging in the pupil he should be so directed in work that he will first concentrate his attention on the object. This will isolate it from the environment.

2. He should then be directed so that he will analyze the object, thus abstracting the included attribute. As he becomes aware of this attribute he identifies it with the object.

3. He should then be led to analyze the attribute, that is, the general. It is important to have the pupil become as clear as possible concerning the nature of this attribute which is in unity with the object, because it is by means of this clearly understood attribute that the nature of the object is to be learned.

4. His educational work should also lead him to compare the extent of the attribute with that of the object. This means that the pupil is to become distinctly conscious that the attribute, for example, that expressed by the word, "blue," belongs to many objects besides the one under consideration, and that this object is thereby identified to a degree with all the other objects in which this attribute is found.

5. The pupil should also observe that this attribute is narrower in a certain sense than the total object, because it is only one of the many different aspects of the object.

6. The power of judgment can be strengthened still further by a careful examination of sentences. For exam-

ple, in studying the sentence, "The yellow pine hardens," ability in judging is increased by answering such questions as, "What change in the extent of the object expressed by the word, "pine," is made by considering the attributes expressed by the words, "yellow" and "the," as belonging to it? What attribute is expressed by the word, "hardens"? "Does this word also denote the unity of the object and the attribute?" "How can the predicate be given so as to express, explicitly, both attribute and relation"?

7. The pupil's power of judgment may be increased in a very effective way by having him express a thought and then, after studying the expression, again express it more precisely.

c. *Reasoning.*

The relation of the particular object to the universal is explicitly known in judgment. The word, "judgment," is often used in popular speech to signify the act of reasoning, as in the sentence, "He is a person of excellent judgment;" but strictly considered, the relation of which one is aware in judging is not consciously mediated. What is the advance in consciousness which mediates the relation? When, in judging, the self discovers the unity of the particular with the general, it has become aware of a truth concerning the particular object. In order that this truth shall become mediated to the mind, the consciousness of its *dependence on another truth* must arise. The relation or truth which is known in judgment is always an element of a larger truth, or this second truth is the invariable accompaniment or sign of the relation known in the act of judging. In the mere act of judgment, however, this other relation, which is the ground or sign of the relation asserted, is not noticed, at least not explicitly. If this other truth is observed and held to be the basis or sign of the rela-

tion between the particular and the generic, of which the person is conscious in judging, the relation is mediated. This is the development in consciousness which reasoning manifests considered as a stage of knowing which arises out of judgment.

In judgment the idea that the particular is in unity with or different from the generic is in a certain sense immediate. The function of reasoning is to mediate this idea. It becomes mediated when the person becomes conscious of the basis of the relation, when he knows why he deems the relation to be true. This thought is expressed on page 221 of Dewey's *Psychology,* as follows: "Reasoning is that act of mind which *recognizes* those relations of any content of consciousness through which it has the meaning which it has, or is what it is."

There are three forms of reasoning, although they are merely elements or aspects of the one process.

Identification.

This is the inaccurate reasoning of the untrained thinker who *notices but partially* the truth which is supposed to be the basis of the relation asserted. The relation thought of in identification as the ground of the unity between the particular and the generic is characteristic of more relations than of the one asserted. It may or may not be its basis in the given case. If one regards a certain ground material to be coffee, because it is brown in color, the act is identification.

The initial stage in the process is the creation of an image of the object. Identification is merely a case of inaccurate induction or deduction.

Induction.

The particular object in induction is the entire class. The universal is an attribute which is judged

to belong to each object of the class and not merely to those which have been examined.

What are the relations or truths which are regarded as the ground of the identity of the particular and the general of which one is conscious in the judgment involved in the act of induction? This may be shown in an example. Assume that one becomes conscious in an act of induction that "All adverbs express an attribute of an attribute." The objects denoted by "All adverbs" constitute the particular object; the attribute denoted by "express an attribute of an attribute" is the general; the relation is one of unity.

What are the two other relations which are the ground or sign of this relation? They are (1) the unity of adverb-producing activity and sameness or uniformity, and (2) the fact that the activity has produced this one adverb with the characteristic expressed in the predicate.. Thus the person believes that the process of producing the adverb is always substantially the same and he observes that in this case, it has made the adverb possess the characteristic of "expressing an attribute of an attribute."

What are the special stages in the process of induction? These have been previously considered on page 174, and hence will be but briefly noticed here:

A particular object (an adverb) is imaged and known in the process which has been spoken of as the language act. This special process may occur with many such objects.

The result is that the mind abstracts an attribute, as, *expressing an attribute of an attribute.*

The objects are then thought of as being members of a class. It may be that the name is known and that they are understood to be adverbs.

The person who is studying them then becomes aware of the other relations on which the asserted relation de-

pends; namely, that there is a uniformity in the process of creating adverbs and that the process has given to all those which have been examined the characteristic of *expressing an attribute of an attribute.*

The inference is then made that the relation expressed in the judgment is true because of the truth asserted concerning the process of producing the adverb.

This completes the process, and the relation expressed in the judgment of the induction has become mediated.

The act begins in the creation of an image and the function of this image is to denote not especially the relation of the particular and the general, but rather the relation of the identity which is asserted to the other relations, which are (1) the uniformity of the objectifying process and (2) the special result of the creating activity in this given case.

Induction is sometimes spoken of as analytic. It is, however, both synthetic and analytic. It begins with an indefinite knowledge of an object as a whole, analyzes the object in abstracting one of its attributes, identifies the object with a class, identifies the class with an activity which is uniform in its process and by these means synthesizes the particular object and the isolated attribute. If the consciousness of these two relations which are the basis of the identity asserted in the judgment is *implicit,* induction may be termed empirical or *a posteriori* reasoning. If the consciousness is *explicit,* the induction may be termed *a priori* reasoning.

The stages in an act of induction are the awareness of the particular object as a whole in an act of sense perception, memory or imagination; the abstraction of an attribute found to be present; the identifying of the object with its class; the identifying of sameness or uniformity with the process which produces the class, and the identifying of the isolated attribute with all objects of the class because

the special objects examined have received the attribute by the action of the uniform creating process.

The process of induction is more fundamental than judgment in that it involves not only a consciousness of the direct relation between the particular, which is the whole class, and the general, but also a knowledge of two other relations, namely, the uniformity of the process and its specific results in this given case. Along with this there is also a knowledge of the fact that these two relations are the ground of the direct relation.

The pedagogical implications in the inductive process contain among others the following:

1. The pupil should examine, as a whole, a sufficient number of objects to emphasize the attribute which is to be abstracted.

2. The attribute should then be clearly abstracted and considered.

3. Attention should then be given to the process and to the fact that it is substantially uniform. For example, if the object is a grain of corn and the attribute to be abstracted is that of possessing a *pericarp*, the process is corn-producing activity and the pupil should be led to notice that it seems to be practically uniform. The general uniformity of processes in nature and in the activities of man should be illustrated in examples that may be easily understood.

4. Emphasis should then be given to the special result in the given case of this process which is held to be uniform, that is, the fact should be dwelt upon that this process has manifested itself in this special case by producing a given particular attribute and that it is considered to be uniform in its mode of action.

5. The fact that this abstracted attribute is a charac-

teristic of the class should then be stated as a law in simple language.

6. The pupil should finally be led to test the law by the examination of new cases.

The general result should be that the pupil would tend to experience dissatisfaction if he were not given an opportunity to examine an adequate number of objects in order to discover the law and afterwards to study a sufficient number of new cases to test it.

Deduction.

This process is merely one aspect of reasoning, induction being the other. The result of induction is that the self has become aware of a general truth or law of the class. This has enriched the mind's past experience, which is always employed in knowing new objects or new truths about old objects. The employment of this general idea which the mind has discovered in its inductive process, to answer an inquiry about a particular object is deduction. The assumption is that the object is not accessible and hence can not be examined, or that for some reason it is not advisable to examine it directly to the extent necessary to ascertain whether it possesses the inquired-for attribute. The particular object in deduction is, therefore, some single existence and not a class.

The deductive process begins with the idea of this particular object as a whole.

This idea stimulates the mind to abstract or isolate some attribute and to inquire whether the object is characterized by this given attribute.

Since there is no direct way of determining whether the object possesses the attribute, the mind proceeds to identify the object with a class suggested by other attributes which are obviously present. It is the assumption that the act

of identifying it with that particular class will give special aid in knowing whether the inquired-for characteristic belongs to the particular object. It would not suffice to class the particular object with any class whatever. The person engaged in the deductive act knows his own purpose and he will naturally be impelled to identify the object with a class, the consideration of which will further the investigation.

The act of classing the object is succeeded by an analysis of the class to which it has been referred in order to have clearly in consciousness the essential characteristics since this will give opportunity to notice whether the inquired-for attribute is among the characteristics of the class.

The result of this analysis may be that the attribute which was inquired for is not found among the essential characteristics. In such a case, the mind considers that attribute to be lacking in the particular object. This last act is the conclusion, or the deductive judgment.

What are the related truths, the consciousness of which has mediated the truth asserted in the deductive judgment? One is the fact that the inquired-for attribute is not an essential characteristic of the class. The other is the identity of this object with the class.

In order to illustrate the process, let the following activities be assumed: The mind becomes conscious of a certain grain. This is knowing it as a whole. The mind then, influenced by some external stimulus or idea, abstracts, i e., centers its attention on a certain attribute, as, *having an endopleura,* and begins to think whether this grain possesses such a coat. In order to answer this question the grain must be identified with some class which its obvious attributes suggest, provided such identity will aid in the answer, as will usually be the case if the object is thoughtfully classed. In the given case, the fact that the grain is wedge

shaped and that it has an indentation on one side at the scutellum are noticed and in consequence, the grain is classed as a grain of corn. The mind then remembers the general truth concerning the arrangement of coats in grains of corn which it has acquired in previous inductions, namely, that grains of corn possess two coats only, the *pericarp* and a slight *testa.*

This leads to the judgment that the grain being considered has no *endopleura.* This ends the deductive process. Its result concerns one object only.

In deduction the mind is synthetic in first becoming aware of the object as undifferentiated; it then becomes analytic in abstracting the inquired-for attribute; the process is then synthetic in the act of classing the object; it then becomes analytic in distinguishing the class into its essential characteristics; the process is finally synthetic in the concluding judgment, and in identifying the truth expressed in the judgment, (1) with the idea that grains of corn possess no *endopleura,* and (2) with the idea that this is a grain of corn.

If the consciousness of the relation of the truth expressed in the judgment to the other relations that are its basis is *implicit,* deductive reasoning is empirical or *a posteriori.* If the consciousness of this relation is *explicit,* the reasoning is *a priori.*

The two aspects of the one process of reasoning are, considered as a unit, a procedure from a somewhat fused particular through a general to a more clearly known particular. This is also the process in each aspect, although, if superficially noticed, induction seems to be merely a procedure from the particular to the general and deduction a procedure from the general to the particular.

The fact that the identity asserted in both the deductive

and the inductive judgment is grounded on other relations gives rise to the syllogism so much emphasized in logic.

Deduction is, as a process, less vital and fundamental than induction because it seems to be concerned with accomplished results rather than with producing activities, and results are always less universal than the creative energy which gives rise to them. Deduction is more fundamental than judgment in that it involves not merely a judgment, but also a consciousness of the relation of the identity asserted in the judgment to two other relations of identity; namely, the identity of the whole class with the essential characteristic and the identity of the particular object with the class.

It would be advantageous to give attention, at this stage, to *the neural basis* of reasoning.

Among the pedagogical principles which may be traced to deduction the following should be noticed:

1. The essential characteristics of any class of objects should be clearly distinguished from those that are merely common, and also from the unessential characteristics.

2. The learner should be led to notice carefully what the inquiry concerning the object is. For example, in regard to the grain which was observed he should emphasize the fact that the inquiry concerned itself with the coats of the grain, and particularly, as to whether it possessed the coat called *endopleura*.

3. He must then be made aware that he must know two things in order to answer the question; namely, the class to which the object belongs, corn, and the characteristic of the class in regard to coats, i. e., that it has two coats only, the pericarp and the testa.

4. He should be given exercises that will improve his ability to select promptly and accurately the special attribute or attributes that indicate the class of the object.

For example, in regard to the grain of corn, he should observe that two attributes, especially, are helpful in classing it; namely, its wedge-like shape and the indentation upon the side.

To render the various processes of knowing concrete, the student should examine them as manifested in the acts of the pupils during their recitations. For example, the lessons presented to the children in the different subjects, and in the various grades, should be observed in order to note the psychical processes put forth by the children in becoming acquainted with the subject-matter presented.

The *object* of each act of knowing, i. e., *that which is being known* in each process should be clearly distinguished in these attempts to interpret the lessons which are observed.

A form for recording the results of the observation, which may be suggestive, is given in Appendix II.

The Function of the Image.

On pages 158-159 the nature of the image is briefly explained, and in the first paragraph of the treatment of conception, page 204, of Dewey's *Psychology,* a distinction is made between the *image* or *particular mental act* and its *function.* The author indicates that perception does not differ from conception on account of the difference in the particular *image,* but rather on account of a difference in the *function* or *meaning* which the image has.

It may be of advantage to show this distinction throughout the series of intellectual activities:

Sense-perception—An act in which the mind constructs a particular image or state, and then interprets it to mean a present particular object.

Memory—An act in which the mind re-creates a particu-

lar mental state or image, and then interprets it to mean a particular object once present but not present now.

Imagination—An act in which the mind creates a particular image, and then interprets it to mean a particular object not present now and at no time present.

The Language Act—An act in which the mind constructs a particular image appropriate to language and meaning, or to meaning and language, and then interprets it to signify that the language symbolizes the meaning. Thus, the image denotes that identity of language and meaning which may be referred to as the relation of sign and thing signified.

Understanding.

Apprehending—The mind's act of creating a particular image and then interpreting it, indistinctly, to signify the meaning of the object.

Distinguishing.

Abstracting—The mind's act of creating a particular mental state or image, and then interpreting it to mean an isolated element in the meaning of the object.

Discriminating—The mind's act of creating a particular mental state or image, and then interpreting the image to mean the difference of the two or more objects being contemplated, notwithstanding their unity in a single mental activity.

Comparing—The mind's act of constructing a particular mental state or image, and then interpreting the image to mean the unity of the two or more objects discriminated in regard to some selected common attribute.

Classifying.

Generalizing—The mind's act of creating a particular image, and then interpreting it to mean the unity of the object with the class.

Analyzing the object into cause and effect—The

mind's act of creating a particular state or image, and then interpreting it to mean the object as distinguished into cause and effect.

Discovering the structural idea of an object—The mind's act of creating a particular mental state or image, and then interpreting this image to mean the activity or idea revealed in each aspect of the object.

Ratiocination.

Conceiving—The mind's act of creating a particular mental state or image, and then interpreting this image to signify the universal creative activity underlying the given object and all others of its class, the prominent subordinate modes of the creative activity, and the fact that each object manifests the producing activity, i. e., that each particular is *generic*.

Judging—The mind's act of creating a particular state or image, and then interpreting the image to signify the relation existing between an isolated attribute and the remainder of the object from which the attribute has been isolated.

Reasoning.

Identifying—The mind's act of creating a particular mental state or image, and then interpreting the image to mean that the object being known belongs to a class on the basis of an attribute pertaining not only to that class, but to other classes.

Inductive reasoning—The mind's act of creating a particular image, and then interpreting the image to signify that the attribute isolated from an object, or a number of objects, belongs to all the objects of the class, on account of its relation to the fact that producing activity is uniform in its process and to the additional fact that it has produced the object or objects examined as possessing the isolated attribute.

Deductive reasoning—The mind's act of creating a particular image, and then interpreting the image to signify that a certain general characteristic known to belong to the class in which this object is found is in identity with the object.*

THE LESSON.

A true lesson is an *art product,* because it has a predominant activity (the Universal) and objective elements which adequately exhibit, or stimulate and guide that activity (the Particular).

The Universal. The predominant activity or universal is in the pupil's mind. It is the essential process of his mind in learning, that is, in rendering an object subjective or known.

