

The *Office* Open Court

A MONTHLY MAGAZINE

Devoted to the Science of Religion, the Religion of Science, and the
Extension of the Religious Parliament Idea

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CHICAGO

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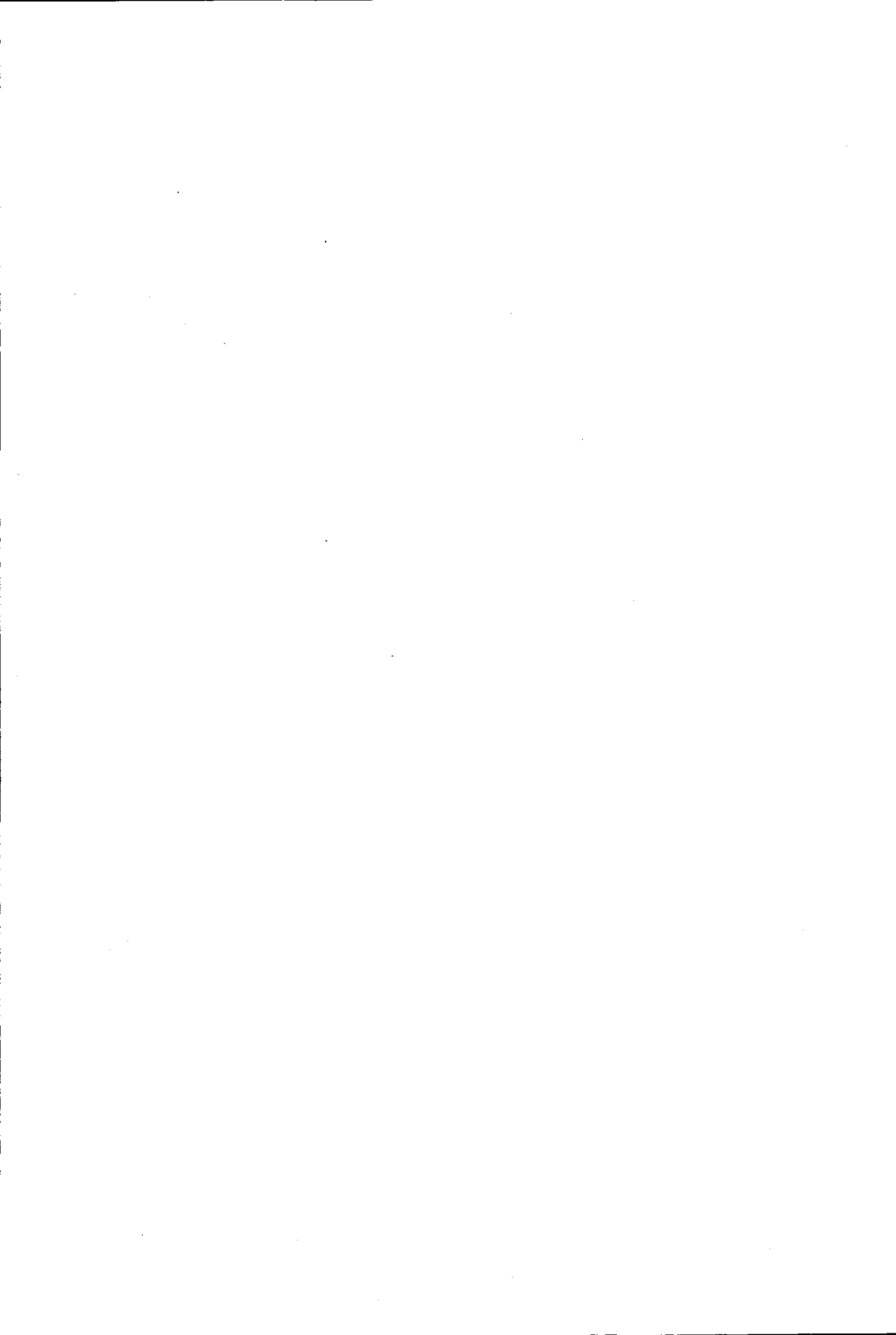
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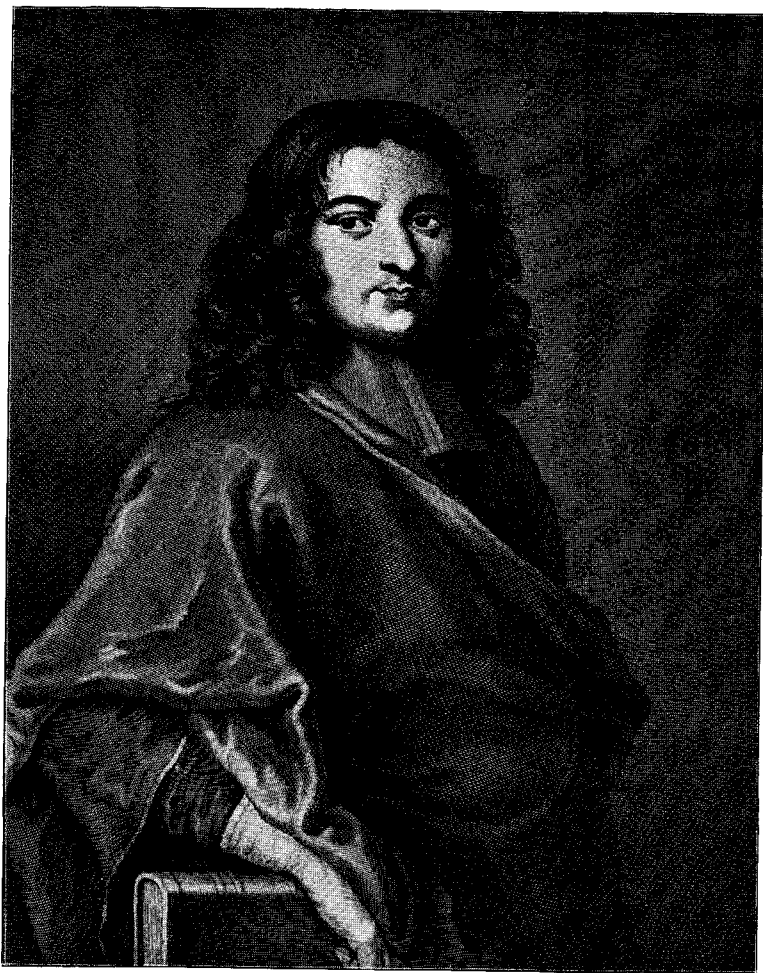
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PIERRE BAYLE.
(1647-1706.)

