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JANUARY, 1913

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# The Open Court

A MONTHLY MAGAZINE

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

Founded by EDWARD C. HEGELER



BEL MERODACH AND THE DRAGON.

From a Babylonian monument. The god's hands are reversed. (See pages 17 and 19.)

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### Or, Pluralism and Theism

by JAMES WARD

*Sc. D. (Camb.), Hon. LL.D. (Edin.), Hon. D. Sc. (Oxon.)*  
Professor of Mental Philosophy, Cambridge

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## MEMORY. REPRODUCTION AND ASSOCIATION.

BY ERNST MACH.<sup>1</sup>

ON a walk through the streets of Innsbruck, I meet a man whose face, form, walk, and way of speaking stimulates in me the vivid thought of such a face, walk, and so on in different surroundings—on the banks of the Lake of Garda. I recognize the man A, who appears to me as a sense-experience in the present surroundings, to be the same man who makes a part of my recollection with the surroundings R. The recognition, the identification, would have no meaning if A were not given *twice*. Presently conversations with A in R occur to me, I recollect expeditions which I took in his company, and so on. Similar facts which we observe on the most varied occasions can be grouped together in a rule: a sense-experience with the parts A B C D . . . . brings to remembrance an earlier sense-experience with the parts A K L M . . . ., that is to say, the latter idea enters, it is reproduced. Now, since the reproduction of K L M . . . . by B C D . . . . does *not* follow generally, we naturally conclude that K L M . . . . is introduced by the common part A and proceeds from it. On the reproduction of A depends that of K L M . . . . and the parts K L M . . . . were given by the senses *simultaneously* (in temporal contact) with A either directly or with other already reproduced terms. All the processes connected herewith can be reduced to this *single law of association*.

Association is of great biological importance. Every psychological adaptation to surroundings, every common and also every

<sup>1</sup> Translated from *Erkenntnis und Irrtum* by Philip E. B. Jourdain.

scientific experience rest on it. If the surroundings of living beings did not consist of parts which remain at least approximately constant or could be analyzed into periodically recurring events, experience would be impossible and association valueless. Only if the environment remains unchanged can the bird connect the *visible* part of its surroundings with the notion of the locality of its nest. Only if the approaching enemy or the flying prey is always announced by the same noise, can the associated idea cause the reaction of a corresponding readiness for either flight or attack. An approximate stability makes experience possible, and inversely the actual possibility of experience allows us to conclude as to the stability of the surroundings. The *result* justifies our supposition of constancy<sup>2</sup> as based on *scientific method*.

A newly born child is thrown on its own reflex movements, like an animal of lower organization. It has the inborn impulse to suck, to cry if it needs help, and so on. As it grows up it, like the higher animals, acquires the first primitive experiences by association. It learns to avoid the contact of fire and knocking against hard bodies, as these are painful; it learns to connect the notion of the taste of an apple with its appearance, and so on. But soon it leaves all animals far behind it in the abundance and the refinement of its experiences. It is very instructive to observe the formation of associations in young animals, as C. Lloyd Morgan<sup>3</sup> has systematically done with young chickens and ducks hatched in an incubator. The chickens are provided with suitable reflex movements only a few hours after hatching. They run about, peck at whatever attracts their attention and never miss it. Even little partridges may be seen running about while still partly covered with shell. At first the young chickens pecked at everything, at the letters of a printed page, at their own toes, at their own excrements; but in the last case the chicken immediately threw away the ill-tasting thing, shook its head and cleaned its beak by scraping it on the ground. The young bird behaved in a similar way when it took hold of a bee or a caterpillar that had a bad taste, but the pecking at unsuitable and useless objects soon stopped. The chickens left a saucer of water unnoticed, but they drank immediately when in running about their

<sup>2</sup> Experience has taught us to know stabilities, our psychical organization easily adapts itself to them, and gives us advantages. We introduce the supposition of further stabilities consciously and at will, in the expectation of further advantages, supposing this expectation to hold good. The supposition of an *a priori* conception for the founding of this methodical procedure is neither necessary to us nor would it be of any use to us. It would be preposterous in view of the evidently empirical formation of this conception.

<sup>3</sup> *Comparative Psychology*, London, 1894, pp. 85 ff.

feet happened to get into the water.<sup>4</sup> Young ducks, on the contrary, plunged at once into the saucer of water, washed themselves in it, dipped under the water, and so on. When on the next day this saucer was offered to them *empty*, they again plunged into it and carried out the same movements as in the water, but they soon learned to distinguish between the empty saucer and the full one. I myself once put a drinking-glass over a chicken which had been hatched out several hours and put a fly into the glass with it. Immediately a very amusing but fruitless chase began, for the chicken, was not clever enough to catch the fly.

The habits of chickens and ducks are inborn in the young, who practise them at once without being taught. They are prepared for by the mechanism of movement, just as are the sounds the fowls make. We can distinguish in chickens the sound of contentment when they creep into a warm hand; the cry of danger at the sight of, say, a big black beetle; the cry of loneliness, and so on. But however much is mechanically prepared and innate in these creatures, and however much the accomplishment of certain associations may be anatomically favored and made easy, *the associations themselves are not innate but must be acquired by individual experience.*

This will be correct if we apply the word "association" only to (conscious) notions. If we take it in the wider sense of a reaction of simultaneous organic processes upon one another, then it is very difficult to draw the line between what is innate (inherited) and what is individually acquired. And this must be the case if the acquirements of the species are to be increased or modified by the individual. My tame sparrow knows no fear, perches on the shoulders of the members of my family, tugs at hair and beard, defends itself boldly and with angry chattering against the hand which tries to drive it from the shoulder of a privileged person; and yet its wings quiver nervously at every noise and at every movement near it. When it takes little bits from the dining-table, it flies off with each one, even though only a foot away, just like its companions in the street, although it is not disturbed by any acquaintances.

Young chickens which have been brought up in an incubator do not notice the clucking of the hen, neither do they fear a cat or a hawk. If young kittens before their eyes are opened should actually spit when taken up by a hand that has stroked a dog, then

<sup>4</sup>But birds deprived of the cerebrum behave in the same way. The phenomenon thus rests on reflex acquired from ancestors. [Cf. the end of this chapter. Cf. also Mach, *Contributions to the Analysis of the Sensations*, Chicago, 1897, p. 377.—Tr.]

we must suppose this to be a *reflex* of the sense of smell.<sup>5</sup> Young animals to be sure are easily frightened by unusual appearances. Thus, young chickens which were fed on small worms would occasionally swallow also twisted bits of wool, but stood in doubt before a large piece. A tame young sparrow for a long time distrusted its food-dish, when, by way of experiment, a big meal-worm had been put in it.<sup>6</sup> The fear of what is unusual or striking in the case of many animals appears to be one of the most important means of protection.

In the more highly developed animals we can perceive the formation of associations still more strikingly, and at the same time substantiate their durability. In the village in which I passed part of my youth, many dogs, teased by the children of the village, had fallen into the habit of running away on three legs and whining as soon as any one took up a stone from the ground. One was naturally inclined, from a human point of view, to take this for a cunning trick to excite sympathy, but evidently it was only a lively associated remembrance of the pain which had sometimes followed the picking up of a stone. I once saw a young hound which belonged to my father impetuously root out an ant heap, but immediately clean his sensitive nose with his paw in a puzzled manner. From then onwards he carefully respected ants' nests. When once this hound persistently disturbed me in my work by his undesired and exaggerated attachment, I closed a book with a loud bang in front of his nose. He drew back frightened. Thereafter the seizing of a book was enough to keep him from disturbing one. Judging from the play of his muscles in sleep, this dog must also have had a vivid imagination in dreams. Once when he lay sleeping quietly, I brought a little piece of meat near his nose. After some time a lively play of muscles began, especially of the nostrils. After about half a minute the dog woke up, snapped up the bit of meat, and then quietly went to sleep again. I was also able to convince myself of the durability of this same dog's associations. When I came back unexpectedly in the dark and on foot to my father's house after nine years absence, the dog received me with furious barking; but a single call was enough to turn this at once into the most friendly behavior. Hence I consider the Homeric story of Odysseus's dog to be no poetical exaggeration.<sup>7</sup>

<sup>5</sup> Schneider, *Der tierische Wille*, Leipsic, 1880.

<sup>6</sup> Observed by my daughter.

<sup>7</sup> Next to the writings of Morgan, K. Möbius, *Die Bewegungen der Tiere und ihr psychischer Horizont* (Schriften des naturwissenschaftlichen Vereins für Schleswig-Holstein, 1873) on the psychology of lower and higher animals is very instructive. Further cf. A. Oelzelt-Newin, *Kleinere philos. Schriften; Zur*

The importance for psychical development of the comparison of a sense-experience A B C D . . . . with a sense-experience A K L M . . . .reproduced in thought cannot be estimated highly enough. The separate letters may signify whole complexes of elements. A may be, for example, a body which we have once come across in the surroundings B C D . . . but now meet in the surroundings K L M . . .—say a body which moves across its back-ground—and by this means is recognized as a special image of relative *independence*. If now we give the signification of single elements (sensation) to single letters, we learn to know these elements as *independent component parts* of our experience; for example, not only an orange is suggested to us by the red-yellow A, but also a piece of cloth, a flower, or a mineral; thus it enters into *different* complexes. However, not only *analysis* but also *combination* depends on association. For example let A denote the visual image of an orange or of a rose, while K in the reproduced complex denotes respectively the taste of the orange or the smell of the rose. Immediately we associate the already tested properties with the newly apparent visual image. The notions we receive from the things that surround us do not therefore correspond exactly to the actual sensations, but are as a rule much richer. There are whole bundles of associated ideas which, arising from previous experience and becoming complicated with the actual sensations, determine our behavior to a far greater extent than could the sensations alone. We not only see a red-yellow ball, but think we perceive a soft, fragrant and refreshingly acid bodily thing. We do not see a brown vertical shining surface, but, say, the wardrobe. But for this reason we can sometimes be misled by a yellow ball of wood, a painting, or a reflection in a mirror. As we grow older, the variety and richness of our sense-experience increases as well as the number and variety of the associative connections between the experiences. As we have seen, we thus come both to a progressive resolution of these experiences into parts and also to a continual formation of new syntheses from them. After the intellectual life becomes matured, *thought-complexes* can behave with respect to one another in the same productive and associative manner as sense-experiences. In the thought-complexes new analyses and syntheses will also occur, as every romance and every scientific work teaches and as every thinker can observe in himself.

*Psychologie der Seesterne*, Vienna, 1903. Of earlier writings I may recommend: H. S. Reimarus, *Triebe der Tiere*, 1790; J. H. F. Autenrieth, *Ansichten über Natur- und Seelenleben*, 1836.

Although, now, only one principle of reproduction and association can be found, namely that of *simultaneity*, yet the thought-process assumes very different characters in different cases. This will be made clear by the following considerations. Most ideas have associated with many others in the course of their existence, and these associations, branching off in various directions, are to some extent in opposition and weaken one another. If, now, some of those which converge to *the same* point do not maintain the preponderance or are not specially favored by chance, then these associations will not be effective. For instance, can any one say when and where he has used or seen used or learned to know a definite letter, a word, a concept, or a way of counting? The more frequently he uses these devices and the more familiar he is with them, the less will he be able to do so. The name "Smith," even in this definite orthography, is so variously connected with different trades and occupations that by itself it gives rise to no association at all. According to my momentary direction of thought or occupation it may remind me of a philosopher, zoologist, historian, archeologist, mechanician, and so on. We can also observe this in rarer names. I often went past an advertisement of Maggi's meat-extract and only *once*, and then when I was thinking of physics, did it remind me of a man of the same name who wrote a book on mechanics which is interesting to me.<sup>8</sup> Thus, too, the blue color of a piece of cloth will suggest nothing of itself to a grown-up person, whereas it may remind a child of the cornflower which he picked yesterday. In connection with the name "Paris," there may occur to me the collections of the Louvre, or the city's renowned physicists and mathematicians, or its fine restaurants, according as I am inclined to the pleasures of art, scientific occupation, or culinary delights. Circumstances which stand in no material relation to the direction of thought entered upon may also be decisive. In this way Grillparzer is reported to have remembered a poetical sketch which he had quite forgotten owing to a long illness, when he again played the symphony which he had played when engaged upon that sketch. Jerusalem shows from a case<sup>9</sup> reported by him that associations can be induced through unconscious intermediate terms. The principle of *simultaneity* is expressed in these cases very clearly and distinctly.<sup>10</sup>

<sup>8</sup> [G. A. Maggi, *Teoria delle movimento dei corpi*, Milan, 1895.—Tr.]

<sup>9</sup> Wundt's *Philosophische Studien*, Vol. X, p. 323.

<sup>10</sup> That not all psychical events can be explained by temporarily acquired (conscious) associations, will be discussed later. Here we are concerned with *what is made comprehensible by association*.