The mental process in the child is as follows:

1. He experiences a feeling of limit.
2. He then *apprehends* indistinctly the object as a whole.
3. As he does this he *imagines* himself as understanding the object.
4. On account of the consciousness of the two diverse selves (the real and the potential) he experiences *feelings of dissatisfaction and satisfaction.*
5. He *desires* the potential or ideal self.
6. He gradually changes this desire into *purpose.*
7. In order to accomplish this purpose, he analyzes the object which was indistinctly apprehended in the second stage into its elements or distinctions.
8. He then reconsiders the various distinctions in order to discover the predominant distinction. This is continued until the characteristic element *is known.*

* The outline of psychologcial activities on pp. 177-231 has been directly suggested by the the treatment of the intellectual process in "*Psychology and the Psychosis,*" by Denton J. Snider, Sigma Publishing Co., 210 Pine Street, St. Louis.

9. He concludes by *judging* the other elements as to their relation to this central element.

This mental process indicated as exhibiting itself in a series of successive stages is the *universal* in a lesson because it is the form of consciousness to be awakened in any case of learning.

In school work it is seldom that the activities, 1 to 6, require direct stimulation. The process in a lesson usually involves 2 slightly, 7 distinctly and with considerable continuity, and 8 and 9 in the form of organization or re-unifying.

The process noted in 7 may require a series of lessons. In that case each distinction becomes a whole in itself and stimulates the universal process. The elements of the process involved in 8 and 9 are more brief but more difficult. They are not infrequently neglected, and as a rule, even when stimulated, they are inaccurate and incomplete.

The Particular. A lesson, as a work of art, requires, however, not merely a universal, but also a particular aspect which adequately exhibits or stimulates and guides the universal. This particular consists of,

1. The subject-matter or the material acted upon. It is the exercise-ground for the learning mind.

2. The acts of the teacher. These are to be considered in a comprehensive sense as including bearing, assignment, questions, explanation, encouragement, etc.

3. The acts of the pupil. These are replies, explanations, questions, etc. They reveal to the teacher the condition of the universal process. They also increase the pupil's knowledge of the object.

4. Analogous environment. The environment referred to as a stimulant to the universal process is analogous to both the subject-matter and the universal process. If, for example, the subject matter is the embarkation for Troy,

pictures of Greek ships, of the gods and goddesses, the walls of Troy, etc., would constitute an analogous environment.

THE ESSENTIAL ELEMENTS IN A LESSON.

The subject-matter. This constitutes the first of the five essential elements in an organized lesson. In its definite form the subject-matter is a direct result of the principle or process of self-determination in the form of knowing. The subject-matter must be expressed so as to indicate both the general and special aspects. The general indicates the material and the special expresses the particular attribute to be emphasized in the given lesson.

It may be of advantage to the student to indicate the subject-matter in the material expressed in the following assignment for a lesson based on an extract from *The Hiawatha Primer:* (The class considering the extract belonged to the third grade in a rural school.)

Draw one line under the word in every sentence used to express what is being talked about:—

The cradle was safely bound.
Nokomis bound it with sinews of the reindeer.
Hiawatha rocked in his cradle.
He was in the wigwam of his grandmother.
It was dark and he was fretful.
Nokomis stilled his fretful wail.
She was singing of the forest.
She said the bear lived there.
She called him the Naked Bear.
Nokomis rocked the cradle of Hiawatha, saying,

"Hush! the bear will hear thee!
Hush! the Naked Bear will hear thee!"

The Assignment.—The statement of the subject-matter usually awakens the thought of one differentiation only. The assignment leads to the thought of more than one distinc-

tion. Hence, in constructing the assignment, the teacher is differentiating the subject-matter more fully than in the process of discovering the general and the particular.

The difference between the subject-matter and the assignment may be shown by examples:

In history—

I. *Subject-matter.* The actual growth of the spiritual attitude of the American people as revealed by the events concerning slavery during Jackson's administration.

II. *Assignment.*—

1. The condition of the public mind concerning slavery just prior to Jackson's adminstration.

2. The slavery problem during Jackson's administration.

a. Cause.
   - In the north.
     - Physical.
     - Spiritual.
   - In the south.
     - Physical.
     - Spiritual.

b. Development.
   - Through Garrison.
     - What he did.
       - Results:
         - On the north.
           - Physical.
           - Spiritual.
         - On the south.
           - Physical.
           - Spiritual.

c. Results.
   - Immediate.
   - Remote.

Montgomery, paragraphs, 262, 263, 264.

McMaster, paragraph 333.

In grammar—

I. *Subject-matter.* The basis of the classification of verbs into transitive and intransitive.

II. *Assignment.*—

1. Tell the nature of the attribute expressed by each verb in the following sentences.

2. Classify the verbs on the basis of the nature of the attribute expressed.

Age shakes Athena's tower but spares gray Marathon.

Every plant demands good soil.

The beams of the moon struggled through the rain.

The setting sun threw a flush over nature.

Time passes quickly.

A comparison of the subject-matter and the assignment in the two cases will show that the latter has as its function to awaken attention to more distinctions than were suggested by the statement of the subject-matter.

In addition the assignment is intended to indicate the order of the distinctions, and, to a degree, their co-ordination and subordination.

It must not, however, be detailed enough to enable the pupil to recite from it alone, as such recitation tends to render the lesson spiritless. There must be opportunity for the animation arising from the teacher's active test, guidance and co-operation.

The assignment is most closely a stimulus to the first process in self-determination—the indistinct apprehension of the subject-matter. Still, it fosters a transition into the second stage. Viewed with reference to the universal process in a lesson, it is a device to arouse the second stage and to promote a transition into the seventh.

The purpose of the assignment is to awaken an indistinct consciousness of

1. The main material of the lesson.
2. The salient distinctions.
3. The central attribute or characteristic with reference to which the subject-matter is to be examined.
4. The order of the distinctions.

In addition to this, its aim is to stimulate and direct the discovery of further distinctions.

Thus, the assignment, while related most immediately to the first process in self-determination, is a strong stimulus to the second. It even promotes the third process, to a degree.

It would be helpful to examine the two assignments given above in order to note their relation to the process of self-determination and to decide what changes, if any, can be made in order that they may conform more closely to the purpose of an assignment.

Attention should also be given to the relative advantages of,

The written and the oral assignment.

The assignment given at the beginning and that given at the close of the lesson.

The Steps.—The third element in the structure of a lesson is spoken of, in a figurative sense, as the Steps. According to the Herbartian pedagogy, the step is the external activity of the teacher and manifests itself in five successive stages. The stages are called the five Formal Steps.

The term step as here employed, however, signifies the psychological activity of the learner. It denotes the second stage in self-determination—the separation or special act of the learner's consciousness. This step must, however, since it is the process of the self, involve more or less distinctly all three stages of the essential movement of con-

sciousness. It is important to remember that each step in a lesson is not only a determination, but a *self*-determination, because this brings into prominence the fact that some degree of independence or origination is present. The more fully the process is an example of the learner's initiative or independence the more clearly is it *self*-determination. Whatever of truth the pupil really grasps, he must recreate or earn. It is for this reason that induction seems to be more independent, more clearly *self*-determination than does deduction. Neither is, however, the complete process of self-determination. Each is merely one aspect of it. The scientific method involves, as essential elements, both induction and deduction, but the first is the more characteristic, because it manifests the creative or independent tendency the more strongly. It is a mark of artistic teaching, therefore, when considering the characteristic step of a lesson to ask,

1. Is this characteristic step essentially inductive?
2. How may it be made strongly inductive?

The characteristic step of a lesson is the learner's activity involved in the comprehension of the truth in the subject-matter.

This characteristic step arises through subordinate steps which constitute its stages. For example, in a given lesson the characteristic step may be the act of conceiving and the subordinate steps may be the feeling of limit, sense-perceiving, etc.

In the most comprehensive view the characteristic step of a lesson can differentiate into three subordinate steps only,

1. The indistinct apprehension of the object as a whole.
2. The discovery of all of the distinctions in the object appropriate to the pupil's stage of development, regarding each distinction as independent or isolated.
3. The selection of the central distinction, and the or-

ganization of the object by becoming aware of the relation of the other distinctions to the main distinction or attribute.

In a more analytic view the steps are the stages in the full process of a lesson indicated on page 235.

In a still more special sense a step in a lesson is any one of the activities of the self in rendering subjective the object to be learned. These, in so far as the acts of knowing are concerned, are indicated on pages 177-231. Each step consists of process and meaning or of form and content. To render the characteristic step or any subordinate step definite both form and content should be given.

The Purpose.—The purpose in life may be said to be the establishment of the habit of freely choosing freedom itself for the self and others equally. To possess this habit is to have freedom both in form and in content. The freedom which is to be chosen is,

1. A mode of knowing which promotes the independence, the development of all selves.
2. Satisfaction in a condition indicating a development of all.
3. A tendency toward rational choice in every one.
4. A skillful, disciplined body for every one.

The purpose in the teacher is the act of choosing a certain condition of freedom in the pupil. This condition of freedom in the pupil is to be brought about by his own activity in mastering the subject-matter of the lesson. This act of rendering subjective the subject matter of the lesson is the second stage of self-determination as explained on page 154, and the tendency or effect produced by the activity upon the subject-matter is the third stage.

The subject-matter of any single lesson is always a fragment of the immediate larger whole.

This is the basis for the distinction of the purpose, in so

far as it relates to knowledge, into the special purpose and the general purpose.

The special purpose is to stimulate in the pupil the existence of the adequate idea of the subject-matter as a habit. In any given case this idea must be stated definitely by indicating both form and content.

The general purpose is to awaken in the learner the adequate idea of the immediate larger whole. This is partly accomplished in any one lesson. Its complete accomplishment requires the given lesson and one or more additional lessons.

The statement of the special and general purpose must not merely echo that of the subject-matter, but the thought of the subject-matter should be rendered somewhat more definite by that indicated in the statement of the purpose.

Since the special subject-matter of a lesson is a fragment of many larger immediate subjects, the statement of the general purpose by the teacher to himself is necessary to insure the emphasis of the relations unifying the special subject-matter with the selected larger whole.

The freedom which was said to be the aim of life is to be attained,

1. "By elevating the individual to his species." He is to reproduce in himself the achievements of man.

2. "By making habitual in the individual activities that reinforce rational institutions and which, in consequence, the rational institutions can afford to reinforce."

These two statements are merely different forms expressing the same meaning.

In interpreting a lesson as to the effect purposed the teacher or observer should,

1. Indicate, in definite mental terms the special effect purposed.

2. Identify it with freedom, according to either of the above statements.

3. Explain briefly the identity.

Devices.—A device is not merely some object, as a map, or a box of geometrical forms. It is not merely a picture, a drawing or an outline. It is essentially an outward act of the teacher, as a question, a direction, an explanation, a commendation, the use of a map, the production and use of a drawing. A device may include a question or direction of the teacher, a reply or work at blackboard by the pupil and the discussion of the reply or of the work.

1. The central requirement of a device is that its effect shall be *to concentrate the pupil's attention on the object being studied and its relations,* rather than upon his language, his manner, the degree of success he is attaining, the effect upon his mental development, or the impression he is making. The artistic device is one that leads the pupil to become objective, to lose himself in the object and its relations.

The teacher is assumed to know that knowledge is not the end, but that inspiration, insight, character, constitute the end. Still, this is not to be the attitude of the pupil in the recitation. The device should aid him in becoming engrossed in the object being investigated.

This characteristic of device is based on the idea that all true development in the pupil is due to the concentration of his interests in something which seems to be other than himself. The doctrine implied in this function of devices is self-estrangement. (*Philosophy of Education,* by Rosenkranz, pp. 27-28.) Self-estrangement is the second stage in the law of the self. The aim is to enrich the mind of the learner by having the strange object become familiar. Thus the central characteristic of all devices rests upon the total process of consciousness in that it assumes a potential or

unspecialized condition in so far as the strange element in the object is concerned, stimulates directly a concentration upon the alien feature of the object and thus contributes to the enrichment of the self which returns from the estrangement.

The nature of the central characteristic of devices makes it evident that they should harmonize with the following thought:

a. That the ideal in education is *the total experience of humanity* and not merely knowledge. It is not enough for the pupil to gain a knowledge of the main facts concerning the Emancipation Proclamation. The aim must be to have him experience, to a degree, in his particular life, the total process of the race in objectifying itself in that event.

b. That the change or determination to be brought about in the child is to be *self*-determination. His attitude must not be that of passivity. His initiative and choice, his modes of expression and explanation, are to be given encouragement as fully as the development contemplated in the lesson will permit. The tendencies to inquire and to test are to be fostered. For example, he is to be given freedom from the text by a series of devices that will develop the power to wrest meaning from the text. Otherwise he will become passive. The ability to grapple with a difficult sentence or paragraph and to interpret it by an intelligent process of study is an important form of *self*-determination.

c. That the pupil's process or method in his development is at once *negative and positive.* It is the renunciation of inaccuracy and caprice in any given instance and the active reproduction of the positive experience of the race in regard to the same instance. For example, the pupil may have the habit indicated in the following: "If any one wishes to read some one of a number of books and they can

find no time to read them they will become discouraged.'' To establish the pupil's education in regard to the appropriate language in this case requires both a negative and a positive process, and the latter is in harmony with the culture of the race. This negative and positive process is essential in all aspects of education. To be educated by a study of the Tories of the Revolution, their negative and their positive traits must be understood. To obtain a true development from an investigation of a virtue, as truth-telling, of a church service, as a prayer-meeting, of the history of a political party, the process must be one which brings into consciousness the negative and the positive.

d. That the teacher must *identify himself as fully as possible with the pupil* in his struggle to know the object being investigated. The pupil has his dim vision, his partial insight, his separative attitude, his distrust of his own powers, his dependence upon words.

The teacher must reproduce these mental conditions in his own consciousness as they are manifested from time to time in the lesson. Then he must project them and identify them with the pupil, thus realizing strongly within himself that they are actual conditions of the pupil's mind. He must finally vividly think these conditions as possible in himself under similar conditions. Thus he has identified himself with the pupil, and is in *sympathy* with him. This enables the teacher to appreciate the pupil's failures and successes, and to appear as a *co-seeker* of truth. Teacher and pupil become, in a certain sense, comrades in a quest for the unknown.

e. That the central or organizing principle of the branch of study to which the subject-matter belongs, and the process of consciousness suggest the order and the concentration of devices. For example, in the study of the Emancipation Proclamation there should be a concentration

of devices to develop a knowledge of the outward event, of the mental attitude giving rise to it, and of the mental attitude succeeding it. In the study of each of these three aspects there should be a concentration of devices to awaken an indistinct knowledge of the aspect as a whole; a clear knowledge of the distinctions within it, and of its systematic unification upon its characteristic or dominant attribute.

CHAPTER VIII.

PRINCIPLES OF TEACHING.

From time to time reference has been made to various pedagogical principles, particularly in connection with the discussion of The Analysis of Knowing. At this stage, however, it is deemed advisable to turn attention to various pedagogical principles based, not merely upon the nature of psychological activities, but also upon the aim of life and the nature of the branches of study. It will, no doubt, be admitted that the most comprehensive central principle of education is expressed in the statement that *the mind is self-determining*. This means that the mind, in the beginning of its existence, is without definite habits and tendencies and that gradually, as it adjusts itself to the environment, it gives to itself certain characteristics of knowledge, certain modes of emotional response and certain forms of choice.

To say that the mind determines itself is to assert that it gives to itself particular tendencies of action. At first the mind is potential, that is, capable of acting in any one of many forms, but by responding in a particular way to a particular stimulus, it determines itself in that mode of action. It gives to itself the characteristic of being more inclined to that kind of activity than to any other. Self-determination of the mind is, therefore, at first, potential, a general capacity for many kinds of action.

In the second place, this general capacity becomes specific. By this it is meant that the mind constructs in itself certain particular forms of activity. These become, as it were, distinct, habitual processes. Among these determinations are the processes of sense perception, memory, imag-

ination, conception, etc. The condition of existing in any one of these kinds of activity is the second aspect of self-determination.

Common observation, however, shows that if the mind producess in itself any special form of activity there results a tendency toward that form. Thus as life proceeds the mind acquires definite tendencies toward action. These constitute the final aspect of determination.

Determination in the mind is called *self*-determination because the energy of the mind is a factor in deciding its own condition. Environment does not determine everything. It does not *cause* the different mental changes. Environment is merely a stimulus. Upon the existence of this stimulus, the mind may, by its own energy, create in itself a corresponding particular condition.

The general nature of the principle of self-determination has been referred to on pages 154-155. Growing out of this central principle of education there are various subordinate principles. The leading ones among these are briefly cited in the following:

1. Without *attention* there can be no adequate education. What is the nature of attention? It is a mode of psychical activity belonging to all conscious states. Every conscious state consists of elements, because the objects of which a person is conscious are very complex. Even so small a thing as a child's ball is complex, for it possesses form, size, color, smoothness or roughness, hardness or softness, distance, direction, etc. Any single mental state denoting this single object is complex in that it possesses various elements denoting the various parts or attributes of the object.