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**Devoted to the Science of Religion, the Religion of Science, and
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VOL. XII. (NO. II.)

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INTELLECTIONS.

A PSYCHOLOGICAL STUDY.

BY MAJOR J. W. POWELL.

A STREAM of judgments flows through the mind. As the ego has self-activity it changes its position in the environment at will and a different environment plays on the senses at every change in the position of the ego. Then by different senses the environment solicits the attention simultaneously by all. Thus attention is solicited by more sense impressions than it can attend to, and it chooses for attention those which serve a temporary or more sustained purpose. Those serving a temporary purpose give rise to what has been called by Kant, the practical reason; those serving a sustained purpose, the pure reason.

Presentative judgments that originate in sense impressions, are often followed by representative judgments, and these are either discursive or volitional. Hence we see that the judgments which we make are exceedingly multitudinous and heterogeneous. But all these judgments are assembled in concepts by more temporary or more permanent purposes. What judgments can be made are determined by the environment; but what judgments the mind selects to make are determined by the purpose. Thus the ego is the creature of environment and self-activity. The stream of judgments is thought, and thought is controlled by self-activity and environment.

It may be well to further consider the process of combining judgments by reflexion.

I am wandering by the river. Why should the river here suddenly pass from a narrow gorge to a wide-spread plain and be transformed from a narrow to an expansive stream? And why should the turbulent waters above become so quiet below?