Let us now consider some types of the thought-process.<sup>11</sup> If I, without any plan or purpose, and shut off as far as possible from outer disturbances—say in a sleepless night—quite give myself up to my thoughts, then it happens that they ramble over all sorts of subjects. Comic and tragic situations that I have remembered or divided mingle with scientific incidents and plans of work, and it would be very difficult to point out the petty chances which in each moment have given direction to this “free imagination.” Not very differently do ideas arise when two or more persons are talking without constraint to one another, except that here the thoughts of several persons influence each other. The surprising leaps and turns of conversation often give rise to the wondering question: Well, how did *that* idea come up? The fixing of thoughts by spoken words and the number of observers makes the answer easier in this case, and only seldom does it fail. In dreams ideas pursue the most wonderful paths, but in this case the thread of association is very difficult to follow, partly on account of the incomplete remembrance which the dream leaves behind it, partly also on account of more frequent disturbance because of the great sensitiveness of the sleeper. Situations that have been experienced, forms that have been seen, and melodies that have been heard in a dream are often very valuable for *artistic* creation;<sup>12</sup> but the scientific *investigator* can make use of dream-thoughts only in the rarest cases.

Lucian's priceless Münchhausen-like tales do not quite correspond to the type of *free* imagination. This most talented writer of the ancient world here maintains on *principle* only the most adventurous and unlikely of his incidents. He speaks of huge spiders which connect the space between the moon and the morning-star with a web that can be used as a pathway and jokingly assigns liquid air as a drink to dwellers in the moon, 1700 years before it was really known. It is a plan of travel on which, as a guiding thread, he strings his imaginations. This journey brings him to the island of dreams, whose indefinite and inconsistent nature he characterizes wonderfully by saying that the nearer the traveler approaches to it the farther it recedes. In spite of this richly luxuriant imagination, the threads of association can be found wherever they are not purposely hidden. The journey begins at the Pillars of

<sup>11</sup> James, *The Principles of Psychology*, Vol. I, pp. 550-604.

<sup>12</sup> Well-known cases of this kind are the following: Voltaire dreamed a complete and varied canto of the *Henriade*. Still more remarkable is it that in a dream of Tartini's the devil played the theme of a sonata which the artist had not composed in waking moments;—if poetry and truth have not made a compromise in this story.

Hercules and goes westward. After eighty days the traveler reaches an island containing a memorial column and an inscription to Hercules and Dionysus, as well as the huge footprints of both gods. Of course there is a river on the island which contains *wine*, and fish the eating of which makes people intoxicated. The sources of this river spring from the roots of a luxuriously growing vine on whose branches are women who, like Daphne, have been partly changed into vines. Here the thread of association has swollen to a strong rope. At other places the author has even cut away shoots and flowers of his imagination which did not suit his esthetic and satirical purpose. By this rejection of what is useless, the intellectual life expressed in a literary or other equally free work of art differs from aimlessly giving oneself up to his own thoughts.

If I come to a place and into surroundings in which I spent a part of my youth, and if I simply give myself up to the impressions that these surroundings make on me, then *another* type of thought-process results. What is there offered to my senses is in so many ways associated with the experiences of my youth and is connected so weakly or not at all with later incidents, that little by little *all* the events of that period of my life emerge from forgetfulness with complete fidelity and in firm connection with one another in consecutive arrangement of time and space. In such a case, as Jerusalem<sup>13</sup> pertinently remarks, one always discovers himself to be a participant. Hence we can string the elements of remembrance in a temporal order on the thread of the person. A similar thing happens, though less completely, when the picture of my home arises in my mind, provided that the picture is not disturbed and is given time to complete itself. The tales every one has heard old people tell of their youth, or their account of summer holidays and their experiences in them, in which the slightest incident is not left out, are examples of this type.

The foregoing case was essentially concerned with the *revival* of already existing connections of ideas, that is, with simple recollections; whereas the solving of a conundrum or other riddle, of a geometrical or technical problem of construction, or of a scientific question, or the carrying out of an artistic subject, and so on, requires a thought-action with a definite end and object.<sup>14</sup> In this case something *new*, at the time only partly known, is *sought*. This thought-action, which never loses sight of the more or less circumscribed purpose, we call *reflection*. If a person who gives

<sup>13</sup> Jerusalem, *Lehrbuch der Psychologie*, 3d ed., Vienna, 1902, p. 91.

<sup>14</sup> [Cf. *Popular Scientific Lectures*, Chicago, 3d. ed., 1898, p. 277.—T.]

me a riddle or puts a problem to me is standing before me, or if I am sitting at my desk on which I already see the traces of my materials for work, in this way a complex of sensations is provided which always brings back my thoughts to the end in view and prevents their aimless wandering. This limitation of thought from the outside is not to be underestimated even for its own sake. If with a scientific problem in my mind, I finally go to sleep tired out, then immediately the external reminder and indicator to the goal is lacking and my thoughts become diffused and leave the proper path. This is one reason why the solution of scientific problems is seldom helped in dreams. But if the involuntary interest in the solution of a problem is strong enough, then the reminders from outside are quite superfluous. Everything that one thinks and notices then leads back of itself to the problem, at times even in a dream.

The idea sought in reflection has to fulfil certain conditions. It has to solve a riddle or a problem or to make a construction possible. The conditions are known but not the idea. In order to explain the kind of thought-movement which leads to finding what is looked for, we will choose a simple geometrical construction. The

form of procedure is the same in all the cases coming under consideration here, and *one* example is enough to make all cases comprehensible. Two mutually perpendicular straight lines  $a$  and  $b$  (Fig. 1) are cut by any oblique third line  $c$ . In the triangle thus arising, a square is to be inserted whose angular points are placed on  $a$ ,  $b$ , the point of intersection of  $a$  and  $b$ , and on  $c$ . We now *try* to represent to ourselves and construct squares which fulfil all these conditions. Three angles are enough to satisfy the conditions if we let one angle of any square coincide with the point of inter-

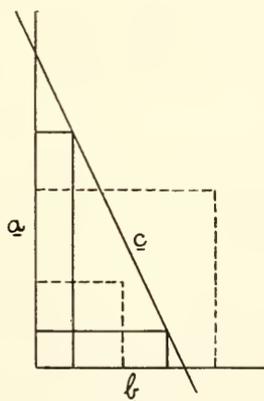


Fig. 1.

section of  $a$  and  $b$  and two sides of the square with  $a$  and  $b$ . But the fourth angle does not fall directly on  $c$ , but inside or outside the triangle. If, on the other hand, we take one angular point anywhere on  $c$ , the rectangle thus formed is not generally a square. But we see that from a rectangle with greater vertical sides we can pass over to a rectangle with greater horizontal sides by the choice of the angular point on  $c$ , so there must be an intermediate one with equal sides. Thus we can select the square with any approximation we wish, from among the series of inscribed *rectangles*. But there

is still another way. If we start from a square whose fourth angular point falls inside the triangle and increase it till this angle falls outside, it must in this way pass through *c*. Thus a square of the correct magnitude can be selected with any desired approximation among the series of squares. Such tentative soundings of the realm of ideas where we must seek for the solution of the problem, naturally precede the complete solution. Ordinary thought may content itself with an approximate solution which is sufficient for practical needs. Science demands the most general, the shortest and the most lucid solution. We obtain this by recollecting (starting from the consideration either of the rectangles or of the squares) that all inscribed squares have as common diagonals the angle bisector proceeding from the point of intersection of *a* and *b*. Thus, if we draw this angle bisector from this *known* point, we can complete the desired square simply by finding the point of intersection of this bisector with *c*. Though this example is very simple—it is intentionally chosen as such and very fully discussed—it makes us clearly conscious of the essential part of the solution of every problem, namely, *experimentation with thoughts and with recollections*, as well as its identity with the familiar solution of riddles. The riddle is solved by means of a notion which shows properties corresponding to the conditions A B C . . . . Association affords us a series of notions of the property A, of the property B, and so on. The term or terms which belong to *all* these series—in which all these series meet—solves the problem. We will return at still greater length to this important subject. Here it is only our intention to explain that type of thought-process called *reflection*.<sup>16</sup>

What has preceded puts beyond doubt the importance of reproducible and associable traces of recollection of sense-experiences for our whole psychical life, and shows at the same time that psychological and physiological researches cannot be separated from one another, since even in the *elements* of the experiences relations of both kinds are most closely connected.

Reproducibility and associability also form the basis of “consciousness.” The unintermittent subsistence of an invariable per-

<sup>16</sup> We may be tempted to consider that “active” reflection is essentially different from the “passive” leaving of our thoughts to take their own course. But, just as we are not masters over the sensations and recollections which are liberated by some act of our bodies, so we have no power over a thought of direct or indirect biological interest which is always reappearing and to which new series of associations are always being joined. Cf. my *Populärwissenschaft. Vorlesungen*, 3d ed., pp. 287-308 [*Popular Scientific Lectures*, 3d ed., Chicago, 1898, pp. 259-281].

ception will hardly be said by anybody to be consciousness. Hobbes<sup>17</sup> says, "Always to perceive the same object and not to perceive at all come to the same thing." Nor is it evident what is to be attained by the assumption of a special "energy of consciousness" different from all other physical energies. That would be an assumption which would have no function at all—would be unnecessary—in the province of physics, and in the province of psychology would make nothing clearer. Consciousness is no *special* (psychical) *quality* or class of qualities, which differs from physical qualities; nor is it a special quality which must be added to the physical ones in order to make conscious what is unconscious. Introspection as well as observation of other living beings to which we must ascribe consciousness analogous to our own, shows us that consciousness has its roots in *reproduction* and *association*, and that the height of consciousness runs parallel to the richness, fluency, rapidity, vitality, and arrangement of these functions. Consciousness does not consist in a special quality, but in a *special connection* of given qualities. We must not wish to explain sensation. It is something so simple and fundamental that its reduction to something still more simple cannot be successful, at least not at present. A single sensation is neither conscious nor unconscious. It becomes conscious by classifying it with the experience of the present time.<sup>18</sup>

Every disturbance of reproduction and association is a disturbance of consciousness, and can manifest all degrees from complete clearness to entire loss of consciousness in dreamless sleep or in a fainting fit. Temporary or lasting disturbance of the connection of the cerebral functions is also a temporary or lasting disturbance of consciousness. Comparative anatomical, physiological and psychopathological facts necessitate the supposition that the integrity of consciousness is conditioned by that of the cerebral lobes. Different parts of the cerebral cortex show traces of different sense-excitations, definite parts show those of the optical sensations, others of the acoustical, others of the tactile, and so on. These different cortical areas are connected with one another in numerous ways by means of the *fibers of association*. Psychical disturbances follow every cessation of the function of an area of the cortex and every inter-

<sup>17</sup> *Sentire semper idem et non sentire ad idem recidunt*; Physica, IV, 25.

<sup>18</sup> Whoever thinks that he can build up the world from consciousness has not made it clear to himself what sort of a complication the fact of consciousness includes. A very condensed and valuable discussion of the nature and conditions of consciousness is to be found in Wernicke's *Gesammelte Aufsätze*, Berlin, 1893 (on consciousness, see pp. 130-145). Cf. also the lectures of Meynert cited in the following note.

rupted connection.<sup>19</sup> Without going into many details, we will illustrate this by typical examples.

The notion of an orange is an extremely complicated thing. Form, color, taste, smell, touch, and so on are interwoven in a peculiar way. If I hear the *name* "orange" this train of acoustic sensations drags forward the whole bundle of the above notions as if by a thread. In addition to this there follows, as a consequence of the name which has been heard, the remembrance of the sensations experienced at the sound of the name, and also the remembrance of the sensations of the motions of writing the word and the visual form of the written or printed word. Accordingly, if there are in the brain special optical, acoustical, and tactile areas, and if one of these is eliminated by the suppression of its function or the removal of its association with the remaining areas, peculiar phenomena appear. Such have actually been observed. If the optical or the acoustical area continues to function while its associative connections with other important fields cease to function, then "mental blindness" (*Seelenblindheit*) or "mental deafness," which Munk has observed in dogs by operations on the cerebrum, respectively arise.<sup>20</sup> Such dogs *see* but do not *understand* what they see; they do not recognize their food-dish, the whip, or a threatening gesture. In the case of mental deafness the dog *hears* but pays no attention to the well-known call—it does not *understand* it. The observations of physiologists are here supplemented and confirmed by those of psychopathologists. The study of disturbances of speech<sup>21</sup> is especially productive here. The meaning of a word lies indeed in the crowd of associations which the word calls up and the correct use of it rests inversely on the existence of these associations. Disturbances of the latter must express themselves here in a striking way. Most people are *right*-handed, and thus use the *left* hemisphere of the cerebrum for finer work and also for speech. Broca recognized the importance of the hinder part of the third left brain-convolution for articulate speech. Speech is always lost when this part of the brain becomes ill (apoplexy). Loss of speech (aphasia)

<sup>19</sup> Meynert, *Populäre Vorträge*, Vienna, 1892, pp. 2-40.

<sup>20</sup> It can hardly be doubted that there is a difference in the work performed by different parts of the brain. But if, as Goltz has shown, a part of the cerebral cortex can by degrees replace the others, an *abrupt* delimitation of functions is not to be thought of, but only a "gradual localization" in the sense of R. Semon (*Die Mneme*, Leipsic, 1904, p. 160). Cf. also *Analyse der Empfindungen*, 1886, p. 82, 4th and 5th ed., p. 165. [*Contributions to the Analysis of the Sensations*, Chicago, 1897, pp. 112, 115, 116. The full title of R. Semon's book is: *Die Mneme als erhaltendes Prinzip im Wechsel des organischen Geschehens*, and a third edition was published in 1911.—Tr.]