Is the whole act of consciousness attention? By attention is meant *the most active element* of a conscious state. In different terms, *attention is the focus of consciousness.*

In every mental state the mind is attending with definite energy to some one aspect of the object or to some one object among many, while it is in a faint way noticing the existence of other attributes or other objects.

This most active element in a consciousness, namely, attention, is at first synthetic because it seems to denote the object as a whole. But it soon becomes analytic, since the attention is centered now upon the color, now upon the size, now upon the distance, etc.

There is also an organized synthetic attention, in that the mind having discriminated for example, two characteristics of the object gives attention to their unity, that is, to the oneness of the function they have in the nature of the object.

For example, a person in examining a water pitcher may attend at one time to its handle, at another time to its lip, at another time to the shape of the bottom which enables it to stand firmly upon a flat surface. During all this process the attention has been analytic. It now becomes synthetic, however, because the mind gives strict attention to the fact that all three of these characteristics are in harmony, when considered with reference to the use of the pitcher. Since the education of the child rests upon attention and his education consists in the acquirement of the power of attention, the teacher should understand the central nature of attention, the synthetic and analytic aspects in the process and *guide the work of the recitation in harmony with it.*

2. In the process of educating a child concerning any object or event, *the whole* of the object or event *should,* in so far as practicable, *be placed before him in the beginning.* This harmonizes with the first stage of self-determination because this device stimulates in the child an indistinct notion of the object as a whole. This is necessary

in order to prepare him to understand the relation of the various parts and attributes that may be discovered afterwards. In obedience to this principle, the child should examine all of a poem or all of a division of it, all of a paragraph, or all of a problem before turning special attention to any given part or characteristic.

3. *The original feeling* which an object stimulates in the person who is investigating should be changed gradually *into clear knowledge.* When one begins to examine any object, as a poem, the voyage of the Mayflower, a part of speech, etc., he has an indistinct feeling of the meaning which it exhibits. The object should be analyzed and specially studied in all of its various aspects so as to change this instictive feeling into definite knowledge. All instincts, as instincts of behavior, impulses toward charitable action or impulses toward industry should be changed through work and study into definite ideas. If a parent, a teacher, or a person engaged in any of the vocations of life, acts mainly upon instinct, even if the instinct is a true one, his action is unreliable. Only when feeling and instinct are grounded in a clear knowledge of the nature of the act which manifests them is the result reliable.*

The following show, in poetic form the transition from indistinct feeling or impulse to clear knowledge.

"May that which works and lives, the ever-growing,
In bonds of love enfold you, mercy-fraught,
And Seeming's changeful form, around ye flowing,
Do ye arrest in ever-during thought."
Goethe's Faust, *The Prologue in Heaven.*

"Over his keys the musing organist
Beginning doubtfully and far away,
First lets his fingers wander as they list,
And builds a bridge from Dreamland for his lay:
Then, as the touch of his loved instrument
Gives hope and fervor, nearer draws his theme,
First guessed by faint auroral flushes sent
Along the wavering vista of his dream."
Lowell's *The Vision of Sir Launfal:* Prelude I.

* See "A Study of Child Nature," by Elizabeth Harrison.

4. All educational work should be regarded as unsatisfactory *if the distinctions* made by the pupil concerning the subject being studied *lack clearness.* Nothing aids more fully the true comprehension of an object than the distinct idea of its various parts and attributes which can be made by abstracting each and making a careful study of it as it seems to exist in itself. In obtaining this distinctive knowledge the attributes or parts which are being studied should be closely compared and even more closely contrasted with the other attributes and parts. It should be a point of interest to both teacher and pupil to discover two things that are so closely related as to require special attention to discriminate them. Sometimes, for examples, it is said that a certain law is "null and void." Just what is the distinction between the objects expressed by these two words?

5. *In the discovery of distinctions the child should have an orderly process.* It is meant by this that the object being presented should be distinguished, first, into its predominant divisions, and then these predominant divisions should be sub-divided. These smaller divisions should be then further subdivided. For example, in studying the industries of the New England states it would be inartistic work to begin by discovering all of the characteristics concerning the people as engaging in the business of shipping. The distinctions should be made first rather in order to show that they were engaged in shipping, in manufacturing, in mining, in agricultural work, etc. This principle it is evident relates to the second stage in the process of self-determination.

6. The distinctions that are to be considered in connection with any object or subject should, of course, be *adapted to the pupil's stage of development.* Many relations would be shown concerning the voyage of the Mayflower in the eighth year grade that would not be considered in the fifth year grade, provided this event should be

one of the subjects taught in the fifth year grade. In the later grades when studying United States History, attention would be given to the characteristics in the government which adapt it to a people desiring self-government. Probably this relation would not be considered in the earlier grades. The more simple relations would there receive attention in that the work would be centered upon the less complex events in the life and government of the people.

7. The concluding work in dealing with any subject, as, for example, the American Revolution, is to lead the pupil *to decide upon the central characteristic* and then *to think out the degree to which all the other characteristics manifest this central characteristic.* In studying the American Revolution he would become aware of many distinctions. Some one of these is the predominant characteristic of the whole event. This predominant characteristic, after be-discovered, should be shown to be predominant by having it appear that each of the other characteristics is this predominant characteristic in a special form. This process of thinking is a manifestation in the pupil of the third stage in self-determination.

8. When any object or event being studied has been learned or rendered subjective, in the form of idea, feeling or volitional tendency, *it should then be made objective* in order to accomplish two things. The first is that of making the process of knowledge complete. The process in knowledge is never entirely complete until the child has expressed in some way the psychical condition which has been produced. The second is that of enabling the teacher to test the accuracy of the pupil's thought concerning the object which has been studied.

This principle is intended to emphasize the importance of *the motor factor* in education. It is therefore the basis

of manual training, drawing, written examinations, oral recitations, etc.

The total activity is as follows: The child goes through the process of gaining a knowledge of the object which has heretofore been alien or objective to him. That is, he becomes aware of it, feels concerning it, and has volitional tendencies in regard to it. He must then study out some mode of exhibiting the thought, feeling, etc., to others. This psychical state may be manifested in drawings, water colors, oral expression, written examinations, etc.

Complete education includes contemplation, or thinking out the nature of a thing, and objectification or revealing in actions, words, writing, etc., the thought that has been gained in the study of the thing. Dante reveals these two sides of education, the merely contemplative and that which includes contemplation and manifestation by speaking of Leah and Rachel:

> "Know ye, whoever of my name would ask,
> That I am Leah: for my brow to weave
> A garland, these fair hands unwearied ply.
> To please me at the crystal mirror, here
> Here I deck me. But my sister Rachel, she
> Before her glass abides the livelong day,
> Her radiant eyes beholding, charm'd no less,
> Than I with this delightful task, Her joy
> In contemplation, as in labor mine."
>
> Dante's *Purgatory*, Canto XXVIII, lines 101–109.

If, after explaining a given thought in the class, the teacher should ask, "Do you understand?" and the pupil should reply by saying that he does, this principle requires the teacher to say further, "Show what you see," or, "You may explain." It is not at all unusual to have certain defects in the thinking of the pupil revealed by this attempt to explain it. Even if this does not result, the thought will be made more prominent and more exact by the expression.

The reply in a complete sentence is not merely for the purpose of securing practice in language. The complete

sentence reveals the relation of the attribute to the object, and in consequence, *one important function of the full statement is to indicate whether the pupil has the true view of the relation.* For example, the teacher having explained a certain thought in physiology may ask, "What does this imply?" and the pupil may answer, "It implies nervous action." "What nervous action?" the teacher may continue. The reply to this may be, "The action of the neurone." A further question may be, "The action of what neurone?" To this the pupil may answer, "The neurone in the spinal column." This will reveal an error in the thought of the pupil, because the true answer in the supposed case would be, "It will denote the action of the neurone in the cerebral cortex."

9. When the pupil is about to enter upon the consideration of some new subject, as, for example, the minerals of Indiana, or the birds of his own county, he should *free his mind from existing feelings, purposes or ideas that are not of a nature to promote a clear knowledge of the new subject which is to be investigated.* This is in order to render effective the specific act of knowing the new truth. It also promotes the appropriate feelings and tendencies toward choice which belong to the new knowledge. This relates to the second aspect of self-determination, namely, that of establishing in the self a definite, effective psychological condition, in harmony with the object being studied.

10. There should be *a gradual increase in attention to the relations* of objects as the child progresses from grade to grade. This is especially true in regard to the relation indicated by the word "why." It seems an incorrect educational doctrine to assume that the child should for many years consider objects only, disregarding their relations. In the beginning grades simple relations should be considered, in the immediately succeeding grades, relations that are

somewhat more difficult; in the still higher grades relations that are still more difficult. It was Agassiz who said that objects considered apart from their relations are stupid things. The tendency to consider objects as entirely separate things is already too strong when the pupil enters school. Little by little he should be led to see the relations within the object itself and the relations of the object as a whole to other things. The important thing is to grade the process of discovering relations, but all stages in school work should deal with relations of some grade of difficulty.

11. Sense-perception furnishes the minimum of truth. This is not usually held to be the case. Many people think that a direct examination of objects through sense-perception gives the deepest and most prominent truth concerning the object. There should, of course, be no effort to minimize the great importance of this direct examination. It should be seen, however, in its true relation. It is to furnish materials merely for the discovery of deeper truths which are to be learned, not through sense-perception itself, but through higher forms of mental activity. Memory, even, gives a deeper truth than sense-perception, because it makes the individual acquainted with his life as it bears upon both the present and the past. Sense-perception does not make the pupil acquainted with the essential realities. This principle concerning sense-perception hints to the teacher *the graded series of activities in knowing.* Memory does not reveal a truth as fundamental as that given by imagination. Imagination does not make the person acquainted with a truth as fundamental as that given in conception, etc. This is the basis of the distribution of time and emphasis.

12. The process in the cultivation of sense-perception involves, in the first place, the examination of the object as a whole. This gives the basis for the discovery of the

various distinctions in the object. One by one each of the attributes in the object is to be given distinct attention and thus clearly known as a thing in itself. Finally each of the attributes and parts distinguished is to be examined in its relation to the central meaning in the object.

This makes it evident that the power of the child adequately to sense-perceive an object depends upon the clearness of the ideas he already has. The greatest aid in enabling the child to perceive with rapidity and accuracy the object he is to examine, is to aid him in *rendering his idea of the present object explicit and accurate,* by the observance of this process.

13. As noted above, memory gives rise to a knowledge which is more substantial than that of sense-perception. This is because an act of memory requires more self-activity on the part of the mind and it requires greater attention to the past and the present in their relations. Sense-perception involves attention to the past, but the attention is rather sub-conscious. In memory the attention to the past in relation to the present is explicit and definite. This fact is the basis of *higher estimation of memory and of the incentive to make memory systematic.* (See p. 186.)

14. The sense in which the imagination gives a greater truth than memory, as previously noted, is as follows: In memory the object is regarded as merely particular and there is no hint of the general. Imagination, however, is a somewhat distinct movement toward the idea of the general. If the mind creates a state denoting a change in the characteristics of the object and at the same time regards the object as belonging under the same class that it did before it was changed, the inevitable result is to lead the mind to contemplate two objects in somewhat different form which receive the same name. That necessarily suggests the general.

Imagination also indicates more fully the self-activity of the mind, since it reveals greater freedom over the external stimulus. In memory the mind is strictly obedient to the stimulus which was present in the former act. In imagination the self feels free to produce in itself an image denoting a modification of the stimulus in obedience to its own interests. *This relation* of memory to imagination *should be carefully considered* by the teacher and *recognized in the emphasis given to the cultivation of the latter.*

15. *The tendency to idealize should be cultivated as an essential stage in the process of thought.* Idealization is regarded by many persons as a mere byplay in life. It is held to belong to the dreamer, but not to the worker. The teacher should know that all *thinking* is rendered impossible if the ability to idealize clearly is lacking. Idealizing is the process of imagining a present condition in a modified form. It is necessary, therefore, as a basis for discrimination. It is also necessary as a basis for feelings of satisfaction and dissatisfaction which lead from desire to choice. The chosen desired condition, when analyzed by the intellect stimulates activities adapted to make the idealized condition real.

The clear thinker is always a person whose power of idealization is strong. The teacher should therefore feel entirely free to lead the child into modes of study that will cultivate well grounded processes of idealization. It would be helpful while considering this subject to examine "Scientific Uses of Imagination," in "Fragments of Science," by John Tyndall. A valuable contribution upon the same subject is "The Imagination," in "Poetry, Comedy and Duty," by C. C. Everett.

16. The language activity, as explained on pages 195-199, is the process of producing and also of interpreting language. The second phase of the activity is termed in-

terpretation. The interpretative aspect of the language act is the first process in a reading lesson. The language activity as producing, must of necessity have been at work, however, in order to bring into existence the selection which is to be interpreted. The true reading of a selection, therefore, involves both the process of interpreting it, and, in a secondary way, the process of creating it. In fact, to produce in the mind the knowledge of any object is, in a certain sense, to re-create it.

It is an advantage to the teacher to know that the full knowledge of a selection in reading involves (1) the process of becoming aware of the language, the embodiment, the thought and the purpose and (2) the process of beginning with the purpose, which is the initial stage in the author's mind, and noting how the purpose leads to the selection of a definite thought, and then, in succession, how the thought selects and limits the embodiment and the language.

It therefore follows that *the final view of a selection* which has been studied in the reading class *is that of noting the adaptation of the language and the embodiment to the thought and purpose.* This is the artistic aspect of reading work. It can be regarded but slightly in the lower grades, but as the child advances in his education, this aspect should become progressively more prominent.

17. In studying a word or any other form of language, or in considering an attribute of an object, the important thing is to comprehend the reason for it. *The most advantageous mode of discovering the reason for an existing thing or attribute is to make the pupil conscious of the effects of its absence.* Let it be assumed that the teacher wishes to lead the pupils to understand the reason for the presence of the adjective in the language. This can be approached by work which will make the child conscious of the limitation or difficulty that would arise if no adjectives what-

ever were existing. He might, for example, be led to make the attempt to express his thought concerning even the most simple thing, under the regulation that no adjective was to be used. This would impress him with the important place it occupies in the language, and would equip him for a careful study of the reasons for its existence. In like manner, the intelligence which underlies any part of an object or any attribute of an object can be best shown by awakening the idea of the results which would necessarily accompany the absence of it.

18. It was said, on page 200, that the mind, when in the stage of the understanding, considers the various distinctions or traits of objects to be externally imposed. In order, therefore, to cultivate *self-direction* in the pupil, the teacher should endeavor to assist him to rise gradually out of the attitude peculiar to the understanding. This means that *the child should gradually begin to think of the activity in any plant, animal, or person as largely determined by the nature of that plant, animal, or person.*

Environment has, of course, a certain influence. It is to be regarded, however, as a stimulus. For example, the evils coming upon one must not be thought to be determined by the star under which he was born. This notion is admirably expressed in Act I, Scene II. of *King Lear*, by Edmund. This expression is:

> This is the excellent foppery of the world, that when we are sick in fortune—often the surfeit of our own behavior—we make guilty of our disasters the sun, the moon and stars: as if we were villains by necessity, fools by heavenly compulsion; knaves, thieves and treachers, by spherical predominance; drunkards, liars and adulterers, by an enforced obedience to planetary influence; and all that we are evil in, by a divine thrusting on."

The same idea is promulgated in Act I., Scene II., of *Julius Caesar*. Cassius, in speaking to Brutus, says:

"Men at some time are masters of their fates:
The fault, dear Brutus, is not in the stars,
But in ourselves, that we are underlings."

It will be an aid to the pupil to feel that excellent results of every kind, as well as evil effects, arise largely from the acts of the person affected; that each person, in a sense, works out his own salvation.

19. On page 201, it has been shown that the activity of understanding begins with the indistinct process known as apprehension. Rising through intervening stages of abstracting, discriminating, comparing, generalizing, and discovering the relation of cause and effect, the self finally becomes aware of *the structural characteristic* of the object. This is an important stage in the process of education. It adds greatly to the power of a person to be able to think of an object or event in relation to its structural characteristic. The poem called "The Child Musician," Harper's Fourth Reader, page 228, has as its structural idea the sense of monotony.