I climb a rock to study the problem. The bluffs standing back from the river converge at this point and seem as if they would join hands across the chasm through which the river plunges. Here the bluff is a cliff and the edges of sandstone strata outcrop in the escarpment, and I observe with care the succession of rocks from the bottom to the top of the cliff. But a robin flies down and perches on a willow near by, and in a instant cliff and geology vanish from my thought; I see a turkis egg and a nest in the apple-tree of my garden, and my daughter is shouting a song of childish joy in my mind's ear, for this she did not many weeks ago. In thought I am at home once more. Then home vanishes and I see the robin again flitting from bough to bough, and as it moves my eyes follow it until it is in a line between myself and the cliff, and the sight of the cliff brings back my geologic problem. I see the red sandstone below, the brown shales between and the white sandstones above, and recognise the succession as being similar to one seen before. If so, the summit of the cliff must be crowned by a limestone. Yes, there is the limestone with its angular outlines, in contrast with the round reliefs of the sandstone. I am one step farther in my problem. I put the facts of the succession together and say this is a carboniferous cliff. I know these rocks.

In climbing I hear a noise. In an instant I interpret it as the voice of a friend, and, turning about, find I am right. I hasten to announce my discovery, but he holds a flower aloft, waving it in triumph. That wand banishes the cliff with its succession of beds from my mind, and I see a bluebell drooping from its delicate stem and ringing a chime of cerulean beauty. In a twinkling of an eye my mind travels a thousand miles, and I am climbing the gray sandstone cliff which rises in the midst of the valley of Illinois River and is known as "Starved Rock." The miles my soul has travelled are only equaled by the time over which it has returned. I am a young man again, and I burst into a song:

" Its rare to see the morning bleeze
Like a bonfire frae the sea."

Why do I sing that song? It was on my tongue when I found my first bluebell on "Starved Rock."

My friend bids me follow him. At one moment I am thinking of the cove, at another I am listening to the voice of my friend, and at still another I am watching the way over which we walk; and now and then my mind wanders away home and where not. Now my attention is attracted to a footprint in the sand. From its

shape I know it was made by a deer. Thus I make an inference beyond my perception. The track is the sign of something else. I see other tracks; they are arranged along our course in pairs several feet apart. By this arrangement I infer that the deer was leaping, as if fleeing from danger, and I imagine that the deer has been startled at our approach. This is an erroneous inference, for my friend tells me that he roused the deer as he came down the path some time ago. And as we still walk I study the rocks, and discover that a limestone forms the floor of the valley below; and then I discover by its contained fossils that it is the same formation as the one which crosses the summit of the cliff. The valley limestone was broken from the cliff limestone and dropped down by what geologists call a fault, and the fall or throw of the fault is more than a thousand feet. And now I discover the origin of the cascades in the canyon above and the broad and quiet flow of the river below. The last dropping of the sandstone by the fault decreased the declivity of the stream in the valley and increased the declivity of the stream above the valley, where it comes down through the canyon. All this is reasoning. It is a series of judgments controlled by will for a course of reasoning on a theme for which I have a permanent interest, interrupted by a multitude of adventitious judgments that are made by reason of temporary interest.

We sit down by the spring and my friend spreads the lunch on a fallen tree trunk, and away goes my mind to the bank of the Grand River in central Colorado, and I see a prostrate pine, and an emerald lake near by, and on the shore, cliffs of granite, and beyond, a snow-clad mountain, and about its summit the gathered clouds, and the sheen of clouds and snow-fields blends with stretches of forest and crags and peaks of towering grandeur. Years ago I was there, and the feast on this log brings back the feast on that log, with its attendant glories of mountain scenery. From that scene I am called back by the bidding of my friend to eat. Then a bird comes down to the fountain, and I am engaged in watching its coy advances to the water. And so my mind passes instantaneously from one object to another—now engaged in observing things present, now listening to the voice of my friend, now occupied in expressing my thought to him, now calling up some scene from afar; but ever thinking. On goes the stream of thought.