<sup>21</sup> Kussmaul, *Störungen der Sprache*, Leipsic, 1885.

can also be conditioned by very many different defects. For example, the patient remembers words as sound-images and can also make them known by means of writing, yet cannot speak the words in spite of the mobility of the tongue, lips and so on: the *motor* word-image is lacking and does not liberate the suitable movement. The optical or motor *writing-image* may also be lacking (agraphia). The ideas may be present while the auditory word-image is lacking. It may also happen the other way round that the spoken or written word is not understood—gives rise to no associations—and then we have *word-deafness* or *word-blindness*. Such a case of word-deafness and word-blindness with an intelligence otherwise unimpaired Lordat himself experienced and after his cure was able to give an account of it. He movingly describes the moment when, after many sad weeks, he noticed on the back of a book in his library the words *Hippocratis opera*, and could again read and understand them.<sup>22</sup> Even after this summary and by no means complete and detailed account of the cases here presented, we can estimate how many paths of connection between the sensory and motor areas come into consideration.<sup>23</sup> Lesser disturbances of speech, as expressed by mistakes in writing and speaking, appear as consequences of temporary weariness and preoccupation among quite healthy people. Thus someone cited the two chemists Liebig and Mitscherlich as “Mitschich and Liederlich.” Another called a *Magister der Pharmacie* a *Philister der Magie*.<sup>24</sup>

An interesting case of mental blindness is reported by Wilbrand.<sup>25</sup> A very cultured and well-read merchant enjoyed an extraordinary visual memory. The features of the people whom he remembered, the forms and colors of objects of which he thought, and theatrical scenes and landscapes he had seen, appeared before him in complete clearness with every detail. He could read from memory parts of letters and several pages from his favorite authors, for he saw the text before him with all its details. His memory for auditory impressions was small and his sense of music was lacking.

<sup>22</sup> Kussmaul, *op. cit.*, p. 175.

<sup>23</sup> Kussmaul, *op. cit.*, p. 182.

<sup>24</sup> On curious disturbances among musicians, analogous to aphasia and agraphia, cf. R. Wallaschek (*Psychologie und Pathologie der Vorstellung*, Leipzig, 1905).

[In the text, we have had to leave the German words to tell their own tale, as the point would obviously be lost in an English translation. English equivalents are the probably mythical utterances, called “Spoonerisms,” of a certain Oxford professor. Thus, instead of: “We are all standing on the same dead level,” the professor is reported to have said: “We are all standing on the same lead devil.”—Tr.]

<sup>25</sup> Wilbrand, *Seelenblindheit*, Wiesbaden, 1887, pp. 43-51.

Heavy cares, which proved to be unfounded, were followed by a time of confusion, and this again by a complete change in his psychological life. His visual memory was completely lost. A town to which he often returned appeared new to him every time. The features of his wife and children were strange to him, and he even looked upon himself as a strange person when he saw his reflection in a looking-glass. If he now wished to reckon—an operation which he formerly performed by visual images—he had to pronounce the numbers, and he was likewise obliged to have recourse to auditory images and images of motions of speech and writing in order to note phrases or to remember what was written. No less remarkable is another case of loss of visual memory.<sup>26</sup> A lady had a sudden and violent fall. Afterwards she was supposed to be blind since she did not recognize any one around her. But the fall, besides restricting her field of vision which gradually improved, left only the loss of visual memory of which the patient was fully conscious. She made the characteristic comment: "To judge from my condition, we see more with our brains than with our eyes; the eyes are merely the means for seeing; for I see everything clearly, but I do not recognize it and often do not know what I see."<sup>27</sup>

In the light of the above cases, we must say that there is not *one* memory but that memory is made up of several *partial memories* which are separated from one another and can be separately lost. To these partial memories correspond different parts of the brain, some of which can even now be localized with a fair degree of accuracy. Other cases of the loss of memory seem more difficult to reduce to a principle. We will only consider some of them which Ribot<sup>28</sup> has collected.

A young woman, who passionately loved her husband, fell in childhood into a prolonged unconsciousness and as a consequence of this her memory of the time of her marriage entirely vanished while her memory of her earlier life up to her marriage remained quite unimpaired. Only the witness of her parents led to the acknowledgment of her husband and child. The loss of memory in her case remained irreparable. Again, a woman fell into a torpor which lasted for two months. After she woke up she knew nobody round her and had forgotten everything she had learned. Easily and in a short time she learned everything again, but without any

<sup>26</sup> Wilbrand, *op. cit.*, p. 54.

<sup>27</sup> Wilbrand, *op. cit.*, p. 57.

<sup>28</sup> *Les maladies de la mémoire*, Paris, 1888. English edition, Chicago, The Open Court Publishing Co., 1898.

remembrance that she had known it before. Yet again, a woman fell by chance into some water and was nearly drowned; when she opened her eyes she did not recognize her surroundings and had lost her speech, hearing, smell, and taste. She had to be fed. She daily began to learn anew and her condition gradually improved. She remembered a love-affair and her fall into the water and was cured by jealousy.

Periodic losses of memory are the most remarkable. After a long sleep, a woman had forgotten everything she had learned. She had to learn again how to read, reckon, and become acquainted with her surroundings. After some months she had another deep sleep. When she awoke, she found herself in possession of memories of her youth just as before her first sleep, but had forgotten what had occurred between the two periods of sleep. From then onwards for four years the two states of consciousness and memory were repeated periodically. In the first state she had beautiful handwriting; in the second, a poor one. People whom she was supposed to know permanently had to be introduced to her in both states. This case is illustrated by one often quoted of a servant who lost a parcel when he was drunk and could only find it again when he was in a second drunken fit. In a waking state one remembers even one's vivid dreams with difficulty, and inversely in dreams the conditions of a waking state mostly quite vanish from us. On the other hand the same situations often enough repeat themselves in a dream.<sup>29</sup> Finally every one can notice for himself, even when he is awake, the changes of moods with which the experiences of different periods of his life come into consciousness in quite different degrees of vividness. All these cases form a continuous passage from the sharp separation of different states of consciousness to almost complete effacement of the boundary. These cases can be considered as examples of the formation of different *centers of association* round which the masses of ideas group themselves when favored by time and mood, while these masses show no degree of connection, or only a small one, with one another.<sup>30</sup>

If, with Hering,<sup>31</sup> we attribute to the organism the property of

<sup>29</sup> [A friend of mine dreamed that he was buying things in a shop. In the dream he suddenly became conscious of the fact that he had forgotten what to buy next and could only remember if he woke up. So he woke up, remembered, and then went to sleep and continued *the same* dream.—Tr.]

<sup>30</sup> With reference to such periodical disturbances of memory, observations like those of Swoboda (*Die Perioden des menschlichen Organismus*, 1904) do not appear so adventurous as they do at first sight.

<sup>31</sup> [*On Memory and the Specific Energies of the Nervous System*, Chicago, 1895.]

adapting itself better successively as events are repeated, then we recognize what we commonly call memory to be a partial phenomenon of a *general* organic phenomenon. It is the adaptation to periodic events in so far as it directly comes into consciousness. Heredity, instinct, etc., may then be characterized as memory stretching out beyond the individual. In R. Semon's book *Mneme*, above cited, appears the first endeavor to investigate and to clarify scientifically the relation between heredity and memory.<sup>32</sup>

<sup>32</sup> Detto ("Ueber den Begriff des Gedächtnisses in seiner Bedeutung für die Biologie," *Naturwiss. Wochenschr.*, 1905, No. 42). The author will hardly admit that Hering or Semon fall into the faults denounced by him. The advantages of the investigation of what is organic from *two* sides he appears to me to underestimate. *Psychological* observation can reveal to us the existence of *physical* events the knowledge of which we could not attain so soon by a physical way.

## EVOLUTION OF ARTISTIC OBSERVATION.

BY THE EDITOR.

MR. JAMES ARTHUR, of New York, calls attention to the carelessness with which the artists of ancient Egypt treated the hands in their bas-reliefs. He writes in a personal note:

"During my last trip to Egypt I noticed that the right and left hands on sculptures were rarely placed properly. All combinations can be seen,—(1) two left hands, (2) two right hands, (3) right and left reversed, and (4) both hands correctly placed. Fellow travelers had not noticed this till I pointed it out. We are all acquainted with 'conventions' in art, but surely it is remarkable that such a glaring error should be perpetrated for thousands of years. Have any of the writers on Egypt dwelt on this?"

Mr. Arthur encloses a card of a monument in Edfu in which the hands are glaringly misplaced, and in reply to his question I must confess that I have nowhere as yet found this strange mistake pointed out by Egyptologists. But the ancient Egyptians are not isolated in this peculiarity. The same fault is found in the monuments of other nations. Several years ago my attention was called by a French artist, M. de Gissac, then residing at Cairo, Illinois, to an ancient Babylonian monument representing Bel Marduk's fight with a monster of Tiamat's host, where both hands are wrong. A study of the evolution of art is still in its infancy. Artistic observation seems to us simple enough, and in our art schools every scholar is required to reproduce nature as he sees it. This was done not only in Egypt, Babylon and Greece, but also in China and in Japan, and yet the Chinese in their classical period reproduced nature in a different style, without true perspective and with other characteristic deviations. The truth is that people see nature differently.

It is noteworthy that in ancient paintings attention to detail

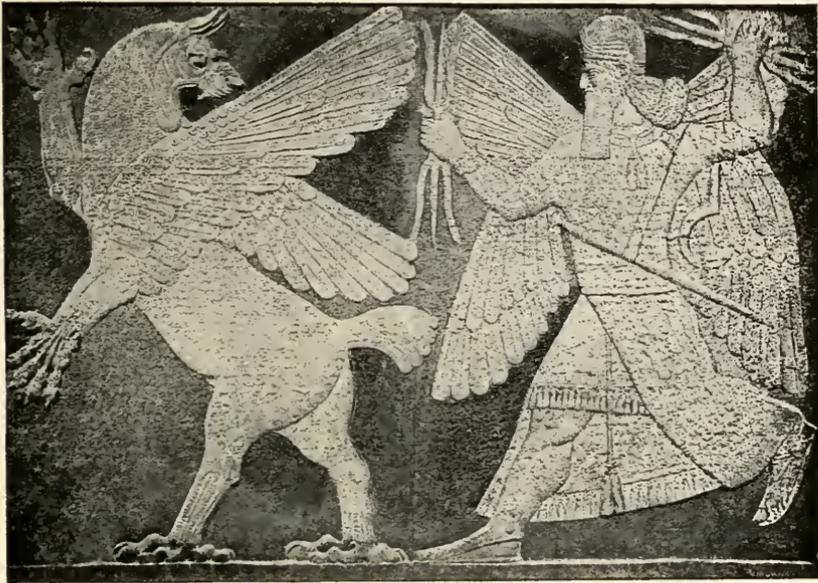
is missing, and the artists of former centuries blundered greatly in their representation of animals, and especially also of trees and plants. So far as our limited knowledge of the literature of this



EGYPTIAN BAS RELIEF FROM EDFU.

branch goes we can point to only one book which has made an attempt to reveal to us the gradual development of artistic observation. We refer to a German work by Felix Rosen, entitled *Die*

*Natur in der Kunst*,<sup>1</sup> which is devoted to this special study of nature as represented in art, and it is interesting to note that animals first came to the attention of artists in the order in which they become familiar in our nurseries to-day. First horses and dogs, then lions and tigers impress the imagination of children, and these animals precede all others in art representation. Plants remained unheeded for a long time and trees appeared first in conventionalized form as trunks with round crowns of foliage so as to render it difficult to say what kind of a tree the artist intended. The representation of flowers passed through similar stages. Even grass appears



FIGHT BETWEEN BEL MERODACH AND TIAMAT.

first in single bunches and only much later in the shape of sod. Details of nature keep step with the interest men take in the same things.

Referring to a painting by Taddeo Gaddi (the "Triumph of Death" in the Campo Santo of Pisa) which in the observation of nature shows a great advance over Giotto, Felix Rosen calls attention to the animals here represented, the stags, a rabbit, an owl, a pheasant and especially the horses and dogs. Mentioning the spaniel, the bulldog and the greyhound, he says: "Thus the three breeds of dogs are very well indicated not only by the difference in form but

<sup>1</sup> Leipsic, Teubner, 1903.

even in temperament. Again we find the same surprising knowledge of the forms of animals, in the demons that are dragging souls of men after them through the air, bats' heads and wings, goats' hoofs or the claws of birds of prey, and coiled serpents' tails.

"Plant life and the surface of the earth upon which it grows are not portrayed with the same skill. The trees, set in the most impossible places on the rocky ground, are represented with uniformly straight trunks and round tops, and only with the best intentions can they be recognized as possibly maple, orange or lemon



DETAIL FROM THE "TRIUMPH OF DEATH."

This detail shows the dogs and pheasant but is too limited to show all the other animals mentioned by Rosen in his description. See his book, page 52.

trees. The herbs in the foreground are quite isolated, each standing by itself wherever room could be made for it in the picture. They are purely forms of the imagination founded very vaguely upon the motives of the clover, violet and fern; we even see them sometimes entirely without the foreshortening of a proper perspective.