"He had played for his lordship's levee,
He had played for her ladyship's whim,
Till the poor little head was heavy
And the poor little brain would swim," etc.

In the poem, "To a Waterfowl," the structural notion is that of faith. In "Evangeline" the structural characteristic or formative idea, is woman's devotion. In the Constitution of the United States, the structural conception is the idea of "A government of the people, by the people, for the people." The artistic teacher has an instinctive sense that each object, whether belonging to inanimate nature, animate nature, or to human beings and their products has a structural characteristic which has given to it its various aspects. *This instinct made somewhat conscious would be a valuable guide* in all the details of school work, whether relating to instruction or discipline.

20. In all instruction leading to the formation of the concept, the teacher should remember that while the process of conception is, in its more superficial sense, a consciousness of *the set of common attributes* belonging to a class of objects, it is, in its more fundamental sense, a consciousness of *the producing activity* which gave rise to the objects and to all of their parts and distinctions. During the first six or seven years of school life, the work upon the general idea should usually terminate in the notion of the group of common attributes. As the higher grades are approached, however, the pupil should, little by little, be led to know, at least to a degree, that there is a creative activity which gives rise to the class. All this emphasizes in his mind *the importance of a process.* He begins to comprehend that the process is more important than its products. The object or product is merely a way-station in the process, because the process produces the object and then slowly removes it, producing another object in its stead. This notion of the process gives the key also, to the teacher's procedure in promoting intellectual and moral progress.

The self-activity of the pupil brings about, largely, his present intellectual and moral condition. This condition may be regarded for the time being as static, as an established condition of the self, or as an habitual mode of being. The same self-activity, however, naturally annuls this condition and produces a higher one in its stead. This locates responsibility in the pupil, mainly, and not mainly in his environment nor in his "stars" as indicated by such words as disaster.

21. The nature of the concept requires that the pupil should be led to see that the knowledge of each new object of a class *tends to enrich the content or meaning* of the class, and *also to increase the extent of the concept.* This is because the concept is the idea of the common creative

activity. If a person has a knowledge of the right-angled triangle and the scalene triangle only, his notion of triangle-producing activity would signify only the activity capable of producing these two kinds. If he afterwards becomes acquainted with the nature of the isosceles triangle, two things have occurred: (1) he discovers that the activity which produces triangles has a capacity that he was not before aware of, (increase of content), and (2) he also knows that the *extent* of the class *triangle* has been enlarged. It gives vitality to education to have the pupil feel as he progresses from grade to grade that the discovery of every new object and event makes him acquainted with new capacities in the creative activities and with an enlarged extent of the classes.

In the old notion of the concept, namely, that it signified merely the common attributes, the discovery of a new object under the class was said to increase the extent of the class but to decrease its content. If this were true, as one's education progressed his knowledge would become more and more empty.

22. Education seeks to render explicit the concept which the child has constructed. This is done by *developing the thought of the concept into a series of judgments.* These differentiating judgments express *the details* of the thought denoted in the concept. On the assumption that the concept is that of the island, it can be rendered clear by leading the child to express in various sentences all of the different essential thoughts concerning the island. This is really the analysis of the concept and it results in clearness.

23. It has been shown on page 216 that the fundamental forms of the sentence are, those that express the immediate judgment, the conditional judgment and the definitive judgment. *This indicates their order of difficulty and hence the order, in general, in teaching them.*

The immediate judgment is expressed in a sentence which explicitly denotes only one relation, namely, the relation between the subject and the predicate, as, *The ground is wet.* In taking up the work under sentences various examples of this class should be considered before those expressing the conditional judgment, as *The ground, if it has rained, is wet.* In sentences of this second kind, the child is required to be acquainted not only with the relation between the subject and the predicate, but also with the relation of this unity to a certain condition.

The sentences which express definitive judgments should be the culminating work under the sentence, since they are sentences that express, in a complete way, the exact nature of the object which is denoted by the subject of the sentence. This evidently requires a higher grade of thought than that necessary to deal with the other forms of the sentence, as may be realized by analyzing the process in creating the thought expressed by the following definitive sentence: *A square is a parallelogram having four equal sides and four right-angles.*

24. The teacher should gradually *learn to look upon the predicate as expressing an action or the result of an action.* For example, in the sentence, "This Doric column is fluted," the predicate expresses the attribute of "being fluted," but that attribute is *the result of the activity* concerned in producing Doric columns, i. e., ability to produce the attribute *fluted* is one of the capacities of the activity which produces Doric columns. The attribute in the predicate always reflects the capacity of the activity which produced the object that is expressed in the subject. If the teacher is fully possessed of this thought, it will be an advantage in showing the child *the close relation of the universal* expressed in the predicate *to the particular* denoted in the subject.

25. The copula should be regarded by the teacher as *denoting an identity which is fused, undifferentiated.* That is, the person reading the sentence, and often the one who produced it, *is not conscious of the relations on which the identity is based.* It would be easy to say, for example, "The Doric column is fluted," and at the same time be unable to explain on what grounds it is judged to be fluted. The act of reasoning is required in order to become distinctly conscious of the basis of the identity between the object and the attribute. Then the copula no longer denotes a fused unity. The consciousness of this truth will tend to prevent satisfaction with mere statements by teacher or pupil. There will be an inclination to show the basis or ground for the assertion. This will of necessity render teaching more thoughtful.

26. The pupil in inductive and in deductive reasoning *should be led to employ consciously, the differentiated psychical process rather than the fused logical process.* In the logical process he makes three assertions, as, "All grains of corn have a pericarp. This is a grain of corn. Therefore it has a pericarp."

The differentiated, psychical process in deductive reasoning, for example, involves five mental stages instead of three:

a. The child becomes aware of the object as a whole. He knows it as an object distinct from other objects, but he has not a clear knowledge of the distinctions in it itself.

b. He abstracts or isolates the attribute "having a pericarp," and inquires whether this object has that attribute.

c. On the basis of the shape of the object and other known attributes it is classed as a grain of corn.

d. The mind then analyzes this class in order to dis-

cover the various attributes, and among these finds the attribute "having a pericarp."

e. The assertion is then made that this object, since it belongs in the class, has a pericarp.

27. When the process of the pupil in reasoning is that of identification, *his limitation is that of not fully knowing the nature of the attribute which is expressed in the first judgment.* Let it be assumed that the first judgment is, "This flower is red." The word "red," then, expresses the attribute denoted in the first judgment. The difficulty in the process of identification is that the child does not differentiate this attribute, that is, he does not think clearly in regard to the different objects in which it is found. Since he does not notice this, he is willing to give as the second sentence, "The geranium is red." This leads him to the conclusion, "This flower is a geranium." When it is said that the pupil must *fully differentiate* the attribute of the first judgment, the thought is that he should reflect carefully concerning the presence of red in flowers. If this were done, greater care would be exercised in making the first assertion. All processes of identification, that is, of inaccurate induction and deduction, are based upon the failure of the pupil to carefully examine the attribute before expressing it in the predicate of the first judgment.

28. When the pupil has reached the stage of development in which he consciously considers to some extent his own process, he should be led to note that *in each act of induction and of deduction there is both separation and unity.* For example, when, by a process of deduction, the pupil has become aware that this grain has a pericarp, he has identified the particular object with a certain general attribute, and by doing this he has separated the object from all objects that do not possess that attribute. Also, when having examined a number of grains of corn, the induction

is made that all grains of corn possess a slight testa, there is analysis in isolating this attribute from the other attributes of the object, but there is also synthesis in that this object with all the other objects of the class are unified, and further analysis in that they are at the same time made separate from the objects of all other classes. Attention to these facts would tend to make the pupil thoughtful in his work.

29. In order to give the pupil real ability in his work, he should be led to establish *the habit of examining new and varied examples* as a basis for the discovery of the general principle known in the act of induction. It would not be sufficient to examine a few grains of corn in order to feel justified in asserting that grains of corn possess a testa. Many small grains should be examined, many larger grains, those that are red, those that are whitish, those that are yellow, etc. The same principle should control the child in dealing with historical facts, with events in literature, in language, etc.

30. *The habit of seeking examples of the general truth* which has been discovered, should be firmly established in the pupil. For example, after examining a large number of grains of corn and finally becoming conscious of the general truth that grains of corn possess a testa, the pupil should be encouraged to verify this in the examination of many new examples. This same practice should prevail, also, in regard to historical events, geographical facts, facts concerning language, etc.

31. *The process in sympathy is a suggestive guide* for the teacher's work in the school. This may be shown by noting the process:

a. Let it be assumed, for example, that a person is in the mental condition called *resentment* on account of a certain peculiar evironment which he has.

b. This mental condition is objectified in his countenance, words, actions, etc.

c. An observer, through sense-perception, becomes aware of these manifestations.

d. The observer reproduces in himself the mental condition which he has usually been in when these external manifestations were put forth by him.

e. This gives him an opportunity to examine closely the mental condition and to become aware of its nature. As he does this, he knows that the mental condition is not really his own now, but that it is the actual condition of the other person.

f. As he reflects upon this, he becomes aware that such a mental condition, under the stimulus of such an environment, is possible to him. Instantly there arises *a feeling of identity* between him and the person exhibiting resentment. This feeling is called sympathy, (syn, with; pathos, feeling). Sympathy is, perhaps, the fundamental feeling of the self and bears the same important relation to the emotional nature that attention does to the intellectual activities. If the teacher clearly understands the process in sympathy, it will enable him to stimulate sympathy in himself and in the child much more fully than could be the case if the process were not understood.

It is evident that sympathy and also its opposite, *antipathy,* are the social feelings which arise when the mind, in considering itself in relation to others, is emphasizing its attention to the others. If the emphasis of attention in this consciousness of self and others is upon the self, the feeling stimulated is *pride* or *humility.*

The ideal, according to Aristotle, is the exercise of function in the interest of the social whole and of the essentials of the individual. To live in harmony with this ideal is difficult. As the person becomes conscious that he has

potentiality of this harmony, or that he is actually in harmony with the ideal, the condition for the feeling of pride is present; if he is conscious of the opposite, he will experience the feeling of humility.

To be true elements in the development of the self, pride and humility must arise from the contemplation of the present condition of the self in relation to the adequate social ideal.

They both become egoistic or negative if the objects contemplated are particular attainments of the self in relation to similar particular attainments in others.

In Dewey's *Psychology,* pages 334-335, certain complex social feelings are mentioned, as *envy,* involving antipathy and the egoistic form of humanity; *jealousy,* involving sympathy and the egoistic form of humility; *malice,* having as its elements antipathy and the egoistic form of pride; *covetousness,* consisting of sympathy and the egoistic form of pride. The idea of the nature of these complex feelings is a fruitful suggestion as to the mode of dealing with them in education.

The classical poetical portrayal of these feelings, particularly of pride and envy is found in the Purgatory of Dante's Divine Comedy. The poet's artistic use of the ideal and its opposite in the education of the inhabitants of each terrace is especially noticeable.

Sympathy and all its kindred social feelings are based upon the relation of self to others, but their reference is to an ideal which is the fundamental nature of both self and others. This is the social ideal as given by Aristotle which involves the freedom as to intellect, feeling, will and bodily capacities. This freedom includes the disposition to bring about a like freedom in others.

The educational procedure in cultivating sympathy and the other forms of social feelings that are positive, or in

freeing the child from pride, envy and those other forms of social feeling that are negative consists,

a. In making clear to the child, gradually, that ideal by which each individual life is to be measured.

b. In bringing into clear consciousness the nature of the particular act.

c. In measuring this act by an ideal.

The essence of the principle is that each one of these feelings is to be cultivated or to be repressed by instruction in harmony with the process of the intellect which produces the ideas that are the basis for the feeling.

32. All education is based upon *faith*. The mental condition known as faith implies that the individual is distinguishing between a real condition of which he is distinctly conscious, and an ideal condition which he has never realized, and never known to be realized. To have the mental condition known as faith he must be conscious that the present condition which seems very real does not have that stability and permanency, and that degree of reality which the ideal has. To feel that the ideal is more real than the actual, is to be existing in the psychological state of faith. This is an important attitude, because it always prevents a person from excusing erroneous action on account of the fact that it is in harmony with his nature. A person of faith comprehends that his present actual nature is to be transformed gradually into a higher condition which is his real or ultimate nature. A person must act in harmony with the first only to the extent that he desires to transform the first into the second. Jesus meant this condition in saying, "He that loseth his life for my sake, shall save it."

33. The process of education should stimulate and continue a condition of *hope*. A hopeful attitude is a substantial basis for education. To ensure this condition the

teacher must be aware of the intellectual conditions that are the basis of hope.

When does the psychological condition called hope arise?

a. The person must be aware of an idealized condition.

b. This idealized condition must be one that he is interested in. That is, it must involve in a definite way that identity with the plans of the self which will stimulate interest.

c. The person must also discover in the present environment certain indications that this idealized condition will finally be made real. Hope is based on the notion of an idealized condition which is strongly allied to the self and the realization of which is hinted strongly by existing conditions. If the teacher desires to awaken hope in the child she must make him distinctly conscious of this idealized condition and of its identity with his own interests. She must then lead him to notice all the indications of the present environment that sustain the notion that this idealized condition will finally come to be real. The mind of the child having been made aware of these things will necessarily enter into the condition of hope.

34. Education involves, at every stage, some degree of *discouragement* and the necessity for its removal. What knowledge would enable the teacher to free the pupil from the condition of discouragement? The knowledge of the intellectual basis of discouragement will suffice for this. In order to become discouraged the pupil must be aware of a certain work to be done. He must also be aware that he is putting forth well directed efforts for the accomplishment of this work. In addition to this, he must be conscious that these well directed efforts are failing to solve the problem. Under these conditions, he becomes discouraged.

How can the teacher make him free from this condition? By emphasizing three things:

a. He must first make clear to the pupil the exact nature of the problem which is to be solved and show him that the difficulties are not so great as he had supposed.

b. The pupil is to be made more fully acquainted with his own equipment for the work.

c. He must be led to see that his well directed efforts have been already successful, to a degree.

In every case of discouragement it would seem that these things can be accomplished by the teacher. It requires, of course, on the part of the teacher, careful reflection concerning the conditions.

35. *Cheerfulness,* like hope, is a great incentive in education. How can this condition be cultivated in children? It may be cultivated if the teacher understands the nature of the feeling itself and the psychological tendency it involves.

Cheerfulness always relates to a change of conditions, or to new conditions. If a person is cheerful under these new conditions, it is because his tendency is to discover in the new conditions characteristics that are desired. For example, it may be a rainy day with surroundings that are usually termed dismal. The cheerful person, discovering the undesirable characteristics, will note the things in the present condition of weather that are favorable. This disposition will grow by being exercised upon different objects and conditions until it becomes a habit. The process in arousing the feeling is thus made clear. There should be an attempt in connection with any object or thought being studied *to throw the emphasis of attention upon characteristics that are beneficial* or that contribute to the interests of those attending to the object or condition.

36. A negative influence in the educational process is

the feeling of *sullenness*. Can it be banished by any well thought out process?

The mode of dealing with any feeling is based upon the knowledge of its intellectual basis. A child is sullen under certain conditions only. These are as follows:

a. He believes that he has been wronged by some other person; that is, by teacher or pupils.

b. He knows that no acknowledgement of the supposed wrong has been made to him and that no other form of atonment has been made for it.

c. He is aware by the actions of the teacher or the pupils that an effort is being made to treat him as if no wrong had been done. There seems to be an effort on the part of those who have wronged him to ignore the wrong act and to assume the friendly relations that formerly existed.

The existence of this complex state of the pupil's intellect, stimulates the feeling of sullenness. It is a definite feeling based upon a definite intellectual condition.

In order to make the child free from the feeling of sullenness, *the teacher must deal with these three elements of knowledge that have been indicated.* If no wrong has been done toward the pupil there must be careful work to show that this is the case. If wrong has been done, this must be acknowledged and atoned for as fully as possible.

37. Wonder is the form of love which relates to truth. It does not relate, however, to truth which has already been discovered, although it may be awakened by the undiscovered characteristic of that which is exceedingly familiar. Wonder has been said to be the attitude which the emotional nature spontaneously assumes in the presence of a world offering many incentives toward the increase of knowledge. It is really based upon the assumption that

the unknown object exhibits in some way the nature of the self.