I eat of the turnover, and observe from the taste that it is made of blackberries; and then I think of the blackberry patches over

which I strayed in childhood on the hills of Southern Ohio, and of my companion, Charles Isham, who was killed at the battle of Shiloh. And I talk of battles, till my friend speaks of bread and butter. Thirst causes me to go to the spring, and I quaff from its crystal fountain, and listen to the jests hurled at me by my friend, and laugh at his wit. Still on goes the stream of thought.

We have eaten the lunch and gathered the plants, and return home. On the way a sharp, buzzing sound thrills me with horror. I know it as the warning of a rattlesnake. It is a familiar sound to me, for I have found many of these serpents in the wilderness. I look about, and there it is, coiled in the grass. With my cane I strike it a blow, and then another, until it stretches its length on the ground, dead. From the inanimate reptile I pluck the rattles. There are nine on its tail, which it was wont to ring when danger approached—discordant bells whose ringing is a symbol to the woodsman that reptilian hell is lurking near the pathway.

We have reached the river bank, and separate; I climb about it in search of fossils. Soon I discover carboniferous fossils in the rock at the foot of the cliff, and climbing up beside the stream I discover limestone rocks which have come down from the summit of the cliff, and see the same fossils. My explanation of the origin of the cliff, the rapid descent of the river from above, the narrow channel through which it runs, the valley below, and the broad expanse of quiet water, is verified. Now, in my reasoning about the fall of a river into a quiet reach, I used concepts of form in the nature of the channel, and concepts of form in the structure of the rocks. I also used concepts of time in the succession of the rocks, and I reached a conclusion or judgment as to the cause of the rapid which was a judgment of causation, and I confirmed this judgment by reaching the same conclusion from the story of the fossils that I had reached from the story of the geological structure; so concepts verify concepts. On careful examination it will always be found that judgments of causation are verified by the congruence of concepts.

The stream of thought is composed of a series of widely diverse elements, or mentations, that are judgments, all differing among themselves. Now, it is impossible for the mind to dwell on any one of these elements. You cannot think of a scratch long; the mind immediately passes to something else—another sight or sound. Consciousness, which is awareness of a change in self, is the absolute, the independent of thought and that on which inferences are founded; and consciousness is awareness of a succession

of impulses on self or by self, that flow with the rapidity of thought that seems almost to vie with the rapidity of air collisions in sound. Hence consciousness is serial, and inferences are serial, and judgments are necessarily serial; but thought must go on. Gaze into the eye of my lady and think of its sapphirine hue; in a moment you think of something else—the sable curtain, the coy glance, perchance the cerulean heaven, or the deep blue sea. It is impossible to hold your mind for more than a moment on the blueness of the eye; the thought must go on. But on to what? is the question. Tell me in the case of any individual the laws which govern the procession of his thought, and I will tell his name, be it sage or fool. There is always a nexus between contiguous elements in the stream of thought. Sometimes it is mere adventitious association. The thing seen or heard has at some previous time been associated with something else. The touch is associated with the mother's stroke on childish curls; the taste of that particular fruit is associated with an occasion of joy; the perfume of smoke is associated with the burning forest; the song is associated with some scene of glee; the robin is associated with the cottage home. But the nexus of association is not always adventitious. It is often controlled by an established design. With the fool, adventitious relation is the principal nexus of thought in the procession; with the sage, logical relation is the chief nexus.

The links of relation in the chain of thought are not always apparent to the thinker himself. Steps in the procession of reasoning are often cancelled; the mind passes, by great bounds, from one to another. When the steps in the course of logical reasoning have been taken many times, the mind finds it unnecessary to tread the ground again and again, with slow and measured pace, but it springs from point to point, and the greater reasoners make the greater leaps. This is a fact well known to scientific men, but it gives to the procession of mentations those characteristics which cause the greatest wonder to men, and which have led to many of the errors of psychology.