"At first glance it may seem strange that an artist who shows himself to be a connoisseur in the animal world should betray such ignorance in regard to plants. And yet nothing is easier to understand than this fact. Man's interest is naturally first directed

towards the animal world which is far closer to his comprehension and sensibilities than the vegetable realm. Just as the child becomes acquainted with lions, tigers and elephants much earlier than with oaks and poplars, apple trees or strawberry shrubs, even though he comes in contact with the latter much oftener than with wild animals, so a nation in the lower grades of civilization will distinguish the more remarkable animals better and earlier than plants. Townsfolk in particular—and painters in these periods came almost exclusively from the towns—become first acquainted with the domestic animals, the horse, dog, ox and ass, and then with the wild animals of the chase and the birds in the branches, and finally with the grewsome and disgusting animals, such as bats and serpents. But with these classes their zoology is almost exhausted. The plants which they first observe are the fruit and ornamental trees of the gardens, and less noticeable are the modest herbs or wild plants of the forest. Such is the natural course of knowledge; and since we observe this sequence also distinctly indicated in the history of paintings we feel justified in our opinion that the representation of nature in art is unfolding before our eyes and that its defects should be ascribed in the first place to insufficient knowledge and only secondarily to the so-called feeling for style.

“Comparative philology gives us further proof for the phenomenon which we have repeatedly emphasized, that trees received consideration and appreciation earlier than herbs. Thus among the Aryan languages we find common words for many animals and for the most important trees, beech, willow, pine and fir, a reminiscence for the different peoples of their common home in central Asia. On the other hand we have no positive case of the names of herbs which show a common primitive origin. This important phenomenon may be partly explained by the grade of civilization which the Aryans had reached at the time of their separation into migratory groups. The cultivation of grain was still in its infancy and horticulture was not yet known. But this does not explain everything. The German and English names for lily, rose and violet are words taken from the Latin and were not original to their common ancestry; the Romans brought us these garden plants and their names at the same time. But there are wild lilies in Germany, though not abundant, and wild roses and violets grow in profusion. They were recognized as kin to the Italian cultivated plants because they had been given the same names. Would it not have been more natural to have given the imported plants the names of their native kindred? In this way, as we have seen, the Greeks regarded lemons as Median



THE HERMITS OF THE THEBAN DESERT.  
By Pietro Lorenzetti.

apples, and it did not occur to them to reverse the process and give the apple-tree the Median name of *Citrus Medica*.

"The naturalized words, rose, lily, violet, not to mention many others, prove to us either that Germanic names were lacking for these species or were of little importance or limited in their diffusion. How little acquainted people were in those early days, when all civilization was confined to the cities, with the plants that grew far from cities and perhaps only in mountain ranges, we learn from the classical example of the horsechestnut tree of which ancient Greek botanists knew nothing although it grew wild in the close vicinity of their native land, in Macedonia, Epirus, and even in northern Greece—though to be sure only in the mountains. Such a conspicuously beautiful tree could not of course be overlooked hence the ancient botanists must have been entirely unacquainted with the mountain forests of northern Greece. The horsechestnut tree reached northern Europe through the mediation of the Turks."

Speaking of another picture in the Campo Santo of Pisa, belonging to the same series and representing the life of a hermit, Rosen goes on to say:

"Here the scenery, sown most arbitrarily with rocks, is interesting because the drawing of the trees is improved. Besides the palm, which is supposed to characterize the scene as an Egyptian landscape, because it is intended to represent a Theban desert, we can recognize also the characteristic trees of Italy, the native or cluster pine (*Pinus Pinaster*), the olive-tree (*Olea Europaea*), the evergreen holm-oak (*Quercus Ilex*) and maple, finally also the best fruit-trees, oranges and lemons. But even here the herbs are given only imaginary forms.

"Thus in the fourteenth century the sense of nature makes progress, even though but slowly. The world is no longer portrayed in such striking contradiction to truth as in the days of Giotto, though it is still far from natural. Vegetation gradually becomes richer; foliage is better drawn as by Giovanni da Milano, the herbs on the ground grow more thickly together, and in the hands of Spinello Aretino show greater variety. In his work we can begin to recognize definite herb motives, such as fernlike fronds, clover leaves and violet leaves. The first actually distinguishable plant is the dandelion with its characteristically serrate foliage.

"Grass was not combined with the herbs until much later and was only indicated by a few green strokes always placed in little detached bunches. These early periods still betrayed no knowledge of turf. All herbs stood singly by themselves and did not form a

higher unity with the grass. Early art did not start with complex concepts such as turf, meadow or forest, but attained these ideas by adding together herbs, bunches of grass and single trees. However at this point the synthetic process is not yet complete. The dispersion of plants over the scene still remains entirely arbitrary. It



DETAIL FROM THE "MIRACLE OF ST. FRANCIS."

By Spinello Aretino.

is everywhere noticeable that only the need of enlivening the empty spaces determines the painter in the choice of the spots in which he places trees, herbs or grass. None of these artists recognize that the closest natural connection exists between the ground and the vegetation which it produces."

SOME INTERESTING PHASES OF THE CON-  
TACT OF RACES INDIVIDUALLY  
AND *EN MASSE*.

BY ALEXANDER F. CHAMBERLAIN.

SINCE the beginnings of great human civilizations as contrasted with the simpler and more primitive life which the great majority of mankind outside of them continued to live *more suo*, one of the most interesting of all the phenomena of the race's history has been (as it still is) the contact, sometimes the shock and conflict, of these two expressions of the ideas and the ideals of man.

This contact has both a humorous and a pathetic aspect. It is humorous when we view the man of the "higher civilization," in spite of his learning, his scientific knowledge, and all those other "superior" things for which his "culture" stands, at his wit's end among a naive and simple people of another race; or, if we follow some savage or "young barbarian" in his first crude attempts to understand and to interpret the "civilization" in the midst of which he suddenly finds himself, often by no act or intention of his own.

It is humorous, too, when we can watch the efforts of two individuals of different races and of different stages or forms of human progress, one of whom (usually the representative of the "higher civilization") is endeavoring as speedily as may be to inform himself regarding the language, habits and customs, arts and industries, mythology, philosophy and religion of a more or less primitive people, and the other is either honestly engaged in the transmission of such material as he really possesses, or thinks he does, or, since delight in such action is generally human, is occupying his time with deceiving and gulling his inquisitor to his heart's content.

It is pathetic, when we have to consider the more or less wanton destruction of primitive races by the white race in particular, and the

failure of so many well-meant but often misdirected schemes for the social, religious or political welfare of "the lower races."

It is pathetic, too, to know some good and wise old "savage" who sees the coming doom of his race, recognizes its injustice, feels his utter inability to avert it, and goes to his grave with the firm conviction that the race which has so ruthlessly exterminated his own will one day itself meet destruction as swift and as ineluctable.

It is pathetic, again, when institutions in immemorial use among primitive peoples are abolished at a stroke by their white conquerors and no real substitute for them offered, the "higher" race contenting itself with an attempt to transplant ideas and institutions, which among themselves have never been thoroughly successful, nor have been shown to be of world-wide application.

#### SOME PITFALLS OF LANGUAGE.

The truth contained in the famous couplet of Pope

"A little knowledge is a dangerous thing,  
Drink deep, or touch not the Pierian spring"

is borne in upon the investigator from all sides. Ignorance, on the part of inquirer or subject or of both, is naturally the source of many errors in recording the speech of primitive people, as it is also in other fields of research where savages (or children) are concerned. Vocabularies have not infrequently been recorded when the civilized investigator has had absolutely no personal knowledge of the language of the savage or barbarous people among whom he was for the time being, while, on the other hand, the primitive individual whom he was questioning had as little acquaintance with the stranger's mother-tongue, both using often, as their sole means of intercommunication, sign-language only half understood, or some jargon imperfectly controlled by both parties. Where "a little knowledge" is present there are many chances for error.

Some years ago, when beginning his studies of Algonkian philology among the Mississaga Indians of Skugog, Ontario, the writer had occasion to ask an Indian, supposed to know some English, what was the Mississaga word for "honey-comb." The answer was *amo pinokwan*; and, upon a second inquiry, *amo sisibakwat pinokwan*. Now, *pinokwan* signifies "comb," but one used for the hair, and not the sort to be found in hives; *amo* means "bee"; and *sisibakwat* is "sugar." Both expressions are, therefore, linguistic as well as biological nonsense. The Indian, with imperfect *Sprach-*

*gefühl* for both his mother-tongue and the foreign language, or perhaps with intent to deceive the white man, just "translated" the word *honey-comb* literally, and let it go at that.

Absolute, intentional deceit has often occurred. The "savage" sometimes coins words or phrases to please or to delude his questioner. The same thing happens in child-language, where the young human takes delight in deceiving his adult observer, or in catering in fanciful mode to his unfortunate suggestions. Child-study could, doubtless, furnish parallels for the experience of the scientist among a certain Polynesian tribe, who, instead of receiving as he thought the higher numerals in their language, really obtained many obscene and indecent expressions, all of which, of course, went duly on record.

Sometimes, too, the investigator chances to get among the young people first, and, taking down his vocabulary from them only, ultimately discovers that he has really recorded the most colloquial terms, and not the real language of the people at all. For, in the uncivilized, as well as in the civilized world, youth has its own slang and kindred forms of speech. If, for instance, a white man obtained from the Lower Kootenay Indian youth the word for "horse," it would be *k'atla*, and not the imposing *k'itlk'atlahaatltsin* of their elders. But the Kootenay youth's abbreviation of the long word is after all no different from the cuts in our own English that have given us such monosyllables as "cab" and "mob," which once were but slang terms. Nevertheless, to record them as in polite usage when they were mere slang would be a misstatement of fact which the inexperienced investigator among savage and barbarous peoples is often liable to make.

In obtaining words relating to the human or animal body, its parts, functions, etc., the more or less ignorant investigator, innocent of the speech of the people he is studying, has recourse to the method of physical interrogation, i. e., he points to, or touches, that thing of which he desires to record the name. In this way, many amusing and embarrassing mistakes have occurred. Even good investigators cannot always escape such errors. Thus, in a vocabulary of the Kootenay language recorded by Dr. G. M. Dawson, the word for "armpit" is given as *a-kit-hloo-e*. Now, *ah-kit-hloo-e* (properly, *aqkitkwi*) really signifies "heart." In this case, the person questioning the Indian touched him, or himself, somewhere under the left shoulder near the heart, and received the Kootenay name for that organ. Had the physical indication been more exact, the correct term might have been obtained.

In the same vocabulary, the word given for "bone" is *a-ko-klá*, evidently the Kootenay *aqkoktla*, "skin." Here the investigator touched an Indian, or himself, on some part of the body, or on one of its members, where a bone was prominent (e. g., the wrist), and the Indian, understanding him to have touched or pinched the skin and not the bone, gave him the term in his language for the former and not for the latter.

The writer himself had two very interesting experiences along very similar lines, while among the Kootenay Indians. One day, in an endeavor to obtain the Kootenay word for "pinch," he pinched an Indian on the flesh of his body, whereupon the Indian said at once *kakoktla*, i. e., "my skin." This was all right from his point of view, but had nothing at all to do with "pinch," an idea quite ignored in this answer. The Indian was attending to his own feelings and his own personality, and to him the "pinch" administered to his skin was but one way of asking its name.

On another occasion, when in search of the Kootenay word for "tickle," I picked up a feather and with it tickled an Indian upon the bare chest. Asking then for the Kootenay term, I received the answer, *kisukitlqoine*, a word which signifies literally, "the body is (or feels) good," and, freely, "the bodily sensation is pleasant." Here the Indian named the sensation as he felt it, and not the action as performed by some one else. The fact recorded in the word employed by him was thus rather psychological (i. e., to be tickled on the body with a feather is pleasurable) than linguistic. Had the investigator, in this case, not possessed some knowledge of the morphology and grammar of the Kootenay language, the word *kisukitlqoine* might have gone on record as the Indian term for "tickle," with no hint whatever of its psychological significance and implication. Out of it, however, a good Kootenay word for "tickle" could easily arise.

Not all human languages are characterized by the same degree of generalization or the same system of classification of actions, movements, etc.; nor do all name by one and the same term an identical act performed by a man, a beast, a bird, a fish and an insect; nor, again, is the same organ (a *tail*, for example) named by one and the same word in all languages when belonging to a beast, a bird, or a fish. Not only are distinctions in these respects often made between man and the rest of the animal creation, but also sometimes between mammals and birds, and between these and fishes.

An investigator among certain American Indian peoples for the

first time, might observe a fish swimming along in the river at his feet, ask some native about it, and duly receive a word expressing the act performed, which he would set down in his vocabulary as the Indian term for "swim." Not until he had been in swimming himself, or had seen an Indian do so, and heard the others describing the act of the man, or until he had at leisure looked over the texts he had succeeded in recording and had become more or less acquainted with the genius of that particular language, would he know that his word for "swim" referred solely to the act of swimming as performed by a fish, and was in no way inclusive, as in our English "swim," of that act as performed by a man, a bear, a duck, a fish, an insect, etc., to say nothing of its use as a synonym of "float."