The person who is in a state of wonder feels that the investigation of the truth in the unknown object will in some way, reveal him to himself more fully. It is a disinterested affection for truth, impelling investigation for the sake of the truth to be discovered and not for any selfish reason. If one seeks truth, not for the sake of the truth, but for the sake of gratifying his longing to discover truth, the feeling is curiosity instead of wonder. The educational significance of wonder is found in the fact that *it is based upon unknown characteristics in the object and upon the assumption that the nature of the self would be more fully known if the object were more completely understood.* This gives the key to the teacher for its cultivation. If wonder is absent from educational work, such work loses its vitality because this emotion is that which gives origin to and which continues the process of knowledge. The results of the educational process deprived of this element of wonder are forcibly shown in *Hard Times* by Charles Dickens.

38. Admiration is the form of love which is concerned with beauty, as revealed in both nature and art.

It is the outgoing of the self toward beauty which is already existing and also the tendency toward the production of beauty. It is that form of interest which was spoken of by Socrates as love for the birth of beauty.

Admiration is awakened by becoming conscious of the harmony or adaptation of a particular to the general truth which it exhibits. It can be given an important cultivation in school work especially in the study of literature and the other forms of art but it can be appealed to strongly also in the study of nature and in the investigation of spiritual growth.

39. In all ages *love* has been ranked with sympathy as a central emotional disposition. The intellectual basis of it should be clearly understood. The object or content of love is an ideal condition, i. e., an unrealized state. It is said to be the emotional tendency of the self toward an object regarded as other than the self. This implies that the self is disregarded. In this disregard lies the essence of self-sacrifice. In the interests of an ideal or unrealized state, there is a surrender of the present self as to its immediate aims and advantages. The true object of love is *a developed condition of the self or of another.* One of the most important forms is the love of knowledge which has always been a powerful interest in the lives of people. This is given admirable expression by Socrates in Plato's dialogue entitled, "The Symposium." An extreme example of its strength is shown in "The Grammarian's Funeral," by Robert Browning. In this latter case the object of love seems to be a self having a perfect knowledge of external forms of language. In every case, however, love seeks the realization of an ideal condition in the self, in others, or in the environment. This ideal condition should always be superior to the present existence of the person who is manifesting love. It is upon this relation of a superior ideal to a present self which is to be sacrificed, to a degree, that the teacher can base his work with the pupil. In Luke IX-24 it was said, "For whosoever will save his life shall lose it; but whosoever will lose his life for my sake, the same shall save it." The words, "for my sake" denote the ideal. The word love is the central utterance of all sacred writings. Among the many beautiful expressions in Jewish and Christian Scriptures these may be noted:

Canticles, VIII, 9: "Love is strong as death."

Canticles, II, 4: "He brought me to the banqueting house, and his banner over me was love."

St. John, XVII, 23: "And that the world may know that thou hast sent me, and hast loved them, as thou hast loved me."

St. John, XVII, 24: "For thou lovedst me before the foundation of the world."
St. John, XIV, 15: "If you love me, keep my commandments."
I John IV, 8: "He that loveth not, knoweth not God, for God is love."
I John IV, 11: "Beloved, if God so loved us, we ought also love one another.
I John, IV, 19: "We love him because he first loved us."
Jeremiah XXXI, 3: "Yea, I have loved thee with an everlasting love."
Psalm CXXII, 6: "They shall prosper that love thee."
II Corinthians, XIII, 11: "The God of love and peace shall be with you."
Proverbs X, 12: "Love covereth all sins."
Proverbs, XV, 17: "Better is a dinner of herbs where love is, than a stalled ox and hatred therewith."

In John IV., 8, it is said that "God is love." This indicates that God is conscious of himself as manifested in all objects and returns the manifestion with equal ardor as is shown in Dante's Purgatory, Canto XV., lines 64-67.

"The highest good
Unlimited, ineffable, doth so speed
To love as beam to lucid body darts,
Giving as much ardor as it finds."

This universal relation of love is shown by Francis W. Bourdillon in the following:

"The night has a thousand eyes;
The day, but one.
So the light of the whole day dies
At set of sun.

The mind has a thousand eyes;
The heart, but one.
So the light of the whole life dies
When love is done."

What is the result "when love is done?" There is no further outgoing of the self toward the beauty of a sunset, toward work of art, or toward a fine deed. The love of country is gone. There is no longer any care for friends or relatives; no care for the stranger and the alien. There is no love for one's vocation, for his ideals, for the development of himself or others; no desire for knowledge.

The extent of this emotion is shown in The Symposium. It was arranged that those seated at the banquet table at Agathon's home, should, in the order seated, each in his own way utter an encomium on love.

Phaedrus spoke first and Socrates closed the addresses. Phaedrus referred to the antiquity of love and to its benefits. He noted among the greatest of these, the sense of honor and dishonor.

Pausanias was the second speaker. He distinguished between love for spiritual things and love for the physical.

The third speaker was Eryximachus. He also distinguished the spiritual from the physical love but he extended the empire of love through all things. It was, he thought, found at work not only in human beings and animals, but also in plants and even in the inanimate world. It was the harmony of opposites.

Aristophanes, who was the fourth speaker, regarded love as a desire for the whole. Anything which is incomplete and is seeking to acquire its total nature was impelled, according to his thought, by love.

Agathon's speech succeeded that of Aristophanes. He thought that all things which are done, are done in obedience to love and that wherever there is love there is obedience. He also traced obedience to justice and therefore regarded love as underlying justice.

In the speech of Socrates, however, there was made the really great contribution to the thought concerning love. He began by discussing its nature and showing that it had for its object, not the actual, not anything which is really existing. It is, as he said, the outgoing of the self toward an ideal. Its object is beauty, but not existing beauty. Love centers in the birth of beauty, that is, in the production of that which is beautiful, whether physical or spiritual. He traced it in its grades, showing that at first love is for one fair form; then for many; then for that which is common to them; it then rises to a desire for beauty of mind. From this, it ascends to an interest in the beauty of law and institutions. At last it centers in the beauty of that "ever-

lasting nature which is the cause of all things." Thus the philosophical insight of Socrates conceived love in its highest forms as the emotional outgoing toward universal beauty. Since the object of love is "the everlasting nature which is the cause of all," or absolute truth, it will be seen that love is kindred to both wonder and admiration, in that it is the stimulus to all fields of investigation in the world of beauty and in the world of truth, as well as in the world of morals or duty.

The educational value of understanding love is found in the emphasis it gives to the ideal; in the distinction which it involves between the ideal and the real and *the necessity for the surrender of much of the present for the sake of the higher ideal.*

40. Much has been said concerning interest and its relation to attention. Interest is the active outgoing of the self toward an object which is regarded as the self or as in identity with the self. It is closely akin to love, but it involves more fully the sense that the object upon which the attention is centered is the self. When one is in a foreign country and has been hearing for days and months the foreign language, the utterance of a single word of his own language immediately interests him because he is aware, although sub-consciously, that the object he is attending to is, in certain respects, the self. In order to interest a pupil in some object or branch of study, it is necessary merely for the teacher to make the child acquainted with the fact that the truths under consideration and the powers gained in the investigation of them are in identity with purposes of his own. That is the essential procedure in stimulating interest in the pupil. Every pupil has purposes of his own; there are objects or actions for which he cares. The teacher should study him enough to know what these objects are, and to know the actions or the fields of knowledge that the

pupil does not care for. *The identity between these and his favorite pursuits should be sympathetically shown.* The pupil's interest will then, necessarily, center in these activities or subjects, to a certain degree.

41. The process of choice involves as has been noted, a comparison of the desired condition with the aim of life. During the life of the race there have been many doctrines as to the aim of life or the Good. The prominent one has been pleasure. It is probable, however, that the only aim that can satisfy the requirements of life, is *freedom.* This word denotes a release from limitations. What things can be limited? Limits may be found in the intellectual nature, the emotional nature, the volitional nature and the bodily activities. A person grows in freedom as his thought becomes more rational, as his emotions become centered in higher and more refined conditions, as his choices come more and more to have as their content the habit of choosing freedom, and as his body becomes harmonious in its action with the spirit it manifests. True freedom in an individual requires that he should seek these forms of development in himself and in others equally. This notion of freedom gives an important chart for educational development. The aim of life is not merely to know, to have fame, to have position, not even to be sympathetic. Sympathy toward a person must be controlled by the notion of giving him freedom, i. e., one must be sympathetic toward a person to the extent that this sympathy will make him free from dependence upon others.

In the development of the notion of freedom, the first ideal was that freedom consists in the enjoyment of the maximum pleasure.

The second ideal was that developed by the Stoics. Their thought was that all of the external world is colored by the spiritual condition of the person and that the environment

is immaterial. Accordingly they regarded freedom as obedience to a universal law. Obedience to universal law is the good. The individuality of the person was to be sacrificed in behalf of the universal.

According to Plato, freedom consists in the subordination of the inferior nature to the superior nature. In the subordination of the appetite to reason, the virtue of *temperance* arose. In the subordination of the "spirited" nature to reason, there appears the virtue of *courage*. In the subordination of the appetite and the "spirited" nature to reason as comprehending the highest ideal, there arises the virtue of *wisdom*. In the obedience of all the lower elements to the rational nature in the measure that there is harmonious activity of the whole self in the pursuit of an invidual vocation for the interest of society, there arises the virtue of *righteousness*.

This conception of Plato's is practically the ideal of freedom as given above. Plato's ideal seems, however, to have been so distinctly separated from real life as to develop in later schools, into asceticism.

In Aristotle, the highest standpoint of freedom seems to have been gained. He did not regard freedom as consisting in subordination of the lower nature to the higher but rather in an obedience to an ideal which implied the largest possible social range. According to him, freedom is the exercise of function in the way to advance the interests of society and the higher personal interests of the individual. He based this thought on the notion that the individual is a social being by nature. This latter is the first thought concerning ethical freedom in the system of Aristotle. His second is that there should be ample means consisting of wealth, friends, time, opportunity, etc., for the realization of this ideal. The third principle of his doctrine is that the means should be strictly adapted to the

end, neither wanting nor in excess. This is his celebrated doctrine of the mean.

It will be observed that the notion of freedom given by Aristotle includes the idea of the full development of the intellectual, emotional, volitional and bodily nature of each individual, together with a disposition in the person to bring about a similar development in all others.

There have been many attempts since Aristotle's time to express the thought of freedom. Among those which are of a high standard, is that given by Robert L. Stevenson in "A Christmas Sermon."

"To be honest, to be kind—to earn a little and spend a little less, to make upon the whole a family happier for his presence, to renounce when that shall be necessary and not embittered, to keep a few friends, but these without capitulation—above all, on the same grim condition, to keep friends with himself—here task for all that a man has of fortitude and delicacy."*

John Boyle O'Reilly notes in poetical form the different ideals of life and his estimate of them, as follows:

"What is the real good?"
I asked in musing mood.
"Order," said the law court;
"Knowledge," said the school;
"Truth," said the wise man;
"Pleasure," said the fool,
"Love," said the maiden;
"Beauty," said the page;
"Freedom," said the dreamer;
"Home," said the sage;
"Fame," said the soldier;
"Equity," the seer.

Spake my heart full sadly:
"The answer is not here."
Then within my bosom
Softly this I heard:
"Each heart holds the secret;
Kindness is the word."

It is evident that the poet regards kindness as the ideal of life, but this has its limitations. One should manifest

* From "A Christmas Sermon," by Robert L. Stevenson, Vol. XV, Thistle Edition page 302. Title of volume: The Amateur Emigrants, Across the Plains, The Silverado Squatters.

kindness toward a person only to the extent that it will further his freedom. The true ideal of life is the great conception which is to make vital educational work, therefore it should receive the thoughtful consideration of the teacher. ** It would be valuable to study the conception of Robert L. Stevenson and of John Boyle O'Reilly in relation to the ideal given by Aristotle. An investigation of this nature would bring out the limited view of the different ideals mentioned in each of the two extracts quoted.

42. The teacher can with great advantage further the education of the child if she knows *the process in desire, because all true education must proceed in harmony with the desire of the child.* This does not mean, however, that the child's caprice should be the guide. Desire is not merely a feeling. It is a complex mental condition involving the intellectual, emotional and volitional aspects of the self. It assumes that some impulse, as, for example, the impulse to travel, or the impulse to understand the work in algebra, has been gratified. As this impulse was gratified, the person was aware of the activity which gratified it, of the impulse itself, and of the pleasure resulting from the gratification of the impulse. If at any future time this impulse arises, it is termed a desire. This is because the mere impulse has been interpenetrated by knowledge. The person knows or remembers the former activity, the impulse that was satisfied by it and the resulting pleasure. He also knows the present condition, that is, he is aware that the activity which satisfied the impulse is not now occurring and that the pleasure belonging to such activity is not present. Desire, therefore, involves a knowledge of a past condition and of an idealized condition similar to the past condition. The consciousness that at present the condition

** See "Spiritual Frontage," page 94 of "Afternoons in the College Chapel," by Francis G. Peabody.

is unrealized, necessarily gives rise to the affective elements of pain and pleasure. Thus desire is a complex mental state.

How may the teacher awaken in the pupil a desire for a worthy object or action? *The process must be in harmony with the nature of desire itself.* In the first place, the teacher must lead the child to remember the former impulse, the activities which answered to it and the pleasure resulting. He must then lead the pupil to realize that these conditions are not now present, but that they are possible. By stimulating these mental conditions in the child, the desire for the idealized condition will be created.

43. Education is incomplete, however, if it ends in desire. Complete education involves choice and habitual modes of choice. How can the child be led to choose? This process the teacher must understand. What is the first psychological process in choice? It is to hold in consciousness at the same time two or more desired conditions. This is the process of discrimination.

In the second place, each of these desired conditions must be compared with the ideal of life as a whole and the ideal in the person's special pursuit. The desired conditions must then be estimated as to their value in relation to the modes of life and of the special pursuit.

Finally, the person is led to assert mentally that the desired condition which is most in harmony with these aims shall be realized. This assertion is a volitional judgment and is called choice. *The education of the ethical nature must proceed in harmony with the process of choice.*

44. All educational work is, in a sense, the development of the child's conscientiousness. Little by little, under true educational influences he would become more conscientious. It is important, however, to notice that *conscience* includes more than mere feeling. It is often spoken of as

the voice of God in the soul. This makes it an extra factor in the conscious life of each person and does not seem to be justified by psychological analysis.

Hamlet says, (Act III., Scene I,) "Thus conscience does make cowards of us all." This is usually understood to refer to the emotional response in the form of remorse, but conscience includes the total range of psychological activities. It does not differ from other mental states, as, for example, from the activity of conceiving the nature of a triangle, except that its *subject-matter* is different. Conscience is concerned with conduct, with the relation of a particular act to an ideal.

The cultivation of it must be based upon its own process. It is, therefore, important to note carefully the process of conscience.

The first stage in a process of conscience is the apprehension of a worthy ideal.

This ideal is then held in consciousness over against the idea of a particular act of the individual.

This is succeeded by the process of choosing to perform the particular act.

If the particular act harmonizes with the ideal, the feeling of approbation arises. If it is out of harmony, the feeling of disapprobation is produced. It is this feeling which is spoken of as the stings of conscience.

It is seen therefore that the full process of conscience is intellectual, emotional, and volitional.

In the endeavor, therefore, to make the child grow more and more conscientious the teacher must seek *to make more clear to him worthy ideals, to give him the habit of noting carefully his particular acts in relation to these ideals, to cultivate in him the habit of choosing the particular act which is in harmony with the ideal* so that he may experi-

ence the feeling of approbation which belongs to the sense of progress.

To this end Polonius says (Hamlet, Act I., Scene iii.):

> "This above all: to thine own self be true,
> And it must follow, as the night the day,
> Thou canst not then be false to any man."

45. The universal or central element in behavior is obedience to an ideal or criterion. It is to be remembered, however, that all behavior is obedience to some ideal or criterion. *The first thing of importance in behavior is the possession of an adequate ideal.* Is pleasure an adequate ideal? Is the attainment of success in the way of the possession of wealth, of office, of reputation an adequate ideal? Is the Stoical ideal of an ability to possess one's self under adverse circumstances, an adequate ideal? Can any ideal other than freedom be adequate? Must not freedom itself be conceived as the development of one's intellectual, emotional, volitional and physical nature and that of all others equally? Freedom is the obedience to the law of one's social nature, for as Aristotle said, "Man is a social animal." In all educational work the teacher must regard this ideal, and say to himself, "This work in arithmetic, this work in grammar, this work in history, is to increase the child's freedom in the four respects mentioned, and among his tendencies is to be a desire to work for his own freedom and for that of others equally."