By reflecting on the past and comparing it with the present, we prophesy of the future and often our prophecies are confirmed. By day we prophesy of the night, and the night comes; at night we prophesy of the morning, and the morning comes. As the days, weeks, months, and years, go by, we learn by experience of the changes wrought in self and infer changes yet to be wrought. By experience we discover the changes wrought in others, and by inference judgments are formed of changes yet to be wrought. It is

by experience that we learn of all the changes in environment. The skies change; the seasons change; the river was low yesterday, it is a raging torrent to-day. The acorn bourgeons with leaflets, it sends rootlets into the earth and stem and branch into the air; it grows from week to week, month to month, year to year, and under our experience it becomes a tree. The child is born, it grows to be a lad, a youth, a young man, a vigorous adult, an old man, and the judgments formed are compounded into ideas of becoming. It is thus by reflexion that a vast multitude of judgments are compounded into ideas of the changes wrought by time, and reflexion becomes the special process of cognising metagenesis. As on the wings of perception all lands are viewed, so on wings of reflexion all times are conned. The illimitable past and the illimitable future are all painted on the canvas of now by the artist of reflexion. Things that have been and things to be are emblazoned on the panorama of reflexional concept.

Thus we have ideas of sensation or classification, ideas of perception or integration, ideas of understanding or co-operation, and ideas of reflexion or history, all derived from the germs of sense impression as they have been made on the mind of the individual in moments, hours, days, and years.

A boulder cannot move from the bank into the swift channel in order that it may journey down the stream, but a man may travel from the distant hill to voyage on the river. The leaf cannot flutter in the air unless the air is sweeping by, and the air cannot move as a breeze without antecedent conditions of temperature. Every action is self-action and every passion is self-passion, but the action of one must have its correlate in the action of another, and the passion of one must have its correlate in the passion of another. In this respect animate bodies have a property which separates them from inanimate bodies, in that they perform actions which are self-directed, and in that they have passions that are self-chosen. The animal may choose to enter the current or it may choose to expose itself to the wind, and it may act for these purposes by placing itself under the proper conditions. Heretofore we have attempted to use the term activity in this sense as a chosen act. By such activities design or purpose is expressed. I see a bird fly from tree to tree and think of it as an activity prompted by design. I see a leaf blown from one tree to another and I see an act not determined by choice. All this is intended to make clear the distinction between activities and acts and to show that activities are manifestations of mind. The inanimate body is

conscious of mind, and through the manifestations of mind with others it is led to infer that they also have minds.

In the history of metaphysical philosophy the doctrine of presentative and representative judgments has undergone some strange vicissitudes. The distinction seems first to have been formulated by the terms impressions and thoughts, presentative judgments being called impressions and representative judgments thoughts. Spencer refers to the same distinction when he speaks of vivid impressions and faint impressions. Others have considered presentative judgments as instinctive or intuitive, for such judgments are often made instantaneously and without apparent consciousness of previous judgments. The nature of intuition we have already set forth. Kant also believes that representative judgments are controlled by forms of thought pre-existing in the mind and not derived from experience, in which all judgments are moulded. He supposes the mind to be endowed with the knowledge of space as empty space and of time as empty time, and that the ego fills the empty space and empty time with forms of thought. Thus the metaphysicians have always failed to discover the nature of a judgment with its pentalogic elements, in which both consciousness and choice appear with comparison, which completes the judgment. They also fail to discover that a presentative judgment is only initiated by a sense impression, and that the ego must still recall past impressions in a concept to make the judgment complete, and they also fail to discover that the representative judgment is initiated by recalling a past concept and comparing it with another concept of past judgments.

I see a worm crawling on the ground; the worm causes a sense impression. I might stop to consider its color and have a judgment of sensation, or I might consider its form and have a judgment of perception, or I might consider its motion and have a judgment of understanding, or I might consider its cause as an egg and have a judgment of reflexion, or I might consider that the motion itself is directed molar motion and hence manifests mind in the worm; then I would have a judgment of ideation. Any one of these judgments can be made from the same sense impression, and my interest, my purpose, my choice, determines the nature of the judgment made. But when made it needs verification. If the judgment as a sensation is valid and there is a color, if the judgment of perception is valid and there is a form, if the judgment of understanding is valid and there is a motion, if the judgment of causation is valid and there is an object developed from an egg,

then there is left for consideration the validity of the judgment of ideation, for the worm may not be moving by its own volition, but it may be dragged by an ant. Its motion must be due to an animate and designing cause, which may inhere in the worm itself or in another which is unknown to me, for it is molar motion caused by mind, and in order that I may verify my judgment of mind in the worm I must determine that it is living and free to use its own judgment; such verification comes only by the comparison of concepts. As ideation is the compounding of concepts, so verification in ideation is the comparison of concepts.