In some languages the foot of a man and that of any one of the other mammals may be expressed by the same word and the hand by another, whereas the foot of a bird requires an entirely different term. In the Kootenay language, e. g., there are three different words for "tail" according as the reference is to a beast, a bird, or a fish. Nor can one, in that form of human speech, use, as we do in English, one word indiscriminately for hair of a man's head, and hair of one of the lower animals. Equally incorrect would it be, in some languages, to follow the English practice of applying the one word "cold," to water, the atmosphere, metal of any sort, and bodily sensation; and the same thing is true with regard to "warm." Curiously enough, however, we find sometimes that the words for "cold" and "warm" are not always equally restricted or diversified, for it may happen in certain languages that one of these terms more approaches our own English usage, while the other exemplifies thoroughly the point under discussion here.

Among ourselves, children sometimes wonder why a cup of "tea" wet and a spoonful of "tea" dry should be named by just the same word; and "coffee" appears to them under three different forms, whole, ground, and liquid. We lighten the matter somewhat, but do not settle it completely, by speaking of "tea leaves" and "coffee beans," using the same analogies as are employed by primitive peoples. An investigator, meeting a Kootenay Indian at a grocery-store and asking from him the words for "tea" and "coffee" would receive as answers, respectively, *aqkotlakpe'k* and *tsam'na*, the first signifying literally "leaf," and the latter "bean." But enjoying the hospitality of some Indian lodge, and inquiring the names of the liquid "tea" and "coffee" there dispensed, he would get the words *aqkotlakpe'kmatlak* and *k'komk'akitttel*, since

there exist, apparently, no Kootenay terms of a nature indefinite and general to the same extent as our English "tea" and "coffee." The investigator needs always be on the watch for the different ways in which things denoted in his own language by a single comprehensive and loosely-used term, may present themselves to the native mind, and hence require separate and definite naming. In the matter of "leaf" and "bean" the Kootenay Indian is of one and the same thought with ourselves, but differs from us when it comes to the loose generalizing so common in the languages of civilized man. It would be natural with us to assume that to an object of foreign origin or manufacture, identical, or practically so, with one of native origin or home manufacture, uncivilized individuals would attach the same name. But this assumption is not always safe when dealing with savage and barbarous tribes, who often take advantage of peculiarities and characteristics too small or too insignificant to be thought of any importance by "civilized" people, to distinguish neatly and clearly what appear to the latter as incidental and are assigned but one name.

To the white trader of the eighteenth century the tobacco pipe of the Indian and his own (imported from Europe) were equally "pipes," and minor qualities of form and the like did not bother him at all. But the Nipissing Indians of the Algonkian stock were quick to notice the clay pipe of European manufacture had a little projection at the bottom of the bowl on the outside, and named them *tisicwipwagan*, or "pipe with a navel," thus marking them off their own tobacco pipe, *opwagan*. So the word for "pipe" an investigator might receive from these Indians would be different, according as he inquired after the native or the exotic article, or obtained the term he recorded from one who was familiar with both, or from one who had seen the pipe of foreign manufacture.

The savage and the barbarian, who are by no means devoid of a sense of humor, often make merry over the blunders of the white man amid the intricacies of aboriginal speech, as did a Kootenay, who brought the writer a little "tamarack-tree" instead of the "brook-trout" for which he had asked, or rather thought he had. In the Kootenay language a "tamarack" is called *k'ustet* and a "brook-trout" *k'ustet*, just a twist in the guttural to mark the difference.

Perhaps the most remarkable experience of an individual of the white race in connection with the language of a primitive people is that of Dr. E. Uricoechea, the South American philologist. When he went among the Indians of the Rio Meta in Colombia he had

in hand written texts in their language, but found it impossible to make himself understood by means of these as he pronounced them. So he sought out an interpreter, and with him learned the language, or at least a part of it, repeating and repeating words and phrases until he was assured that he had the right pronunciation. Then he went again to the Indians, but fared not much better than at first. Returning to his teacher, he found that even he could not understand them when his pupil used the words and phrases he had taught him. The *Sprachgefühl* of the white man was not delicate or sensitive enough to discriminate and to retain the numerous fine distinctions in sound which came easily to the trained apperception of the Indian.

#### SOME SOCIOLOGICAL MANIFESTATIONS.

Whenever two races and two forms of culture meet or clash there are sure to be some interesting sociological results, especially with regard to manner and customs. Take *scalping* for example. It is surely no compliment to our race that Dr. G. Friederici devotes some forty pages of his recent monograph on scalping and related war-customs in primitive America to the consideration of "the increase in the custom of scalping through the influence of the European colonists." But this title is justified by the facts of history. Over certain large areas in North America the practice of scalping is shown to be of comparatively recent vogue and origin, and in several localities its extension is the result of white contact. The introduction of guns (weapons so much more effective than bows and arrows, etc.) among Indian tribes who were already in the habit of scalping their enemies increased greatly the number of the killed and the severely wounded in battles and massacres, and therefore the chances of obtaining scalps.

The possession of the new weapons likewise added to the frequency of intertribal disputes and to the fatalities in the combats arising from them.

Another factor leading to an increase in the practice of scalping of an intensive sort was the sale and presentation to the Indians of the "scalping-knife," a keen-bladed instrument far superior for the required purpose to anything they had previously had in their possession, and this facilitated immensely the scalping process. Not only did the whites encourage Indian tribes to scalp each other, but the various nations of white men in North America from time to time paid the aborigines to scalp their white adversaries.

Both English and French seem to have offered premiums for the scalps of red men and white. Those of men, women and children were all paid for at various times in the history of French and English colonization, and the hope of such material reward was doubtless one of the efficient promoters of not a few horrible massacres where neither sex nor age was spared. No wonder that, in possession of the gun and the iron knife and encouraged by the scalp-premium, savages with whom scalping had previously not amounted to very much now abandoned themselves to it with a zeal and a dexterity that soon equaled those of tribes to whom the custom was no new thing, and with whom the new weapons merely meant added facilities in the practice of an old-time device. And some of the whites even took to scalping, becoming not less expert at it than the Indians themselves. This was true of many backwoodsmen and "pioneers," who are said even to have taught non-scalping Indians sometimes to scalp. The cumulative effect of all these new factors upon the extension of the custom of scalping among the Indians of North America was great indeed.

The custom of smoking tobacco and the cultivation of that narcotic on a large scale were unknown to many American Indian tribes until the enterprise of Virginian tobacco-planters and European pipe-manufacturers made extension of trade a necessity, or until the Indians with whom tobacco-smoking had been more or less a somewhat limited ceremonial, followed white example and made it one of the common every-day pleasures and occupations of life.

The use of intoxicating liquors is another case in point. It is well known that much of the drunkenness now prevalent among the "lower" races is due to contact with so-called higher civilization. But even in cases where the aborigines possessed intoxicating drinks before the advent of the whites the coming of the latter has not infrequently increased the amount of drunkenness among them.

The wild Tobas of the Paraguay border afford a curious example of this result. In pre-Columbian times the Indians of this part of South America had learned to extract from the *algorabo* fruit an intoxicating liquor of considerable potency, and annually at the period of harvesting this fruit, they were accustomed to get drunk, at a festival held for that special purpose. The introduction of civilization, with its new intoxicants, has enabled the Tobas to get royally drunk at least once a week, Sunday serving them principally as the occasion of such debauches. Fric, who visited these Indians in 1903-1904, testifies to the noisy and quarrelsome character

of these weekly sprees that have now taken the place of the old annual "drunks."

With not a few savage and barbarous peoples the use of such strong drinks as they possessed was confined to the male half of the community, indulgence in these things being tabu for women. The advent of civilization, and the breaking down of old native customs as a result, has not infrequently caused the extension of drinking customs to members of the other sex with very disastrous consequences. Our race has been from time to time responsible for the appearance of several kinds of "new woman" among primitive peoples, and very rarely have these been an improvement upon the old.

The complete history of the attempt to impose Sunday as a day of rest upon certain savage and barbarous peoples would be a document of great interest and value. In lands where nature has provided abundantly for man, and where there is little need, if any, for toil on his part, as is the case in certain tropical and semi-tropical environments in both hemispheres, the setting aside of Sunday as "a day of rest" seems almost like putting a premium upon human laziness in circumstances under which it is difficult enough, in every way, during the remainder of the week, to stimulate or to induce any sort of activity of body or of mind. In some regions also the result has been to emphasize still further the already unfair division of labor between the sexes by allowing the male half of the population to escape with even less healthful exertion than before. In the language of the Cherokee Indians, one of the names for Sunday is said to signify, "when everybody does nothing all day long."

This thoroughgoing appreciation of the day of rest has a curious origin. Among these Indians Saturday afternoon was the time for their great ball-play, and the strenuous game was prepared for by a dance on the night previous. Thus did Sunday come to be a real day of rest. Another side of the question was revealed among one of the many tribes of Polynesia. This people had always been a very hospitable sort, and their latch-string was always out, strangers being welcome at all times. This naturally caused a great deal of work on every day of the week, and Sunday, like the others, was often full of feasting and entertainment. This did not suit the missionaries of Sabbatarian tendencies, who desired to have Sunday a day of complete rest from secular activities. The net result of a strict observance of Sunday here was, therefore, to reduce native hospitality by more than one-seventh, and, eventually, perhaps, to sap its strength altogether.

The representatives of the "higher civilization" sometimes achieve reforms among uncivilized tribes or peoples, for reasons they little dream of. A change in manners and customs is once in a while effected on a very strange basis and one in which the foreign missionary or teacher has had no intentional part. That all call for soap indicates an instinct for cleanliness, or the dawn of such at least, is the first thought that comes into the mind of the enlightened member of the white race on hearing of the demand for this article on the part of some far-off savage people. But the situation sometimes arises not through hygienic but through merely cosmetic or ornamental reasons. That the primitive individual "will not be happy till he gets it" is plain enough, but what inspires him is not a desire to be clean, but his knowledge of a new way to make himself more attractive. Thus Van der Sande reports that he once washed half the face of a young Papuan of the Manikion tribe in New Guinea with soap, with the result that the operation seemed to "bring on a lighter hue." The young man was quite pleased with this and walked about somewhat proudly conscious of a newly-acquired charm or ornament. The subsequent demand on the part of the natives for soap was, therefore, not attributable to the desire to be clean, but to the feeling for personal beauty or adornment.

In another region of New Guinea a sudden demand for washing-blue was entirely unconnected with any improvement in the laundry facilities of the people in question, but arose solely from the fact that they had discovered the excellent quality it possessed for tinting the human skin. Here, again, the motive was cosmetic, not hygienic. And many other products of our "higher" culture have in like manner among savage and barbarous peoples been put to uses strange to us but to them entirely reasonable.

#### SOME PEDAGOGICAL DIFFICULTIES.

The attempts of the higher races to confer upon the lower the blessings of their own civilization reveal many humorous and many pathetic situations in which often the prejudice of the civilized teacher in favor of his inherited culture is greater than his wit and wisdom in overcoming the objections of his uncivilized pupils. It is too commonly the case that the representatives of our superior culture decree that there is but one way of conferring the new status upon the savage or the barbarian, and that way must be gone through, though the primitive heavens fall.

A good deal depends on how the young "savage" is introduced

to the ideals of our race. Take, for example, the following instance of contact between the white and the red races, which comes from a certain Indian school in the Canadian Northwest. It was the custom to cut the hair of all boys as soon as they entered the institution. One boy objected, even more strenuously than his fellows to this treatment. One day, running his hands over his close-cropped head, he said to his teacher: "Me no like this. Just like Debbil." In astonishment the teacher exclaimed, "Why, what do you mean?" For answer the Indian boy turned over the pages of the illustrated Bible that lay before him and observed: "See, all good men long hair, only Debbil short!" And so it was. The patriarchs, kings, prophets and other estimable characters in sacred history all had long hair, while Satan, the personification of evil, was distinguished either by having his hair close-cropped or else had none at all. Resemblance to the Devil is hardly the best idea to cause to spring up in the mind of one who has newly come into the pale of our modern Christian culture.

First contacts, such as that just noted, often decide for good or ill the whole course of education in the case of the individual. The really human points of contact and the psychological moment are the things of supreme importance. Missionaries, in their efforts to convert and to instruct the heathen by means of sermons based upon particular Bible texts, are often guilty of the most grievous tactical errors, if of nothing worse.

There is on record (on the authority of the Rev. E. R. Young, a Methodist missionary among the Indians of the Canadian Northwest), the instance of a missionary in that region, who took as his text: "Come unto me, all ye that labor and are heavy-laden, and I will give you rest." His congregation were treated to a discourse on life and labor, and particular stress was laid upon the fact that all *men* had to toil and bear heavy burdens. This was among a tribe with whom the women were the burden-bearers *par excellence*, and the men prided themselves as being above work. The result was a primitive indignation meeting on the part of the men after the service had ended, and the preacher was thus advised: "Let him go to the *squaws* with that sort of talk. *They carry the burdens and do the hard work.* Such stuff as that is for women, not for men."

This missionary had no more success than had another in the Japanese field, who is reported to have discoursed eloquently from the text: "For this cause shall a man leave father and mother, and shall cleave to his wife" (Mark x. 5)—and that in a country where

filial obedience (nay, even filial servitude) constituted the primal virtue. This is one of the texts in our Bible, seized upon by the opponents of the foreign religion, in their efforts to prove it immoral and antagonistic to the fundamental principles of Japanese society.