The second thing in obedience is to act in harmony with the ideal until such action becomes a habit.

46. *Growth in behavior is evidently, a passage from obedience to some external ideal, through obedience to a mere subjective ideal, to obedience to a criterion which is not merely subjective.* The obedience which is not merely subjective must be an obedience to an ideal which is reflected in the thought of humanity and corresponds to its universal

nature. This ideal is almost fully comprehended in Plato's conception of the subordination of the "appetitive" and "spirited" elements to the rational, but, probably, the only ideal which adequately represents the ethical nature, is Aristotle's conception of "the exercise of function devoted to wide social ends and permanent personal interests." This is the ideal of freedom. This truth can aid in the daily work of the school by stimulating the teacher to inquire whether his management of the school appeals to an external ideal, to some merely subjective state or to a freedom that belongs to the individual and to others equally. The test question is, "Am I training the child to hold before him the ideal of laboring for the intellectual, emotional, volitional and physical advancement of others and himself equally? Am I training the child so that he would be unwilling to increase his intellectual power if it decreased the opportunity of others for intellectual power?"

47. *Total knowledge of an object or action is an incentive to virtue.* As indicated above, it is sometimes held that the individual is injured by increase of knowledge if his ethical strength is not also directly educated. Was not Socrates correct, however, in holding that "knowledge is virtue," if he meant that an adequate insight into objects and events enables the person to discover that evil is always folly, and that virtue alone is permanently beneficial to all elements of the person's being? If one's intelligence is slight, he may unduly estimate the pleasure that belongs to evil acts considered in their isolation. If his intelligence becomes more complete, he will be able to understand that this apparent advantage in evil is very transient and that the final result, which is the result considered in relation to the whole social order, can be only negative and disastrous. Sometimes a person speaks of an "educated rascal." The word, "educated," as thus used is very limited in its ap-

plication. If the person were truly educated, one of the things that would be most plain to him is that it is folly only to engage in conduct that may be called rascality. It is only the partially educated person who engages in evil works.

48. The rules of a school are to be made by neither teacher nor pupil in the ultimate sense, since they are grounded on the nature of the organization itself. They belong to the organization, however, since they are found in the nature of the child who is to be educated. The regulation regarding promptness in attendance is really founded in the needs of the child. Possessed of this thought, the teacher will *lead the pupil to know that the rules of the school* are not externally imposed, but that they *are the outgrowth of his process of development.* If this thought is shared by both teacher and pupil, the external rules of the school could be formulated, to some extent, by the pupils themselves, and this formulation could become more prominent from year to year. This would arouse in the children the sense that they are self-directive. Progress in this direction should, however, receive the careful oversight of the teacher so as to free it from the influences of caprice. The cause of self-government in school has sometimes been injured by having the process begin at too early an age. The idea that the child is finally to become self-governing, should, however, be a guiding principle to the teacher and should be practically recognized at all times when such recognition promises to further the true development of the child and the efficiency of the school.

49. The regulations of a school that are not originally made by the pupils *should be,* in a certain sense, *re-created by them so as to make them their own.* In other words, they should be led to know the reasons underlying these regulations, even in the early grades, to a slight extent. As

they progress from grade to grade it should be the endeavor to have them comprehend the reasons under the regulations more and more fully. When a pupil knows that a regulation is reasonable because it helps his development, he adopts it as his own.

50. *The work of instruction in school should be so directed as to establish in the pupil only such tendencies as will reinforce the activity of rational institutions.* To lead a true life in the rational institutions means that one should be reliable in his statements, clear in his thinking, resolute in his will. It means that he should be obedient to the higher ideals of thought. Each institution, as the state, the family, the church, is assumed to represent the higher rational life of the individual. In order to make progress, the individual must harmonize his particular life with this larger life. Therefore, in the schools, the child should be given that information, those modes of emotional response and those habits that would equip him for effective, harmonious work in the institutions of society. It is evident that this principle bears directly upon both the second and third aspects of self-determination.

51. *The result of instruction in school should be a gradual increase of independence or self-direction in the pupil.* In his study of a paragraph or in his solution of a problem, he should work under the direction of the teacher in just that way which is best fitted to prepare him to accomplish the work with least aid from the teacher. The questions should be put in such a way as to make him self-reliant. They should require answers that can not be given by the immediate examination of the text. This principle emphasizes the fact that the self is not to be controlled by environment, but rather by its own nature.

52. *The necessary stimulus to education is the sense of limit.* The child will not be interested in studying the

nature of the adjective until he has been led to feel that without the power to use it he is hampered in some way. He will not be particularly interested in being prompt in attendance unless he is led to know that lack of promptness interferes with his progress. He will not endeavor to free himself from some lack in his ethical nature unless he is made conscious of that lack and is shown that it hinders the aims that he has.

53. The course of study, the program for the day's work, as well as the treatment of an single subject or topic, *should involve, to a degree, training in the contemplation and the expression of truth, beauty and goodness.* The child is a complex being, his nature being cognitive, emotional and volitional. Therefore, a complete education requires that the material being dealt with should stimulate and improve him, in so far as possible, in all three of these capacities. It seems possible to have the investigation of the American Revolution contribute in all of these directions. Of course, in any case, the work will of necessity be predominantly one of the three.

The principle implies that the teacher should reflect in order to determine to what extent the material being examined will stimulate the child's intellect and his aesthetic and ethical activity.

The contemplation of this principle may lead the teacher to ask, for example, "Can the study of the adverb contribute to the child's aesthetic and ethical training as well as to his intellectual development?"

"Is the intellectual realm entirely isolated from the aesthetic and the ethical?" It is important to consider this because a person often speaks as if the child could be trained in a satisfactory way intellectually without any advancement as to his aesthetic and ethical nature. Is this true?

APPENDIX I.

SERIES OF SENTENCES EXPRESSING THE STAGES IN VARIOUS ACTIVITIES.

THE CONSTRUCTION OF A FOUR-INCH SQUARE.

The point is resting.
It moves to the right four inches.
It rests again.
A straight line appears.
It is horizontal.
The point moves perpendicularly downward four inches.
It rests a third time.
A second straight line is produced.
It is vertical.
It is perpendicular to the first line.
The difference in direction forms an angle.
It is a right angle.
The point moves perpendicularly to the left four inches.
It rests a fourth time.
A third straight line is formed.
It is horizontal.
It is parallel to the first line.
It is perpendicular to the second line.
The difference in direction of the second and third lines forms a right angle.
The point moves directly to the place of starting.
A fourth straight line is produced.
Here the point finally rests.

FILLING A TEAKETTLE.

I am standing near the kitchen window.
I am looking out of the window.
I know the teakettle is empty.
I think the teakettle as filled.
I go to the stove.
I take hold of the knob on the lid of the teakettle.
I remove the lid of the teakettle.
I continue to hold the lid in my left hand.
I walk to the bucket of water.
I find the dipper hanging on a nail.
I take hold of the handle of the dipper near the bowl.
I fill the dipper with water.
I walk to the stove with the dipper full of water.
I pour the water from the dipper into the teakettle.
I walk to the water bucket again.
I fill the dipper a second time.
I walk back to the stove.
I empty the water from the dipper into the teakettle.
A third time I walk to the bucket of water.
I refill the dipper.
I pour the contents of the dipper into the teakettle.
I place the lid on the teakettle.
I hang the dipper up in its proper place.
I return to the window.
I again look out of the window.

THE ACT OF SPRINKLING A SLATE.

Edwin sits at his desk.
He stands.
He walks toward the sprinkling bottle.
He draws near to the sprinkling bottle.
He reaches out his hand.
He takes hold of the sprinkling bottle.

He turns.
He walks toward his desk.
He draws near to his desk.
He stops.
He turns the sprinkling bottle upside down.
He throws water on his slate.
He throws water on his slate again.
He turns the sprinkling bottle right side up.
He walks toward the blackboard.
He draws near to the blackboard.
He reaches out his hand.
He places the sprinkling bottle in the ledge.
He turns.
He walks to his desk.
He sits at his desk.

AN ACT IN GRAVITATION.

A guinea-and-feather tube is lying on the table.
It is full of air.
A circle of paper and one of brass are in the tube.
They are of the same size.
I pick up the tube.
I hold it in my hand with the top up.
I invert it.
The force of gravitation pulls the paper and the brass toward the center of the earth.
The air resists the downward movement.
The brass displaces the air and falls rapidly to the lower end of the tube.
The paper displaces the air more slowly than does the brass.
It flutters in the air.
It finally reaches the lower end of the tube.
I turn the tube top end up.

The force of gravitation pulls the paper and the brass toward the center of the earth.

The brass reaches the bottom sooner than the paper.

I screw a stop-cock to the bottom of the tube.

I fasten one end of a rubber tube to the stop-cock.

I fasten the other end to the air pump.

I grasp the handle of the air pump.

I move it vigorously up and down many times.

This exhausts the air from the tube.

I turn the thumb-screw on the stop-cock.

This prevents the air from entering the tube.

I take the rubber tube off the stop-cock.

I again invert the tube.

The paper and the brass reach the lower end of the tube at the same time.

A REPLY TO AN INVITATION.

Edna is in receipt of an invitation to dinner.

She recalls all her engagements for the week.

She finds that she has no engagement for the evening named in the invitation.

She decides to accept the invitation.

She goes to the writing desk.

She selects a sheet of un-ruled note paper, black ink, and a good pen.

She writes the following note:

Miss Edna Crafton accepts with pleasure Miss Katharine Stanford's kind invitation to dine with her on Monday evening.

She selects an envelope to correspond with her paper.

She folds the note once.

She slips it into the envelope.

She addresses it.

She places a stamp on the upper right hand corner of the envelope.

She posts the note.

A TEST IN CHEMISTRY.

I place the oxygen generator on the table.

I fill one-third of a test-tube with potassium chlorate and black oxide of manganese.

I cork the tube and connect by rubber tubing with the bottles in the generator.

I light the gas.

I heat the tube gently at first.

I gradually increase the heat.

The heat expands the air in the tube.

The air escapes in bubbles.

The air escapes more rapidly in bubbles.

I heat the tube until I have sufficient oxygen for my purpose.

I cover one of the bottles with a glass slide so that the oxygen will not escape.

I remove the bottle.

I take a piece of magnesium ribbon.

I put it into the flame.

It burns with a bluish-white light.

It combines with the oxygen of the air.

It forms a white powder.

This powder is oxide of magnesium.

I take another piece of magnesium ribbon.

I light it in the flame.

I remove the slide from the bottle.

I put the ribbon into the bottle.

It burns with a blue light.

It deposits a white powder.

I compare this powder with the powder left from the first experiment.

I conclude that the magnesium ribbon burns more freely in the bottle than in the air.

I find they are similar.

I see that it burns more freely in the bottle since there is more oxygen there.

I infer that in both cases the magnesium unites with the oxygen.

THE ACT OF LAYING A BRICK.

The mason stands beside the wall which he is building.

He procures a trowel full of mortar from the mortar board.

He spreads it evenly over the place where he intends to lay the brick.

He gets another trowel full of mortar.

He picks up a brick from the ground.

He throws up a cross or header joint.

He lays the brick on the wall very carefully.

He probably taps the brick lightly with the handle of the trowel, or with the edge of the blade.

This settles the brick into the correct position.

He scrapes the mortar, which has been pushed out by the brick, from the side of the wall.

He spreads the mortar, just gathered, over the top of the brick.

He pauses in his work to speak with a friend who is passing.

TRANSACTION ON SHORT CREDIT.

James Smith, the grocer, sells John Jones ten pounds of sugar and ten pounds of salt on credit, the account to be paid in a short time.

Mr. Smith turns to his day-book and makes an entry, thus

Nov.	9	John Jones, Dr.				
		To 10lb Sugar @ 6c.	60			
		10lb Salt @ 2c.	20		80	

In the evening, Mr. Smith posts this account in his ledger, which in this case is a small indexed account file, with detachable slips.

In ten days Mr. Jones calls to pay his account.

Mr. Smith immediately opens his account file at the letter "J," and sees Mr. Jones' account.

He takes out the slip, receipts it, and hands it to Mr. Jones, who thereupon pays it.

Mr. Smith then turns to his cash register and registers 80 cents, counting it as a cash sale of the day.

TRANSACTION INVOLVING AN INDEFINITE ACCOUNT.

James Smith, the grocer, is asked by John Jones for credit for three or four months.

Mr. Smith consents, takes his order, and enters it in his day-book, thus:

Nov.	9	John Jones, Dr.				
		To 10lb Sugar @ 6c.	60			
		19lb Salt @ 2c.	20		80	

In the evening Mr. Smith opens an account with Mr. Jones in a large ledger in which he keeps all accounts which run indefinitely, and makes an entry, thus:

Dr.			JOHN JONES,			Cr.
			Page Day Book			Page Cash Book
Nov.	9	To Mdse.		80c		

All succeeding orders are posted nightly to this same account.

In three months' time Mr. Jones calls to pay his account.

Mr. Smith turns to his ledger, states the amount, and receives the cash.

Mr. Smith then makes out a bill and receipts it, giving it to Mr. Jones.

He then takes his cash-book and makes an entry, crediting Mr. Jones' account in full.

This Cash-book entry is posted in the ledger, and Mr. Jones' account is balanced and closed up.

A GEOLOGIC ACTIVITY.

A granite peak stands upon the crest of a mountain range.

The rock is made up of white crystalline masses of hard quartz, red crystalline masses of softer feldspar, and glittering gold-colored leaves of soft mica.

The rain and snow water soak into the pores of the rock.

The water freezes in the pores of the rock and by expanding makes cracks in it.

The water dissolves and carries away some portions of the rock, and thus loosens the undissolved portions.

When the sun shines the rock gets very warm and expands; when the sun sets the rock gets very cold and contracts; the expansion and contraction break it up still more.

The roots of trees penetrate the cracks, and as they grow in size force the sides of the cracks further apart.

The air goes into the rock with the water and rots and softens some of the material.

The larger and more numerous the cracks become the more is the rock exposed to the attacks of air, water, heat and frost.

As soon as a piece of rock, large or small, becomes loosened, gravity pulls it down the steep slope.

The rain and melted snow run over the surface and wash away the loose fragments.

In the course of thousands of years the granite peak crumbles to pieces and is carried away down into the valley.

The stream at the bottom of the valley carries away the fragments of rocks that fall into it.

When the snows melt in the spring the stream is a torrent which rolls and pushes along great stones and boulders.

When the flood subsides the stream is able to carry only sand and gravel.

As the sand, gravel and boulders are carried down stream they are knocked about and rolled over one another and against the rocky bed of the stream.

The corners and edges of the sand grains and gravel stones are worn off; they grow smaller in size and become more and more rounded.

As they go further down stream the pieces of hard quartz change least rapidly, but the softer pieces of feldspar and mica are reduced to a fine soft powder.

The quartz never becomes finer than sand.

The stream is joined by other streams and becomes a river.

The river carries along in its current the rounded gravel, the grains of sand and the fine, soft powder, now called mud or clay.

As the river approaches the sea its slope becomes more gentle and its current slower.

As the current slackens it is less able to carry the coarser material.

It first drops the gravel, then the sand, and finally is able to carry only the mud.

At high water the force of the stream is greater, and it picks up again the sediment it has dropped, only to drop it again further down stream.

The sediment is dropped and picked up again a thousand times, but at last is carried into the ocean.

As the current of the river is gradually checked by the still water of the ocean, the coarser particles of sediment settle to the bottom and form a sand bar.

The finer mud is carried further out to sea and settles to form a mud bank.

Thus the tendency of the river is to sort out the coarser sediment from the fine, and to deposit all the sand in one place and all the mud in another.

The velocity of the current varies from season to season and from year to year.

The river at one time deposits sand and at another time mud, in the same place.

The sediment is always deposited in nearly horizontal layers, one above another, and is always more or less assorted into layers of sand and layers of clay.

Frequently the sand and clay are mixed together in the same layer, and in different proportions in different layers.

The waves, tides and currents of the ocean transport and assort or mix up the river sediment and deposit it again in new forms and positions.

Everywhere along the cost and for miles out to sea the waste of the land accumulates in beds of sand and clay.

As the beds are piled on each other the pressure on the lower ones becomes greater.

The sand beds are compressed and consolidated into sandstone, the clay beds into shale and the mixed beds into mixed sandstone and shale.