In sensation, perception, understanding, and reflexion, concepts are developed by the consolidation of judgments. In ideation we have a faculty by which judgments are added to judgments to constitute concepts and which then continues its power of forming judgments by combining concepts with concepts and forever forming new concepts thereby, while at the same time the power thus developed of comparing concepts with concepts is leading to a re-formation of the concepts themselves by the elimination of fallacies, for when concepts by comparison with concepts are found to be incongruous, the mind refuses to accept them as valid and seeks for the source of error. We must, therefore, discover the means by which concepts are compared with concepts.

We must now shoulder the task of explaining the laws of symbolism or association, which have been assumed from time to time and partially explained in this discussion.

That which I have sometimes called symbolism and that which I have sometimes called association are the same thing. When a sensation which is the result of a sense impression caused by one attribute of a body, is taken as a symbol of the body itself with all its attributes, it becomes a symbol of all with which it is associated. When a sense impression gives rise to a judgment of force it recalls many other judgments of force and thus becomes a symbol of other things. When a judgment of cause is formed it also becomes a symbol of other causes. Sense impressions are directly used by the mind in this manner in sensation, perception, apprehension, reflexion, and ideation, and it is thus that ideas are primarily associated. The memories of judgments are recalled by other judgments, as we have seen, so that not only do judgments which arise from sensations recall other judgments, but these other judgments recall still other judgments, and thus there is recollection in the second degree; and these revivals may go on from de-

gree to degree to an indefinite extent. All of these facts have been illustrated.

As we judge by comparing concepts with other concepts or with impressions, one judgment by a faculty is associated with other judgments by the same faculty, and as one property is concomitant with all the others, one property becomes a symbol of all the others, so that there is association by comparison of concepts and association by symbolism. Hence all our judgments are associated.

The quantitative properties are the reciprocals of the categoric properties, for the one is the reciprocal of the many which compose the one. The one is a kind, and the many is another kind, and the one kind is the reciprocal of the many kinds. So the one form of the body is the reciprocal of the many extensions of the particles. The one motion of the body is the reciprocal of the many motions of the particles, hence the one force of the body is the reciprocal of the many motions of the particles, for the force of the body is the reciprocal of the motion of the particles. The one time of the body is the reciprocal of the many times of a particle, hence the one causation of the body is the reciprocal of the many times of the particles. The one judgment of the body is the reciprocal of the many judgments of the particles, hence the one concept of the body is the reciprocal of the many judgments of the particles.

Judgments of quantitative bodies are reciprocal judgments of classific bodies, hence they are associated by reciprocity. Judgments of one property are concomitants with judgments of another property, therefore they are associated by concomitancy. Now judgments associated by concomitancy are often intuitive in the sense in which that term is used here; so judgments associated by reciprocity are often intuitive. But there are many judgments that are associated not by concomitancy or reciprocity, because they are chosen when we make judgments; of those chosen some are volitional, some discursive. The discursive associations are those usually recognised as such, and again we have association by kind or likeness, by form, by force, by causation, and by concept. Thus it is that the ego remembers by pentalogic properties. Thus association is the law of memory.