Of course most of these mistakes of missionaries are due to ignorance or mere indiscretion, but it is sometimes difficult to accept such excuses when we remember what has occurred not infrequently where the congregation consisted wholly of white people, or nearly so, as has been the case, for instance, in the Canadian and American Northwest. The writer himself heard an Episcopalian minister, who at certain stated times visited the settlements in parts of northern Idaho and southeastern British Columbia, preach a sermon from the text: "The woman whom thou gavest to be with me, she gave me of the tree, and I did eat" (Gen. iii. 12), a sermon which was really an arraignment of woman as responsible for so many of the sins and the shortcomings of mankind. The audience, gathered in the large room of the only inn for 100 miles each way, consisted of some 20 whites, 3 Chinamen and 4 or 5 Indians. Of the white men all but two were bachelors, and in all that region the white women could have been counted on the fingers of one hand. Women, indeed, were at such a premium that good-looking squaws found but little difficulty in obtaining white husbands. And yet a minister of the Gospel could preach such a sermon in such a place!

Humorous, rather than pathetic, was the situation of another missionary, who in his innocence began, as he thought, his discourse with the words, "Noble red men, children of the forest!" But what he really said was: "Great painted people, rabbits!" for at the time of his advent "children of the forest" happened to be a colloquial term for rabbits. Instead of using whatever might have been the Indian expression corresponding to our "red men" as applied to the American aborigines, he had employed native words which could signify only "painted (red) people," and the words used for "noble" meant simply "great" or "large." What strange notions of our civilization and its ideals primitive peoples must sometimes get from listening to the accounts of it given by such representatives!

The teacher has about as many troubles of this sort as has the preacher. Witness an example from negro Africa. The progress of education in mission schools in various parts of the world has led to the inclusion of physiology in the curriculum of some of

them, as, for instance, the Training Institute for Boys maintained by the Baptists at Yakusu among the Lokele, a Bantu tribe, in the region of Stanley Falls on the Upper Congo. The attempt to give these young negroes some elementary physiological ideas met with no success on account of the peculiar views of the natives concerning the human stomach, the discussion and representation of which figures so largely in our scientific treatises and text-books. The Lokele are of opinion that good men do not have stomachs at all, the process of digestion being all performed in the intestines. Absence of a stomach is the reason why people are able to come off unscathed when made to submit to the ordeals by poison, etc., in vogue among these African tribes. Only evil men, possessed by some bad spirit, have ever a stomach, which is regarded as the abiding-place of the spirit of evil himself, something thoroughly unlucky and ill-omened for any human being to harbor within his body. No argument availed to remove or weaken this curious idea. If the teachers pointed out that certain men, who had died or been killed within the knowledge of all, had stomachs, the answer was that it was their very possession of the organ in question that had been their undoing. Nor did experiments with such animals as goats, monkeys, etc., settle the matter. Here the reply was made that facts derived from the observation of animals could in no way prove anything with respect to human beings.

One sees at a glance the impossibility of convincing the Lokele of the evil results of the consumption of alcohol by our familiar American method of the pictorial display of the effects of its consumption upon the human stomach. Good, strong men, having no stomachs, must, in the opinion of these negroes, be entirely immune from such consequences.

Another interesting item comes from far-off New Zealand. In spite of the fierce battles of other days between the Polynesian aborigines and the English colonists, they are still a long way from becoming extinct. In 1908 there were over 9000 Maori children in attendance at various educational institutions, including some 4000 in the native village schools. In many of these schools the attempt has been made by white teachers to popularize the study of agriculture among the Maoris by the introduction of school-gardens for the children, an experiment very successful in America and elsewhere. But all efforts to induce the Maori children to take up the school-garden utterly failed. The reason for this is rather curious. To the Maoris all sorts of manure are tabu, and they will not even use products of the fields fertilized by such means. Hence

no little Maori could ever "garden" like his white companion or friend. Not even the observed fact that the manured garden-plots of the whites produced four times as many pounds of potatoes as the unmanured availed anything to weaken the tabu, although some of the more conservative Maori adults wondered to see the manured plots produce anything at all. Thus an ancient tabu of manure affected the curriculum of the modern school-system of New Zealand.

## AN ACCIDENT THAT LED TO A NOTABLE DISCOVERY.

BY PHILIP E. B. JOURDAIN.

IN Ernst Mach's well-known lecture "On the Part Played by Accident in Invention and Discovery,"<sup>1</sup> there is no mention of the remarkable accident that led to Oersted's<sup>2</sup> momentous discovery of the action of an electric current on a magnetic needle. An interesting account of this accident was given by Christopher Hansteen<sup>3</sup> in a letter of December 30, 1857, to Faraday.<sup>4</sup> From this letter we will make the following extract:

"Professor Oersted was a man of genius, but he was a very unhappy experimenter; he could not manipulate instruments. He must always have an assistant, or one of his auditors who had easy hands, to arrange the experiment; I have often in this way assisted him as his auditor. Already in the former century there was a general idea that there was a great conformity, and perhaps identity, between the electrical and magnetical force; it was only the question how to demonstrate it by experiments. Oersted tried to place the wire of his galvanic battery perpendicular (at right angles) over the magnetic needle, but remarked no sensible motion. Once, after the end of his lecture, as he had used a strong galvanic battery in other experiments, he said, 'Let us now, while the battery is in activity, try to place the wire parallel with the needle.' When this was done, he was quite struck with perplexity by seeing the needle making a great oscillation (almost at right angles with the magnetic meridian). Then he said, 'Let us now invert the direction

<sup>1</sup> *Popular Scientific Lectures*, 3d ed., Chicago, 1898, pp. 259-281.

<sup>2</sup> Hans Christian Oersted (1777-1851).

<sup>3</sup> Hansteen lived from 1784 to 1873. His famous researches on terrestrial magnetism began in 1812.

<sup>4</sup> H. Bence Jones, *The Life and Letters of Faraday*, London, 1870, Vol. II, pp. 395-397.

of the current,' and the needle deviated in the opposite direction. Thus the great discovery was made; and it has been said, not without reason, that 'he tumbled over it by accident.' He had not before had any more idea than any other person that the force should be *transversal*. But as Lagrange said of Newton on a similar occasion, 'such accidents only meet persons who deserve them.'"

In connection with what may be considered as a happy accident for Newton—the discovery of a whole solar system as a field of application for his newly discovered fluxional calculus—it is worth while to quote Delambre's<sup>5</sup> report of what Lagrange said: "...M. Lagrange, often quoted him [Newton] as the greatest genius who ever existed, adding at the same time: 'and the most fortunate; one does not find more than once a system of the world to establish.'"

<sup>5</sup>"...M. Lagrange...le citait souvent comme le plus grand génie qui eût jamais existé, ajoutait-il aussitôt: 'et le plus heureux; on ne trouve qu'une fois un système du monde à établir.'" "Notice sur la vie et les ouvrages de M. Le Comte J." L. Lagrange, *Œuvres de Lagrange*, Vol. I, p. xx.

## A GREAT ARYAN MOVEMENT.

BY BHAI PARMANAND.

IN this age the Aryan race has played a very prominent part in the history of humanity. The Aryan races of the west are now leaders in science and material power. Before these West-Aryans began their march of progress, their elder brethren, the East-Aryans, had displayed their powers of development in several branches of human activity. They excelled chiefly in religion, i. e., the sentiment that guides man in the conduct of life.

It has now become a well-established fact that the East-Aryans have exercised an immense influence on the religious growth of mankind. Hinduism and Buddhism are distinctly of Aryan origin. The Zoroastrian religion which is a link connecting Aryan with Semitic thought, is also Aryan and bears the greatest resemblance to Hinduism in its beliefs and customs. The style of the Zend-Avesta is similar to that of the Veda and even the word *Zend* is supposed to have been derived from *Chhand*, the Sanskrit word for the Verses of the Veda. Dogmatic Judaism was largely based upon the Zoroastrian religion and Christianity in addition to that, borrowed much from Buddhism.

Hinduism, in its ancient form Vedism, is the oldest of these systems. Moreover, it has come into closest touch with the other systems and has survived them all. Buddhism was its own child, and when Buddhism in its vigor turned to extirpate it, a conflict ensued in India which lasted for nearly a thousand years. The struggle is marked by the complete absence of those incidents that startle and frighten the human mind in the history of Semitic religions.

No sooner was the struggle over, than Hinduism, very much exhausted, was called upon to defend itself against the attacks of Mohammedanism. This proselyting form of Judaism rose like a storm from Arabia and spread both east and west. Soon it swept over

the whole of Northern Africa and Spain; and was advancing rapidly when it met the assembled forces of Christianity on the field of Paris. Fortunately for Christianity a division had broken out in the Mohammedan camp and the Christian army was victorious. It was a critical time for Christianity. Had Charles Martel been defeated, says Gibbons, "the Mohammedan *mullas* (priests) would have been lecturing on the commentaries of Quran to circumcised audiences in the colleges of Oxford to-day." After destroying Zoroastrianism in Persia, this storm dashed itself for 800 years against Hinduism, the patient heroism of whose martyrs in the course of centuries blunted the edge of the Moslem sword. This war was hardly ended when there appeared another formidable foe on the scene. Christianity came to India supported by material influence and the power of wealth, and it has been in operation there for the last three hundred years.

It was in the fitness of things that a great saviour should arise in a country rich in such traditions. Prophets and saviours always arise among downtrodden and crushed peoples, because the condition of the people requires a message of mercy and love. These saviours are incarnations of love and mercy and are therefore believed to be divine. The year 1824 will remain important in the nineteenth century history of India, as in that year such a prophet was born in a humble Brahman family in a Hindu state of Western India.

Nothing supernatural or unnatural is said to have happened at the birth of Swami Dayanand, as that was not necessary for the mission of his life. While still a boy of thirteen his conscience was roused by an ordinary incident. It is a Hindu custom to keep vigil on a certain night during the year and dedicate it to the worship of the god Siva. Dayanand's parents went to sleep after remaining awake for some time, when he observed that some rats came out of a corner and ran over the image of the god. Strong doubts with regard to the current beliefs of his people arose in his mind. Even at that young age, he had studied the scriptures carefully, but henceforth he began to read them from a new standpoint. He constantly thought of religion and differences in religion. He saw himself confronted with the great problem, why there were so many religions and why there were so many sects in each religion.

Eight more years thus passed away. He was twenty-one when two deaths occurred in his own family, those of his uncle and his sister. The youth stood face to face with death. The sight of death gives rise to serious thoughts in every one of us, but they seldom

leave a lasting impression. In Swami Dayanand's case this experience was the turning point of his life. It gave the second great impulse to his youthful mind and was the cause of his renunciation. He stole away from his home, though his parents succeeded in catching him and at once made preparations for his marriage in order to bind him to the world. Again he fled, but not to be brought back this time. Then followed the period of asceticism. Years were spent in jungles and mountains in solitary meditation or in the company of great ascetics. That was the path of individual perfection. Had he been contented like the rest of his type with self-realization alone, he would not have cared to come again into the world of struggle and strife. But Swami Dayanand had determined upon another course. He could not be satisfied with his individual salvation, when the rest of mankind was sunk in ignorance and darkness. He must find some remedy for the evil. Finally he met a blind old sage, Virganand, who impressed upon his mind the importance of the Veda. That was the key to the solution of his doubts and difficulties. That was the light he received from his teacher and he made up his mind to spread it.

Truth is one. How can we know truth from falsehood? Our last appeal is to reason. But reason alone can not be a safe guide. It is so much clouded by the mists of prejudice that it leads people differently brought up to different conclusions. We can not therefore rely wholly upon reason. Dayanand's solution is quite new. He deals with the question historically and applies to it the comparative method. Treating the subject of religion by this method, we come to know how various forms and formularies have been added to religion and how they have changed, distorted and disfigured it; until now religion has become a fetter for men who are as helpless in their ignorance as the bull that has wound its tether-rope round the tree and stands tied and chained to it. Dayanand's return to the Veda is like the turning of the bull's face backwards which is sure to restore him to his complete original freedom. Swami Dayanand asserts this principle in the words of the philosopher Schopenhauer, that "the wisdom of the Aryan seers can not be pushed aside by the events of Galilee; on the other hand the primitive wisdom of mankind will flow back on Europe and create a change in our knowing and thinking."

His position in Hinduism is that of a reformer like the great Buddha. He saw that many evil customs and creeds had crept into modern Hinduism from which it required to be purified and restored to its pure Vedic form. With regard to other great religions, he

thought that if properly interpreted the teachings of all of them could be traced to the Veda. He began to preach his idea. He met with severe opposition, not only from the Christian and Mohammedan priests, but from the Hindu pandits as well. His only support was his character and learning. He had many public discussions with the representatives of all religions. He was undoubtedly the most learned man of his age. In a big gathering at Benares, the center of Hindu learning, where he stood in the midst of a large number of his adversaries, the chairman of the meeting compared his position to that of a lion in the forest.

One or two incidents of his life will show the magnanimity and boldness of Swami Dayanand's character. Once when he was preaching a man brought him a betel-leaf to chew. He soon spit it out, and it was found to contain poison. The man was arrested but Swami Dayanand begged for his release on the ground—as he expressed it—that his mission was to free human beings and not to send them to prison.