The pile becomes very thick and heavy, and with the ever-increasing load the crust of the earth under it is pressed down.

The crust of the earth is not strong enough to sustain the weight and slowly sinks, forming a great trough.

As the trough becomes deeper it is kept even full of sediment.

As the thickness of the sediment increases the upper surface remains near the surface of the water.

The sediment sometimes becomes eight miles thick.

As the beds of sandstone and shale sink nearer to the center of the earth they grow hotter.

At a certain depth they become as hot as red-hot iron.

The pores of the sandstone and shale are filled with sea water.

By means of the great pressure of the beds above them, the high temperature and the water, the sandstone and shale become partially liquid.

In the course of ages the mineral matter of which they are composed again crystalizes into masses of hard, white quartz, softer red feldspar and soft, glittering mica.

The sand and mud beds have been converted into granite.

The looseness and softness of the material which fills the trough of the earth-crust makes the crust weaker all along the shore of a continent.

The pressure from the stronger earth-crust on both sides squeezes the weaker part of the crust into wrinkles and folds.

The folds are slowly crushed together and slowly raised higher.

The upper edges of the folds rise above the sea and are finally pushed up into new mountain ranges.

Air, rain, heat, frost and gravity attack the rising land.

The covering of sandstone and shale is finally stripped off, exposing the granite below them.

Again a granite peak stands upon the crest of a mountain range.

THE ACT BY WHICH AN ALIEN BECOMES A CITIZEN.

Mr. Shannon comes to the United States from Ireland.

He wishes to become a citizen of the United States.

He presents himself before the District Court of the United States.

He declares his intention to become a citizen of the United States.

This declaration is recorded by the clerk of the court.

He receives a certificate from the clerk.

He returns to his home.

He spends his time in work at his trade.

He also makes himself familiar with the laws of the United States.

He again presents himself before the court.

He proves to the satisfaction of the court that he has resided five years within the United States.

He also proves that he has lived in the state one year.

He affirms that he has borne a good moral character.

He proves that he has been well disposed toward the constitution and government.

He renounces allegiance to every foreign power, including that of which he was formerly a subject.

He takes an oath that he will support the constitution of the United States.

He receives his certificate of citizenship from the clerk.

HOW AN ACORN BECOMES AN ACORN AGAIN.

An acorn has just fallen from an oak tree.

The acorn consists of a germ surrounded by a hard outer covering which serves for protection.

The germ has stored within it large amounts of nourishment which it is to use in its growth until it shall have developed far enough to make its own food.

The germ consists of a little stem, the caulicle, of two seed leaves, the cotyledons, and of the tiny plumule.

The cold winds of fall and the snow and frosts of winter make the acorn lie dormant during these seasons.

Approaching spring ushers in bright sunshine and warm rains.

The warmth and moisture quicken the latent energies of the acorn.

The germ begins to imbibe water, and swells.

The insoluble foodstuffs stored in the acorn are converted into soluble ones by the energy of the germ.

A dialysis of this material causes a flow of these foodstuffs to the growing points of the acorn.

The continued swelling caused by all these changes bursts the acorn shell.

Out of the cleft the growing caulicle protrudes.

The caulicle rapidly elongates and penetrates the ground a short distance.

On the underground portion of the caulicle small rootlets begin to grow.

The seed leaves remaining in the shell furnish nourishment to the growing parts.

The first leaves of the plumule appear above ground.

The sunshine on the plumule leaves incites the production in the leaf of green chlorophyll.

By means of this chlorophyll the young plant forms the third set of leaves as well as the growing tip of the stem.

On the growing tip new leaves appear in regular succession.

In the axils of these leaves branches grow.

By the continued growth of these parts the little germ becomes a small oak plant.

A continuation of these changes through many years changes the oak plant into an oak tree.

The oak tree bears small inconspicuous flowers.

These flowers are of two kinds.

The sterile flowers produce stamens in which many small powdery grains called pollen grains are found.

The fertile flowers produce pistils.

Each pistil bears two ovules.

The wind carries some of the pollen grains to the tip of the pistil called the stigma.

The pollen grains grow down through the pistil until they reach the ovules.

They penetrate into the ovules and fuse with the egg cell.

The egg cell of one ovule grows into a small germ.

The other ovule becomes abortive.

Each pistil now contains but one germ or seed.

The germ devolps large seed leaves or cotyledons and stores them with nourishment.

The pistil forms a firm shell around the contained seed.

The calyx of the flower helps to form this shell.

The involucre around the base of the pistil forms a leafy cup in which the ripened pistil rests.

The leafy involucre and the pistil are together commonly termed the acorn.

The acorn receives nourishment all during the summer season from the parent oak.

In autumn the acorn is fully formed or ripe.

The autumn winds begin to blow.

Again an acorn falls from an oak tree.

SUGGESTIONS ON THE WORK.

It is to be assumed that before entering upon the work of guiding the pupils in constructing a series, the teacher has clearly in mind, the nature of the entire activity, and also the form of the various sentences in which this activity is to be expressed, substantially. The pupil is not assumed to know either. The work begins with the consideration of the action. In no case are the sentences to be given to the child. The pupils are actually to construct each series and the work is to be largely oral.

The teacher should begin by indicating the purpose of the activity to be expressed.

The thought underlying the first sentence of the series, is then to be worked out carefully. For example, in the series concerning the teakettle the child's attention should be turned to the entire action expressed by the sentence and then to the meaning expressed by "near", "window", "kitchen", etc. The sentence which is finally constructed to express the entire action is to be settled upon only after careful comparison and discrimination concerning words. For example, the teacher should lead the children to think whether it would be more appropriate to employ "stands", or "am standing"; whether to employ "at," "by" or "near", etc.

In all this, as above indicated, the sentence is not to be put before the children in its visible form. It is to be dealt with only orally. The exact form of the sentence having been decided upon, it is then to be made the property of each member of the class orally. In the exercises on this point the work of the teacher must be controlled closely by the language act; that is, he is at all times to lead the pupil:

1. To obtain the meaning (the object in language).
2. To think the expression, (the expression in language).

3. To think their correspondence, (the harmony, the correspondence in language).

This work in mastering the sentence orally, involves everything under the pronunciation, enunciation, modulation, emphasis, etc.

One by one, each sentence of the series is to receive substantially the same treatment. The series of sentences is to be so thoroughly learned orally, that the child can begin with the first partial action of the larger concrete activity, and both think the various subordinate acts in their true succession, and express these successive acts by the corresponding oral sentences.

The various natural divisions in the activity are to be noted by the pupil, and to be indicated in his oral expression.

The foregoing deal with the actions and the corresponding sentences as a whole. This having been done, each pupil is to be made able to select the essential element of the entire action expressed in a sentence; to employ the word or words expressing it, and thus to move through the entire activity, employing only the words asserting the action. In the series concerning the teakettle, the pupil should give, "am standing", "am looking", "know", "think", "go", "take hold of", "remove", etc.

This kind of work is undertaken in order to give the pupil the habit of selecting the central action in the entire activity, and of recognizing especially the vital element in the sentence—the verb.

In conducting the work upon this and other features, it is often helpful to have the pupils assist in directing the work. That is, the pupils may at various times act as teacher, asking questions, giving directions, expressing the commendations or cautions concerning the nature of the work, etc.

The foundation series of sentences constructed by the pupils should be, as a rule, in the form of the present tense, third person, singular, indicative mode. This is the natural expression for the child. In the series above referred to, the form worked out by the children should be:

She is standing near the kitchen window.

She is looking out of the window, etc.

The pupils should be led to see in any given series the relation of means to end. This should be emphasized. The action expressed by the first sentence is a means to that expressed by the second. The action expressed by the second sentence is a means to that expressed by the third, etc. While this may not be true in every possible case, it is the general rule and the controlling thought in determining the order of the actions to be expressed.

Not only is the action expressed in a given sentence a means to that expressed in the following sentence, but also the action in any sentence is the end or result of a series of subordinate actions. For example, the act of standing near the kitchen window is the result of a series of preceding actions all intended to bring about that end. In order to render the child still more accurate and discriminating in the choice of words, he should at least once during the study of each series be led to discover and appropriately to express the various actions leading up to this one action expressed by the sentence.

In concluding these general suggestions concerning the work of any series, three thoughts are worthy of iteration:

1. In considering any action to be expressed by a series of sentences, the teacher is to view the act as returning to itself. It is probable that any act in nature or in human life, viewed in its entirety, would be seen to be, employing Hegel's significant term, a "return to itself." Work of this kind will accustom the child to this view of nature.

2. Under all stages of work, the teacher is to be careful to present such actions, directions, and illustrations as are adapted to lead the pupil to think:

a. The object or meaning very clearly and distinctly.

b. The expression.

c. The correspondence of object and expression.

This threefold movement of thought is the language act. It is *the method in language.* As such it is to be constantly before the teacher in all language work.

As before indicated, the language act in full, is, thinking the object, creating the purpose, thinking the expression, and thinking the correspondence between expression on the one hand, and purpose and object on the other. Since, however, the special purpose renders the object special, the purpose is always involved in the object expressed by language. For this reason, the language act is here spoken of as threefold. That is, it is the act of thinking the object, thinking the expression, and thinking their correspondence.

3. It is very important that the sentences of any given series should be very clearly understood as to their meaning, and made completely the pupil's own orally, before moving out into the field of the derived work.

It is evident that the series of sentences expressing any action, constitutes the bare frame-work for an organized composition. It is also clear that this composition when fully organized is of the nature of narration. It is further evident that the individual objects to be expressed in description, the general objects to be expressed in exposition, and the relations giving rise to argumentation, are found in the material of each action. In considering the work under composition:

1. Attention will first be turned to several kinds of preliminary work.

2. Succeeding this, the work of changing the series of sentences as a bare structure, into a piece of organized discourse, will be noted.

3. In the third place brief reference will be given to the more systematic work under description.

Among the kinds of *preliminary work* are the following:

a. Under the guidance and suggestion of the teacher the pupils may be led to select the expressions in the series of sentences known as *subjective language.* In the series of sentences concerning the teakettle there are found such expressions as "I know," "I think," "I find." This kind of work should be slight at first, gradually increasing in exactness and importance as the children become more advanced in the work.

b. Beginning as early, perhaps, as in the third grade, the children should be led to consider the *figurative language* based upon the series of sentences studied in the second grade, and also that based upon those studied in the third grade. This figurative language is based upon the separate words in the sentences, and also upon the central thought pervading the entire action. Some of the figurative expressions to be noted as arising from the series of sentences expressing the action of filling the teakettle, are the following:

(1) Based on *separate words* in the series concerning the teakettle,

(a.) In the sixth sentence. On *take.* "Take fast hold of instruction." Prov. IV-13. On *lid.* "The kettle lid, on or off, and the pumper, give a very good picture of modern theory and practice." Thring's *Theory and Practice of Teaching.*

(b.) In the eighth sentence. On *continue.* "If ye continue in my word then are ye my disciples indeed."

On *hand.* "He was always reckoned a lively hand at a simile," etc.

(c.) In the seventeenth sentence. On *walk.* "Oh! for a closer walk with God," etc.

(d.) In the eighteenth sentence. On *empty.* "I shall find you empty of that fault." "Pleased in the silent shade with empty praise." On *water.* "Remembering he had passed over a small water, a poor scholar when first coming to the university, he kneeled."

(2) Based on the *pervading thought,* in the series concerning the teakettle.

The main thought in this series may be *duty.* This mental attribute may be imaged as a person. It is so imaged in the following:

> "So nigh is grandeur to our dust,
> So near is God to man;
> When duty whispers 'Lo, thou must!'
> The youth replies 'I can.'"

Carefulness may be viewed as that with which one is mainly impressed in studying all the various phases of the action. An analogy may be discovered between this trait and a rampart.

Carefulness, in the image of the rampart, may then be spoken of in a series of sentences.

c. Work with *isolated sentences.* This work does not always use the sentence in the exact form in which it appears in the series. The aim of the work is to make the child more familiar with the exact significance of words and with the properties they possess, due to the expression of their meaning. The different steps in this work are herewith noted:

(1.) The sentence is changed into the form that will best lead the child to determine the significance of the words from their connection in the sentence only. For example, if the first sentence in the series embodying the

action of filling the teakettle is used, instead of using it as it is, the teacher may place it upon the board modified as to the subject, thus: "It is standing near the kitchen window."

(2.) The child is then required to image an appropriate environment for the actor and the action. This is to be set forth in the form of a story, and written upon slate or paper. One part of the story is to be the sentence that was placed upon the board. These stories are then to be read, and, through the suggestion of the teacher and other pupils, to be modified, condensed, given greater unity, etc. One of the pupils might present some such story as the following:

"Yesterday my mother was shopping. In passing one of the dry goods stores she saw a beautiful doll in the window. She bought it for me. I was very much delighted with it. I have been playing with it nearly all morning. I am now through playing with it until after dinner. *It is standing near the kitchen window.* This is not a good place for it. I must take it into the sitting room."

Another might image a different environment, and give expression to it in a different story, thus:

"This morning I found a young bird under the apple tree. It was too young to fly. It must have fallen out of the nest. The rain had been falling for more than an hour, and the little bird was very wet. I brought it into the kitchen and placed it under the stove. The air was warm there and it soon became dry. After a while it began to walk a very little. I then took it in my hand and put it on the shelf. *It is standing near the kitchen window.*"

No doubt the stories as first presented upon the slates would be much more crude in form than these, and much more fragmentary. They would likewise have much less unity.

(3.) On the basis of the various stories the pupil should be led to see the significance of the different words. For example, it would be shown him that the word, "it," might mean a doll, a bird, etc.

(4) The children should then be led to notice what may be called the properties of the word, that is, they should be shown that the word, "it," means but one object; that it means the object spoken of; that it means the object performing the action, etc. Similar work should be taken with the word, "window," and with the other words of the sentence.*

d. A fourth kind of preliminary work is that in which the children substitute for any given expression other expressions having substantially, though not exactly, the same meaning, and then decide upon the relative appropriateness of the different expressions. This work in substitution should begin with the verb, then pass to the subject, and finally to the predicate. Thus in the first sentence the children might substitute for "am standing" the word, "stand"; for "I," the expression, "the one who is speaking"; for "near," "by" or "at," etc.

In each case the relative fitness of the different expressions is to be carefully considered. The work is important, because in an elementary way it both makes a transition to rhetoric and lays the basis for an intelligent discussion of the different elements and words in the sentence, when in later years scientific grammar is entered upon. One great difficulty that the pupil encounters in determining the force of the various expressions in a sentence, is his inability to image corresponding expressions for the expression under consideration.

e. The four kinds of work indicated grow immediately out of the series of sentences. The fifth kind, now

*See work on Isolated Sentence in "Inland Educator," Vol, III, Jan., 1897, p. 298.

to be considered, changes from the series of sentences constructed by the pupils, to some finished selection of discourse. This finished selection is examined in order to find, in the first place, what may be termed the embodied series of actions, and the expression for it; and in the second place, to discover the connective, iterative and explanatory sentences, the rhetorical features of the various sentences, and whatever else is involved in transmuting a bare succession of sentences, exhibiting a few successive actions, into an organized, finished selection in discourse. The following furnish material suitable to the explanation of the work in question:

HOW A PRESIDENT IS MADE.

Despite our boasted education as a people, and in curious contrast to the tremendous interest we take in elections, it is doubtful if one voter out of ten can accurately describe the process by which a President and Vice-President are made.

Commencing with *the choice of electors on the first Tuesday after the first Monday in November of presidential years,* the next step is *the meeting of these electors at their several State capitals on the second Monday in January following the election.* An act of Congress requires the electors of all the states to meet on the same day. *At this meeting each elector casts his ballot for President and Vice President.* He is at perfect liberty to vote for whomsoever he chooses, but in testimony to the high sense of honor which pervades the American people it may be said that since the formation of the government no elector has failed to vote for the candidate for whom he was elected. After the votes have been cast *they are sealed up* and *entrusted to one of the electors, who is designated by his fellows for the purpose,* and *by him are conveyed to Washington and delivered*

over. These sealed ballots are *directed to the President of the Senate, who opens them in the presence of the House and Senate, on the second Wednesday of the following February,* this joint session being required by law. *If it is found that any candidate for President has received a majority of the entire electoral vote he is formally declared elected,* and *the same is true of the Vice President;* but *if no one has received a majority for either of these offices the joint session dissolves* and *the House proceeds to elect a President* and *the Senate a Vice President.*

In voting for President the House is restricted to the three men who received the highest votes in the Electoral College. In the House each State is entitled to one vote. How this vote shall be cast is determined by a majority of the Congressmen from each State. It makes no difference how the State may have voted upon electors, a majority of the Congressmen may determine how it shall vote when the presidential election is thrown into the House. To elect, a majority of the entire number of States is required. The same process is had in the Senate, with the exception that each Senator has a vote and only the two highest voted for in the Electoral College may be selected from. *In case the House should get into a deadlock which should last beyond the 4th of the following March, the Vice President chosen by the Senate would assume the presidential chair on that date,* thus doing away with the rule so prevalent in political affairs that an officer holds until his successor is elected and qualified. The old President must step out, whatever may be the fate of his presumed successor.