Units are associated with units, numbers with numbers, kinds with kinds, series with series, classes with classes, and all are associated in nature and considered in classification. Then extensions are associated with extensions, spaces with spaces, forms

with forms, metamorphoses with metamorphoses, organisms with organisms, and all these are interassociated and these associations are considered in morphology. Then speeds are associated with speeds, motions with motions, forces with forces, energies with energies, powers with powers, co-operations with co-operations, and all of these modes of motion are interrelated or associated and all are considered in dynamics. Again persistencies are associated with persistencies, times with times, causations with causations, metageneses with metageneses, developments with developments, and they are all interrelated and considered in evolution. Finally, sensations are associated with sensations, perceptions with perceptions, apprehensions with apprehensions, reflexions with reflexions, and ideations with ideations, and all are considered in intellection and are represented by words. Then numbers, spaces, motions, times, and judgments, are associated, and kinds, forms, forces, causations, and concepts, are associated, and the quantitative properties are associated with the categoric properties. There is a congeries of associations in which all of the contents of the mind are associated as fast as we cognise the bodies of the universe in their properties and relations.

Certain special associations of discursive thought have received special attention and various attempts have been made to account for them, while the multitudinous associations of thought have been neglected. This partial discussion of the subject has led to the classification of the associations of memory; and two laws have been formulated: the one called the law of likeness and the other the law of contiguity. They have also been formulated as three or more; but the essential nature of association has failed to receive attention because the five associated properties of matter have not clearly been understood; all of these methods, about which scarcely two psychologists agree, have been inadequate to properly set forth the subject. Especially do we notice that contiguity in space has been confounded with immediate succession in time by the habit of using a word with two meanings, and thus confounding succession with position. Particularly intensive associations by which striking events are recalled, because of the deep effects made on the mind, have been observed by thoughtful men for more than twenty centuries. In moods of contemplation a judgment recalls some remote judgment which was startling at the time, and as we go on from moment to moment, recalling a multitude of things by a multitude of associations, this special instance is thrust on the mind and we stop to consider it. I see a rock

which more or less resembles another which I once saw and now recall, together with an event which at that time made an impression on my mind; a man fell over the cliff. I smell the odor of burning brush in the wayside field and I suddenly recall the odor of the fire which I kindled for burning brush-piles on my father's farm. I taste the flavor of a nut and I recall the time when I threw to my shouting companions the walnuts from a wayside tree. Such startling revivals, often repeated, challenge attention, and though thoughtful men have given much attention to the phenomena, it has resulted in a very imperfect psychology of association and symbolism.

* * *

The manifestations of properties are symbols, because one becomes the representative of all the others in the body manifested. When animate beings develop the faculty of reading these symbols, they are said to be able to read the expression of the emotions and are themselves expert in the expression of emotions. Gradually these expressions become more and more artificial as animals advance in culture, until at last a conventional language is devised. This is speech, which is practised by the lower animals, but which is much more highly developed in man. Natural symbolism thus becomes conventional symbolism, and words are signs of concepts. A wholly conventional symbolism is thus devised, the symbols being symbols of concepts. Now, men practically and overtly consider their concepts and a language is a vast reservoir of conventional symbols used for this purpose. There is no human language so crude that it does not have tens of thousands of such symbols, which, put together in propositions or sentences, have the power of expressing all the judgments which the people who use the language are able to make. We now see the enormous development of ideation which man has accomplished by the invention of language.

A judgment is expressed in a proposition by conventional language. Unfortunately, in grammar, subject and object have a different meaning from that which they have in psychology. In grammar the subject means that something about which an affirmation is made, and the predicate means that which is affirmed of the subject, while object has various meanings in grammar. Until the terms of grammar are made to conform with the terms of psychology, there must always be some confusion. Formal logic is the logic of grammar, and the purpose for which it was devised

was success in disputation. Scientific logic is the logic of kinds, and it is of scientific logic that we speak in this essay. The logic of which we speak is the logic of reasoning, not the logic of grammar.

The methods of comparing judgments and concepts are innumerable, and every judgment is an act of comparison, and we are forever judging for the purposes of discovering congruities; an incongruous judgment acts upon a healthy mind as a moral irritant. If this and this judgment do not agree, it is an evidence of ignorance and a suggestion of imbecility. There is no other motive that clings to man so long as the desire for wisdom.