On another occasion, he was staying in a garden in the capital of a large Rajput state. When the ruler came to pay him his respects, he was accompanied by his mistress. Swami Dayanand's first words were to preach to him on the duties of kings, pointing out that the ruler should not have exhibited himself in the way he had done. The ruler was all-powerful and the rebuke might even have cost Swami Dayanand his life. The mistress became one of his enemies and is said to have been instrumental in attempts to poison him.

The active work of Swami Dayanand extended over a decade, the greater part of which was spent in Rajputawa, in the oldest and most important Hindu states. He seemed to believe that as long as certain Hindu states (particularly Rajputs) did not experience some awakening, real life could not be restored to Hinduism and that it alone could be the right instrument for a general revival of Vedism.

He spent a very short time in Northern India during which period he founded a great movement called the "Arya Samaj." The extraordinary feature that distinguishes him from all other teachers, is that he altogether excluded his personality from his teachings. He begins his works by stating that the reader is at perfect liberty to reject what he sees that is wrong, and to accept only what appears to him to be right. This peculiar feature of Swami Dayanand was clearly shown when he was laying the foundations of the Arya Samaj in 1876. In spite of urgent and repeated requests of the

members, he definitely declined to be named patron, guru (teacher) or even president of the society. He joined as a simple member like the others and continued in that relation till the end of his life.

In the course of one generation the Arya Samaj has displayed remarkable activity. It has spread over all parts of India and counts hundreds of thousands among its members. It would not be wrong to say that the Arya Samaj is the only living organization in the whole of India. Swami Dayanand did not live long to work for the movement. He died at Ajmere in November, 1883, of chronic poisoning.

His death was sublime; he remained perfectly calm and undisturbed till his last breath. As a memorial to Swami Dayanand the Arya Samaj erected a college in Lahore, called the Dayanand Anglo-Vedic College, which at present is the largest educational institution in Northern India. Its funded capital has grown to more than a million of rupees, mostly subscribed by the poor and middle classes. Its principal, L. Hans Raj retired only last January after doing a self-denying and devoted service during the best twenty-five years of his life. He lived a life of poverty and although he had a fairly large family worked all these years without remuneration. A number of his pupils have followed his example. Giving up their material prospects, they have joined the college and are working as professors there on a bare maintenance.

The Arya Samaj supports another unique institution, known as the Guru Kula Academy, at Haridwar. It follows strictly the ancient Aryan system of education. It is superintended and managed by another equally devoted and self-sacrificing great leader of men, L. Munshi Ram, and is also manned by a similar band of professors. It is one of the most remarkable institutions in the world and has elicited the admiration of all who have visited it. Many other high schools (for boys and girls) and branches of Guru Kula are carried on by the Arya Samaj.

The philanthropic work of the Arya Samaj is no less noteworthy. During the frequent famines and other similar calamities in the country, the greatest amount of relief from any public body has come from the Arya Samaj. The leader in this line of Samaj work is L. Lajpat Rai, who is better known on account of his recent deportation by the government of India. The only great college for the education of girls in Northern India, is managed by another great worker, L. Deva Raj. All of these men take their inspiration from Swami Dayanand and the Arya Samaj which is the source of light and life to the people.

What Swami Dayanand aimed at in founding this movement, can be best understood by turning our attention to the following few extracts from the preface of his work which has been translated into English under the title *Light of Truth*.

He says: "It is a well-known fact that 5000 years ago there existed no other religion in the whole world but the Vedic."

This is the basic principle from which he takes his start. The statement is rather startling to one who is not familiar with the working of historical forces in the early ages. On the discovery of Sanskrit the western people thought that the language was a mere forgery. Soon, however, the time came when Sanskrit came to be regarded as the mother of the Aryan stock of languages. At any rate the discovery brought a great many facts to light with regard to the early divisions of humanity and created the science of comparative philology.

Similarly, the allied science of comparative theology has thrown new light on the subject of religion. It is demonstrating to-day that what we call different religions are mere perversions or exaggerations of one and the same religion; and also that all religions are derived from one another. We are told by those who have made a study of the different religions, that the various religious doctrines and theories of cosmogony, of evil, of redemption and of resurrection, etc., are nothing more than distortions of simple primitive ideas. Let the horizon before humanity extend and we shall see things that we could never imagine. On this subject, the testimony of Prof. Max Müller, perhaps the greatest authority on these matters, is of great interest. "I have often pointed out," he says in his *Lectures on Vedanta*, "that the real importance, nay the unique character of the Veda will always be, not so much its purely chronological antiquity, great though it may be, as the opportunity which it affords us of watching the active process of fermentation of early thought. We see in the Vedic hymns the first revelation of Deity, the first expressions of surprise and suspicion, the first discovery that behind this visible and perishable world there must be something invisible, eternal or divine. No one who has read the hymns of the Rigveda, can doubt any longer *as to what was the origin of the earliest Aryan religion and mythology*. Nearly all the leading deities of the Veda bear the unmistakable traces of their physical character. Their very names tell us that they were in the beginning names of the great phenomena of nature, of fire, rain and storm; of sun and moon, of heaven and earth. Afterwards we see how these so-called deities and heroes became the centers of mythological tra-

ditions, wherever the Aryan speakers settled, whether in Asia or in Europe."

"This is the result," he goes on, "gained once for all and this light has shed its rays far beyond the Vedic mythology and religion and lightened up the darkest corner in the history of the mythological and religious thoughts of the other Aryan nations, nay, of the nations unconnected by their language with the speakers of the Aryan speech."

It is argued on the other side, that it may be true that the Veda contains the primitive ideas of the Aryans, but religion has been undergoing a process of evolution, and in the course of centuries of development, pure Christian theism has evolved out of vulgar polytheism. Yes, evolution there has been, but only to find at last that in the search for absolute metaphysical truth religion simply blundered and ended in confusion worse confounded. As regards pure theism, it is a question whether the Semitic conception of God as the creator and governor of the universe, who, paying little heed to the rest of infinite creation, interferes so often in the affairs of the Semitic people and treats them as his personal concern, can any longer stand the scrutiny of modern science.

Do we then mean to go back to paganism? The word is no sooner spoken, than all the evil associations in our mind are aroused in connection with it. Such is the force of habit. A moment's serious consideration however will show that Christianity as a system of religion was in no way an advance upon paganism. The facts of history are very stubborn and they utterly disprove all such Christian assertions. In the first place, under the pagan world there was perfect tolerance and freedom of opinion. Christianity brought in its train intolerance, wars, persecutions, and the Inquisition. Again, science and philosophy flourished in pagan times; whereas while the Christian church was supreme in Europe, science and philosophy were suppressed. But it is said that Christianity civilized the semi-barbarous nations of Europe. The fact is that pagan Rome was politically the mistress of Europe and was casting abroad the seeds of her civilization. When Rome became Christian, she again took up her old work of civilizing Europe, but this time through Christianity and holding the nations in complete intellectual subjection.

It was the old pagan spirit and love of nature that broke the spell of Christianity. Modern civilization dates from the period of the Renaissance which was a movement of pagan revival; and it spread because the intellect of Europe could no longer be kept to

the yoke of the church. The revival of pagan learning led to a general intellectual awakening in Europe, which resulted in the great movements of the Reformation and the Revolution. It is the same spirit of inquiry that has undermined Christian theories and is gradually taking the world back to paganism. This will correct the great historical error which is committed in the acceptance of the genealogy of the clan of the Jews by the great Aryan nations of Europe for their lineage. Paganism was simply another and a modified form of the Aryan social system and is no doubt a natural condition of human society. Among primitive races mythology was their peculiar mode of giving expression to their ideas. It was to them what poetry is to us.

Again Swami Dayanand says: "The turning away from the pursuit of the study of the Veda led to the spread of ignorance and intellectual darkness all over the world. The understanding of men having become clouded, they founded religions just as they thought fit."

Veda comes from the root *vid* which is the same as wit, meaning to know. Veda thus means knowledge. Knowledge can be expressed by means of words alone. Words are the body of knowledge without which it is impossible to conceive of its existence. According to Swami Dayanand the knowledge and the word are both without beginning and end.

The Aryans spread far and wide. As there were no written books of the Veda, the time came when they forgot all about this possession of their race. The Hindu Aryans alone preserved the Veda in the shape of four books. Until late in human history nations learned a great deal from one another, and whatever was learned, was properly assimilated. Wherever the Aryans went they spread their civilization and Aryanized other races.

Religion then existed in its pure form free from alloy. It had an entirely different significance. It could not be thought of as having any originator or founder, just as we can not think of an originator of truth, love or charity. Zoroaster, like Confucius, was a great moral teacher and benefactor of his race. Moses was a deliverer of his tribe. No doubt the Jewish prophets entertained a belief that their tribe were the chosen people of God; they never thought of extending their beliefs or customs to other peoples. They seem to be rather jealous lest others share their special boons with them. The annals of their tribe were their scriptures. Yahveh was their tribal God and Judaism was a tribal religion similar to many others existing at that period in Greece and other countries.

Critical study shows that even Jesus Christ was originally actuated by other motives than religious, to set himself up as a saviour. As a Jew he saw the misery of his tribe under Roman slavery and wanted to liberate them from this foreign yoke. The charge brought against him at his trial was of a seditious nature.

What distinguishes the present religion from its old prototype is its peculiar feature of proselytism implying the need of converting other people. With this characteristic, religion appears in an altogether new garb. Henceforward some person's name is added before it; and it is not religion but this or that person's religion. It assumed a new form every time a new founder arose.

The growth of this step which changed the nature of religion, took place in India. In the Vedic age, great stress was laid on the performance of duties prescribed for various stages of life and for various kinds of professions. In that age laws and social and political institutions developed in India. During the next age, that is, the age of the Upanishads, worldly functions fall into contempt and the discussion of metaphysical theories is considered of prime importance for man's life. All intellectual effort is turned in this direction. Absolute truth was the only means of salvation, and that must be found. We can not expect the early people to have realized what is hard even for most of us at the present time, namely that there is no such thing as absolute truth, and that on the contrary truth progresses along with the growth of human intellect and knowledge. In the philosophic age we find that certain definite metaphysical theories have developed and they are not only taught as systems of philosophy but are preached to the people by wandering teachers as the right way to salvation.

There was so much talk about them and so much valuable time was wasted in the discussion of these theories, that Buddha's mind revolted from them and in opposition to them all he set up his theory of purely ethical religion. His preaching met with wonderful success. His mission spread beyond India to distant parts of the earth. Hundreds and thousands of Buddhistic missionaries went abroad to teach virtue and piety in the name of Buddha.

If proselytism can be justified, it was most justifiable in the case of these missionaries. Their motive was simply to elevate others in piety and virtue by the example of their own renunciation and sacrifice. But a new seed was sown and propagandism came into prominence as the chief feature of religion, no matter whether right or wrong.

St. Paul and other preachers of Christianity copied the Buddhist method. They went to proselyte people to Jewish traditions. With Christianity conversion became a point of the utmost importance. As the people who accepted Christianity in Europe were warlike in their habits, they did not proselytize by means of love and persuasion alone, as the missionaries of Buddhism had done, but made use of physical force when needed to gain their end.

Mohammed as well as his adherents depended greatly on force as a means of conversion. He saw that the sword was the quickest agent of propagandism. His chief work was to unite the divided tribes of Arabia, and as soon as he gained the military strength, his armies carried the flag of his religion both east and west.

Hence we find in the present day that conversion to a new faith does not signify any change in the life of the convert, but simply a change of opinion or belief, particularly in some theory concerning the founder of that faith. If this were not so, millions of money would not have been wasted by America on proselytizing missions to countries like India and China. The conversion of a Hindu to Christianity does not at all mean any change in his life for the better, as he already possesses such virtues as charity, humility, or poverty, most valuable in the eyes of the founder of Christianity. While under the pretense of securing heaven, he is simply taught to imitate western modes of life, and in doing so he generally picks up the evil side of it and at the same time is deprived of his original stock of virtues. The very nature of the temptations placed before him for his conversion, is enough to lower him both spiritually and morally. Thus it is that religion shifted from its original purity to an absolutely wrong basis. The guiding spirits of humanity instead of being great moral and religious teachers and transmitters of truth, became originators of new religion. Thus was sown the seed of division among mankind, and religion instead of being a force for uniting us all in the bonds of love and fellow feeling has been abused to create unending dissensions.

Again: "Unbiased learned men knew very well how many undesirable results have accrued and are likely to accrue in this world from the mutual wrangling of schismatics and sectaries. There will be no good will and love among men till this wrangling ceases."

This remark does not need much comment. The pages of history are full of illustrations. Every student of history is familiar with the burning of heretics and later on the persecutions of Protestants by the Catholics and of the Catholics by the Protestants in England and France. It is unnecessary to go into the horrors of

the massacres of St. Bartholomew's Day and other similar incidents.

The fall of Spain can be ascribed a great deal to the spirit of intolerance. It carried fire and sword into the Netherlands, killed thousands of its sons under the Inquisition, and drove the most industrious population out of the land. Philip III of Spain was once personally looking over the people being sent to the stake when his attention was attracted by a young noble who appealed to the royal mercy. "I would not spare you even if you were my son," was the stern reply.