The Constitution did not seem to provide the means of presidential succession which might be demanded under certain emergencies, and so *the Forty-ninth Congress passed a bill fixing this succession* as follows, in case of the death, resignation or disability of both the President and Vice

President: Secretary of State, Secretary of the Treasury, Secretary of War, Attorney-General, Postmaster-General, Secretary of the Navy and Secretary of the Interior. *It is provided, however, that before either of these may assume the presidency he must first have been recognized by the Senate as a Cabinet officer and possess in himself the constitutional requirements of a President.*

GOLD LETTERING.

The sign letterer who is putting a gold sign on a window, paints the letters upon the outside first, but these letters are only for a guide—the gold is put upon the inside of the glass. The gold leaf is so thin and light that the faintest breath would be enough to blow it away—it is carried in the familiar little books.

The letterer brushes the inner side of the glass, back of the lettering painted upon the outside, with a brush dipped in water containing a trace of mucilage. Then with a wide and very thin camel's hair brush, which he first brushes lightly back and forth once or twice upon the back of his head, or perhaps upon his coat, to dry it if it needs drying, and slightly to electrify it, he lifts from the book a section of gold leaf sufficient to cover a section of the letter and places it on the glass. He repeats these operations until the glass back of the letter painted on the front is covered with the leaf. It may require three or four sections, such as can be picked up with the brush to cover the letter, or perhaps more, depending on its size and shape. When he has completed the application of the leaf to one letter he dampens the back of the next and proceeds with that in the same manner, and so on until the letters are all backed with the gold leaf.

Thus applied the gold leaf overlaps the letters more or less on all sides. It is bright in color, like all gold, but it

is not shining; it is burnished by rubbing it gently on the back—of course, it cannot be rubbed on the face, for that is against the glass—with a soft cloth. It burnishes, however, on the face as well as on the back. Then the letters are backed. The exact shape of the letter is painted over the back of the gold leaf to fix and protect it; and when the back is dry the gold leaf projecting beyond the outline of the letter is brushed off. It is not sought to save this projecting leaf; there is not enough of it to pay for the labor that would be involved in gathering it together. Then the outside lettering, which is done with paint that is but little more than oil, is rubbed off, and the lustrous gold lettering is revealed.

THE DARK FOREST.

In the midway of this our mortal life
I found me in a gloomy wood astray,
Gone from the path direct: and e'en to tell
It were no easy task, how savage wild
That forest, how robust and rough its growth,
Which to remember only, my dismay
Renews, in bitterness not far from death.
Yet to discourse of what there good befell,
All else will I relate discover'd there.
How first I enter'd it I scarce can say,
Such sleepy dullness in that instant weigh'd
My senses down, when the true path I left;
But when a mountain's foot I reached, where clos'd
The valley, that had pierc'd my heart with dread,
I look'd aloft, and saw his shoulders broad
Already vested with that planet's beam,
Who leads all wanderers safe through every way.

Dante's *Inferno*, Canto I, lines 1–16.

ON A FELLOW-PASSENGER ASLEEP ON A TRAIN, WITH THE POEMS OF BION AND MOSCHUS IN HIS HANDS.

Wake, wake him not; a book lies in his hands.
Bion and Moschus live within his dream.
Tired of our world he fares in other lands,
Wanders with these beside Ilyssus' stream.

Dull, even sweet, the rumble of the train;
'Tis Circe singing near her golden loom.
No garish show afflicts his charmed brain;
Demeter's poppies brighten o'er her tomb.

Now, half awake, he looks on star-lit trees—
Sees the white huntress in her eager chase.
Wake, wake him not—upon the fragrant breeze
Let horn and hound announce her rapid pace.
Unbanished gods roam o'er the thimy hills;
Calm shadows sleep upon the purple grapes.
Hid are the naiads near the star-gemmed rills;
Far through the moonlight wander lovelorn shapes.

Gray olives shade the dancing dryad's smile;
Flutes pour their raptures through that visioned stream;
Echoes like these our modern cares beguile—
Soft-whispering music from the old Greek's dream.

Songs of Night and Day, F. W. Gunsaulus,
A. C. McClurg & Co.

It will be noted that two of the selections are prose, expressing mere facts; and that the two others are poetry, setting forth idealization.

In order to offer an explanation of the work, the selection relating to the election of President and Vice-President is taken. The other selections could be treated in a similar manner.

In dealing with a selection in organized discourse, the first work is to *discover the embodied series of actions.* This is shown, substantially, in the article concerning the election of President, by means of italics.

The second work is *to construct the series of sentences expressing the elements of the action.* In the given case these may appear somewhat as follows:

1. On the first Tuesday after the first Monday in November, in Presidential years, the qualified voters of each state choose the electors for that state.

2. The electors meet at their several state capitals on the second Monday in January after the election.

3. At this meeting each elector casts his ballot for President and Vice-President.

4. The electors then seal up the ballots.

5. They direct them to the President of the Senate, Washington, D. C.

6. They elect a messenger, usually one of their own members.

7. The messenger carries the sealed ballots to Washington.

8. He delivers them to the President of the Senate.

9. On the second Wednesday of the first February after the election, the Senate and the House of Representatives convene in joint session.

10. The President of the Senate opens the ballots in the presence of both Houses.

11. It may be found that one candidate for the Presidency has received a majority of the entire electoral vote.

12. In that case he is formally declared elected to the Presidency.

13. It may also appear that one candidate for the Vice-Presidency has received a majority of the ballots.

14. He is then formally declared to be elected to the Vice-Presidency.

15. It may, however, be found that no one has received a majority of the electoral votes for the Presidency.

16. It may likewise appear that no one has received a majority of the votes for the Vice-Presidency.

17. The joint session in such case dissolves.

18. The Senate proceeds to elect a Vice-President.

19. The House enters upon the election of a President.

20. It may be that the House fails to elect the President before the 4th of the following March.

21. The Vice-President chosen by the Senate, thereupon assumes the Presidential chair.

22. It is possible that both the Presidency and the Vice-Presidency may become vacant by means of death, resignation or disability.

23. The forty-ninth Congress fixed the succession in such case.

24. The act of the forty-ninth Congress established the following succession: Secretary of State; Secretary of the Treasury; Secretary of War; Attorney General; Post Master General; Secretary of the Navy, and Secretary of the Interior.

25. The act provides that the one who becomes President in compliance with this law must have been recognized by the Senate as a Cabinet Officer.

26. It further ordains that he must possess the constitutional requirements for the Presidency.

The third kind of work is *selecting the words that express the central action in each sentence.*

The fourth kind of work is *the reconstruction of the sentences on the basis of the verbs,* as, for example, on the verb of the first sentence, *choose.*

(Who,) voters choose.

(More definite,) qualified voters choose.

(Still more definite,) the qualified voters choose.

(Fully definite,) the qualified voters in each state choose.

(What,) choose electors.

(More definite,) choose the electors.

(Fully definite,) choose the electors for that state.

(When—year,) choose the electors for that state in Presdential years.

(When—month,) choose the electors for that state in Presidential years in November.

(When—day,) choose the electors for that state in Presidential years in November, on the first Tuesday after the first Monday.

The fifth kind of work is *the further organization of the sentence,* produced by deciding upon the *order* of the various expressions. This may place the last expression given above, showing the day on which the election is to occur, so as to bring it first in the organized sentence. A high de-

gree of skill in language and power to construct it, may arise from a consideration of the various advantages accruing from the different positions of the various expressions.

The sixth kind of work is *an examination of the language accompanying the expressions revealing the series of actions.* For example, study will reveal that the first sentence is a transitional sentence, in that it connects ideas of our education and ideas concerning our interest in elections (both subjects being assumed to be present in the mind of the reader,) with our ignorance of the process by which a President and Vice-President are made. This first sentence is also explanatory, its purpose being to reveal why the writer presents his thoughts concerning the process of electing the President and Vice-President. In the second sentence the expressions, "commencing with" and "the next step," are transitional. A sentence may be iterative, in that it may present activities a second time, etc. From this it will be observed that the main kinds of sentences required in order to change the mere series of sentences into organized discourse are three:

Transitional sentences.

Iterative sentences.

Explanatory sentences.

In connection with each separate sentence, and also with the sentences expressing the series of actions, certain rhetorical features are always involved in organized discourse. These are shown in:

Arrangement.

Employment of subjective sentences.

Employment of figurative expressions including both figures of speech and figures of thought.

A rhetorical feature produced by the arrangement is shown in beginning the first sentence with "Despite our boasted education, etc.", instead of beginning it with "One

voter out of ten, etc." Among the subjective expressions are, "The interest we take", "It is doubtful." Among the figurative expressions are, "The tremendous interest we take", "The next step", "High sense of honor", "Get into a dead-lock", "An officer holds", "Must step out". It will be noted that many of the figurative expressions are also subjective expressions. In the expression, "The House proceeds to elect a President and the Senate a Vice President", a figure of speech is found. One is also found in the enumeration of the members of the Cabinet, indicating their order of succeeding to the Presidency. When these rhetorical features have been discovered, it is important that the pupils be led to consider their effect.

This finishes the treatment of the selection of organized discourse. Equipped with the new power arising from such work, the pupil is now able to turn to any one of the bare series he has previously constructed, and transform it into organized discourse. In doing this attention should be given to several things:

1. The order of the different expressions in any given sentence should be noted, and the advantage of any change brought out. For example, the pupils may be led to compare the following in reference to the first sentence in the series concerning the kettle: "I am standing near the kitchen window." "Near the kitchen window, I am standing." "Standing near the kitchen window, am I." Under order should be noted in the second case, the order of the successive sentences.

2. The work succeeding the consideration of order is an examination as to the combinations that may be made. These combinations might appear as follows: "I am standing near the kitchen window, looking out of it." "I know the teakettle is empty, and yet I think of it as filled." "I

then go to the stove and take hold of the knob on the lid of the teakettle, etc.''

3. The third kind of work is what may be called the elaboration of the series. It consists in the appropriate employment of transitional sentences, iterative sentences, subjective sentences, explanatory sentences, and the use of various rhetorical features, such as transposition, figures of thought, etc. The following, prepared by students, may furnish sufficient illustration of this elaboration of the bare series of sentences:

a. We can realize how much is to be done before our end is accomplished when we want to build a house, obtain a copy-right, or receive a degree at college, but how little do we realize the many, many little acts that must be performed before we have accomplished one, even one of the least, of the acts in the sphere of the family, as for example, that of filling the teakettle. I will here call attention to one set of conditions under which this act once occurred. The cook, while waiting for her mistress, stood near the kitchen window watching the little birds bathing in the puddles of water which remained after a hard morning shower. While standing there she was reminded of the teakettle she had left on the stove almost empty. She immediately imaged it as filled, and walked to the stove to remove the lid from the steaming kettle. She held the lid in one hand while she walked to the bucket of water which was on the table. She reached for the dipper which hung in the usual place on a nail just above the bucket. She took hold of the dipper near the bowl, so that she would be less apt to spill the water, and filled it with water. Having filled the dipper, she returned to the stove to empty the water into the kettle. She repeated this action three times, thinking the kettle would then be sufficiently full.

And so it was. Then she replaced the lid on the teakettle, and hung the dipper in its usual place, for she was always particular that things should be kept in their proper places. After she had completed this she returned to the window and continued watching the little birds for her mistress had not returned from market.

b. It is a cold December day and Mary is standing near the kitchen window, looking out upon a charming snow scene. She thinks that the little snow-covered fir tree on the hill lacks only candles to complete it, and she also thinks of her papa and mamma, who have gone to town on a mysterious errand.

Her face wears a bright expression, for she remembers her mother's parting words, "I feel that I can trust you, Mary, to keep the fire bright and the kettle boiling."

This thought reminds her that the teakettle is probably empty and must be filled at once. So she goes to the stove, and taking hold of the knob, lifts the lid from the teakettle. Still holding it in her left hand, she passes to the water-bucket and removes the dipper from its accustomed nail near by.

Now, Mary is such a small girl that it is not easy for her to dip water without spilling it, so she grasps the handle quite near the bowl, to prevent such an accident. She fills her dipper, and returning to the stove, very carefully pours its contents into the teakettle. It takes three dipperfuls, so that her chubby arms ache by the time she has finished.

She replaces the lid, hangs up the dipper, and returning to the window, looks again at the fir tree which is soon to bear candles, and waits patiently for the return of her papa and mamma.

c. On a bright and sunny day I stand near the kitchen window, watching some birds as they pick up the

crumbs. As I do this, the clock gives warning of the approaching dinner hour. I know that the teakettle is empty and at once think of it as being full. I walk to the stove and remove the teakettle lid. As I hold it in my hand I walk to the water-bucket, and finding the dipper hanging on a nail above the bucket, I take hold of the handle of the dipper close to the bowl in order to carry the water more easily. I take one dipperful and empty it into the teakettle. I pour in two more dipperfuls and then the teakettle is full. Placing the lid on the teakettle so that the water will boil sooner, I hang the dipper in place again. I resume my position at the window and again look out.

d. It was a clear, cold day in November, and the bright fire in Farmer Jones' comfortable kitchen sent out a cheerful glow. Mrs. Jones hurried to and fro, for a great many things had to be done on this particular morning. To-morrow would be Thanksgiving and a number of guests were expected. The farmer had gone into the village quite early to purchase groceries, and now Mrs. Jones was expecting to hear the sound of old Doll's feet on the hard frozen road at any minute, for she must have those things to finish her baking. She left the table, where she was at work, and was standing near the window looking out. Just then she heard a queer, sizzing noise, and remembered that the teakettle was empty. It must be filled, for she would need hot water to scald the turkey. So she hurried to the stove, took hold of the lid of the teakettle and removed it. Holding it in her hand, she walked to the water bucket which stood on the table. Mrs. Jones was a very neat housekeeper and always kept things in their proper places. Just back of the bucket hung the dipper on a nail. She took it down, and filling it with water, poured the contents into the teakettle, all the while grasping the handle near the

bowl, for she was so much afraid of spilling the water on her new carpet. This she did three times. She then put the lid on the kettle and hung the dipper in its place. Surely by this time Doll must be in sight, so she returned to the window and again looked out. Just then the horse's feet came clattering up the pike.

APPENDIX II.

OBSERVATION OF THE PSYCHICAL PROCESS IN A LESSON.

FORM THAT MAY BE USED IN RECORDING RESULTS.

I. State the object (i. e., that which receives the focus of attention, that which is being known,) in the following activities in so far as the process of learning the lesson involved them. The object of memory is that which the pupil remembers; the object of imagination is the modified object of which the pupil becomes aware in an act of imagining, etc.

1. Sense-perception . . .
   - Perceiving the object as a whole _____
   - Analytic perceiving _____
   - Apperceiving _____

2. Memory . .
   - Spontaneous _____
   - Voluntary _____
   - Systematic _____

3. Imagination .
   - Mechanical.
     - With present object _____
     - With absent object _____
   - Seperative.
     - With language _____
     - With picture, or externality of a work of art _____
   - Creative
     - Productive _____
     - Interpretative _____

4. Language act . . .
   - Productive
   - Interpretative

5. Understanding . .
   - Apprehension
   - Distinction.
     - Abstraction
     - Discrimination
     - Comparison
   - Classification.
     - As a whole
     - With respect to cause
     - With respect to effects
     - As to central meaning

6. Conception .
   - As to meaning of single object
   - As to common attributes
   - As to creative activity

7. Judgment
   - Immediate
   - Conditional
   - Definitive (i. e., in form of definition)

8. Reasoning
   - Identification
   - Induction
   - Deduction

II. What was the characteristic process of the lesson?

1. Give the stages in this process as involved in this lesson

Student *Grade*

Date *Subject*

Teacher

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