The Thirty Years' War, which destroyed Germany is another instance. One small incident will show enough of the ferocity with which it raged over the people. Magdeburg was one of the most prosperous towns. It had a population of about 90,000 inhabitants. It was captured by the Catholic army after three days' siege and was set on fire. For several days the stream was flowing red with blood. A soldier wrote in an exulting tone to his lady love that suckling babes were speared through by the soldiers. Nothing was left of the town but a heap of ashes. The story of the crusades is another chapter in the history of religions. The Mohammedans, shortly after the death of the Prophet, were divided among themselves and were cutting each others' throats. The cold-blooded murder of the children of the one party by the other is still commemorated in the greatest Mohammedan festival.

Surely all this is not in accordance with the teaching of Christianity or of any religion. Christ taught to "love thine enemy"! Why then all this murder and bloodshed in the name of his church?

There can only be one answer, and that is as true in the case of all religions as in Christianity. The blame can only be laid at the door of those who are supposed to have charge of men's souls, who have made a profession out of religion. The priestly class in every religion has always kept the flame of fanaticism burning in human breasts and has sown the seed of hatred and prejudice against others. It is in their interest to do so. The respect they receive at people's hands and the command they possess over their minds is dependent upon the amount of that prejudice they infuse in them. The preachers of religions are like dealers in commodities, each advertising the beauty and qualities of his articles and in competition trying to bring others in ill-repute. Thus a trade has been started in religion which has given rise to jealousy, hatred, prejudice and their dreadful consequences.

If we could in any way measure or estimate the whole amount of hatred existing in the world, the greatest amount would on anal-

ysis be found to have been caused by differences in creeds. Imagine how much energy is lost in the efforts of Christianity to convert other people; and within Christianity itself what an amount is wasted in the efforts of the followers of one sect to convert the followers of other sects. The same can be said of other religions too.

The most abominable thing to my mind is the sight of a person starting a new religion. It simply aggravates the disease to which humanity has been a victim for so many centuries. It adds another pest to the already numerous epidemics that are working havoc in humanity. Every new religion starts to become universal with the high ideal of the brotherhood of man; and with professions of having come quite fresh from the factory of nature or of God (as if God had nothing else to do but to send his messages to men, excluding women from his favors, and simultaneously of different style to different persons). But we know that every creed in its essential nature is exclusive and though it might appear innocent or attractive for some time, it is ultimately sure to go the same way as its predecessors. Seeing the chances of success very remote, it soon gets tired of its professed ideals and begins to make use of unfair and worldly means to entrap people and whenever it gets opportunity and power, tries to spread by force. If we could somehow remove these differences in religion, we would cut at the root of the greatest source of hatred and evil among mankind.

Again says Swami Dayanand: "Every point on which these thousand religions are unanimous, is the religion of the Veda and is to be accepted. That on which they contradict each other, is artificial, false, contrary to religion and is to be discarded."

It is remarkable that every one of us feels so sanguine of the absolute truth of the religious views he holds. We forget another fact, that in most cases our religion has nothing to do with truth or falsehood, but is simply a result of the accident of our birth. The Christians of to-day profess Christianity and do so much for its extension, not because they have ascertained after careful inquiry that Christianity is the only true religion, but simply because they are born Christians. The next important factor that determines our religion for us is the force of early training and of social environment. The first impressions, however wrong or absurd they may be, stick to the mind and are hard to erase. They become *our* views which we cherish and love. It is on this account that we acquire a prejudice against all other views; and our condition resembles that of the frog who having always lived in a small pond

could not imagine that the ocean was something larger than the pond.

The plea that our remote ancestors made a proper choice of the religion which we hold, is not very sound. History tells us that conversions to other religions have been made by the sword or by undue political or social influences. Circumstances of marriage for instance have frequently brought about the conversion. We notice at the present day that generally low motives attract people to new religions. Schools and hospitals are used as traps for catching new members. If the truth or falsity of a religion were the motive for conversion, we should naturally expect the intellectual and thinking men, and not the poor and ignorant classes, to take the lead in the acceptance of a new faith.

It is a matter of common observation that if a thousand persons speak the truth they will say the same thing, while a thousand persons telling lies will give as many different versions of the story. The existence of a thousand and more forms of religion indicates clearly that each one has become mixed with a certain amount of falsehood. Whether that falsehood comes from the time of the originator or was added by the later propagators is immaterial. It was therefore the most vital problem in religion that presented itself to Swami Dayanand in his boyhood, namely, how to find out truth from falsehood in religion, in other words how to separate the grain from the chaff.

It is a hard thing to do, but if we could free our minds from all our early prejudices, we would easily find an answer to it. We should start in the spirit of a true inquirer with a perfectly clear and unbiased mind. Swami Dayanand has illustrated the answer by the help of the following parable, which explains the situation to every one's satisfaction.

A man with a blank mind set out to find out what was right and what was wrong. He visited the ministers of various religions, each of whom told him that his own religion was superior to all the rest. He was very much perplexed and did not know how to decide among so many claimants till at last he met a wise man who showed him the way, whereupon he called an assembly of the representatives of all the religions, sects and creeds. Questions were put to them one by one whether or not their religion taught to be good, kind and loving, to be honest and truthful and so on. All replied in the affirmative. Wherein lay the differences? was finally asked. Each one now put forward some peculiar theory of God and his mysterious messages, which to say the least, were beyond all human comprehen-

sion. The inquirer too could not understand why God should go out of his way to send so many messages which served no other purpose than to create dissensions among his people, and consequently he came to the decision that all those points on which all the religions (nearly a thousand in number) are agreed, constitute the right religion, while those on which they contradict each other are artificial and false.

Practical law of conduct is the only right religion, as it is on this part alone that all religions agree. "There is no religion," says Prof. Max Müller, "(or if there is any, I do not know of it) which does not say, 'Do good, avoid evil.'"

What about the dogmas then? We have already pointed out that all religions are derived from one another. Just as various divisions of the Christian religion have grown out of Christianity, various divisions of religions have grown out of religion. The doctrines of Mohammedanism are all borrowed from Judaism and Jewish beliefs are commonly Semitic versions of the Parsee theories. Christianity engrafted the Jewish dogmas on the beliefs of Mithraism which having traveled over from Persia had become the prevailing cult in Greece and Rome. Mithra was originally the Vedic God Mitra. Most of these theories, therefore, when traced back to their origin, become more clear and intelligible than they are in their present form. The sacrifice of animals was originally the killing of one's own animal self. Ignorance personified became the power of darkness with the Parsees, which was changed into Satan in the Old Testament. The true view of the dogmas, however, is that they are mere problems of philosophy. They develop, grow or change as the human intellect advances. Human intellect is finite and it can never be said to have reached the absolute truth. The progress of science and the knowledge of spiritual laws are constantly shedding new light on all metaphysical questions. It is therefore utterly wrong and even absurd to bind the human intellect by the intervention of supernatural forces.

But these maxims of morality are enforced by ordinary law, and it may be asked, "What is the need of religion?" The difference between the two is that religion places the ideal virtue before mankind and urges them to act up to that ideal, while the law only goes so far as it can force human nature to act upon those virtues. That is the ideal which the Vedic *dharma* holds up before men. It is not religion. It is *dharma*, which means law, duty, and right conduct.

· Agan: "It is certain that the mutual dissensions among learned

men have been the cause of mutual hatred, discord and strife among the masses. If all these men were not immersed in selfishness but wished to further the interests of all, it is very likely that all mankind would have one common religion."

What we want is to find out unity under all this diversity.

In order to know what man is, we can not look to the garb in which one particular individual is dressed. We can not even consider the outward appearance and description of the organs of the body, because the appearances and descriptions are sure to vary a great deal. We can simply say that man is a being who is conscious of his existence and has the power to think (Sanskrit *manas* = to think). Similarly in religion we want religion, not so many religions; we want gold and not the numerous articles which are manufactured out of it often with an amount of alloy. They are valuable because they are made of gold. We can achieve this end by the method of generalization; by sacrificing the non-essentials for the sake of the essentials, and by giving up what is artificial for preserving that which is real. We get at the right religion by cutting off the redundant and in many cases injurious branches of the tree. That will lead us to the trunk upon which these branches stand and which they hide from our view.

The ministers of various religions and creeds are the representatives of the founders of their churches. They share the responsibility of creating numerous divisions in religions. They understand full well that these divisions are based upon the personalities of these founders. All the religious quarrels could be ended by eliminating the personalities from religion. Religion has passed the stage of personal government. Democracy in religion is required in order to bring peace and harmony in the world. That is the message which Swami Dayanand brings to us. For the success of that mission he founded the movement called the Arya Samaj. It is not a new religion, neither a new faith nor creed. It is a society that works to bring man around to the original purity of religion and tries to deliver the human intellect from superstitious ideas about it. Swami Dayanand formulated the standard of the original religion into ten great principles which form the basis of Arya Samaj. Seven among these are the commonly accepted maxims of morality. They are, knowledge, truthfulness, honesty, love, duty, liberty, and self-denial. Among the remaining three, the first one says that all true knowledge and things known by that knowledge originate from one supreme power; the second, that that power which is all knowledge, all goodness, all bliss, etc., is the Ideal

towards which we should try to draw ourselves. The third says that the Vedas are the books of true knowledge and should be studied by every Arya.

The first two of course place the ideal of perfection and goodness before man and this is the only chief function of religion. As to the Veda, in a general way it means a book of true knowledge. According to the traditions of the Aryan race, this knowledge is stored up in the form of the four books which are admittedly the oldest books of mankind; and their study by the western scholars has already been attended with many important consequences. Their study, moreover, will surely convince every reader of one thing, that in the domain of spirituality and morality not a single new teaching has been given by any of the so-called great teachers and no new truth has been brought to light by the so-called revelations from God.

## THE PRAYING MANTIS IN CHINESE FOLK- LORE.\*

BY BERTHOLD LAUFER.

TS'AI YUNG (133-192 A. D.)<sup>1</sup> a scholar and statesman of the Han dynasty, was once invited to a party, and on reaching the house, heard the sound of a lute played inside. It was a tune to a war-song expressing a desire for murder. Ts'ai, for fear of being killed, at once returned. The host and his guests pursued him, and when questioned, Ts'ai gave the reason for his retreat. The guests said: "When you approached, we seized the lute, as we noticed on a tree in the courtyard a mantis trying to catch a cicada; three times the mantis had reached it, and three times it failed in its attack. We feared that the mantis might miss the cicada (and therefore played the warlike tune)." Ts'ai was thus set at ease.

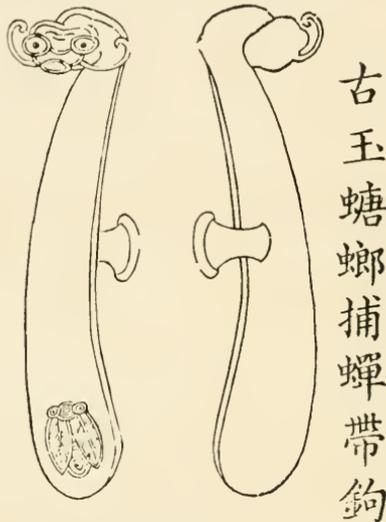
This story is the outcome of popular notions regarding the mantis which is looked upon as a formidable warrior endowed with great courage. The habits of the mantis are well known: the so-called flower-mantis in tropical regions resembles the flowers of certain plants, and in these flowers it lurks awaiting smaller insects upon which it feeds. What we term the "praying" attitude of the mantis in which its knees are bent and the front-legs supported on a stem, is nothing but this lying in ambush for other insects. Good observers of nature, the ancient Chinese were very familiar with its peculiar traits; they called it "the insect-killer" (*sha ch'ung*) or "the heavenly horse" (*t'ien ma*) from its speed, and greatly admired its bravery.<sup>2</sup> Its eagerness to catch cicadas is repeatedly emphasized, and above all, immortalized by the famous story of the philosopher Chuang-tse.

\* See the author's book, *Jade, A Study in Chinese Archaeology and Religion*.

<sup>1</sup> Giles, *Biographical Dictionary*, p. 753.

<sup>2</sup> Compare the Chinese drawing of the mantis.

“When Chuang-tse was wandering in the park at Tiao-ling, he saw a strange bird which came from the south. Its wings were seven feet across. Its eyes were an inch in circumference. And it flew close past Chuang-tse’s head to alight in a chestnut grove. ‘What manner of bird is this?’ cried Chuang-tse. ‘With strong wings it does not fly away. With large eyes it does not see.’ So he picked up his skirts and strode towards it with his crossbow, anxious to get a shot. Just then he saw a cicada enjoying itself in the shade, forgetful of all else. And he saw a mantis spring and seize it, forgetting in the act its own body, which the strange bird immediately pounced upon and made its prey. And this it



MANTIS CATCHING THE CICADA.  
On jade buckle.

was which had caused the bird to forget its own nature. ‘Alas!’ cried Chuang-tse with a sigh, ‘how creatures injure one another. Loss follows the pursuit of gain.’”

Surely, this pretty allegorical story has impressed the minds of the Chinese people deeper than the insipid account regarding Ts’ai Yung; and the Han artists, it is more credible, drew on Chuang-tse as the source for the motive of the mantis struggling with the cicada. Also Giles comments in his translation: “This episode has been widely popularized in Chinese every-day life. Its details have been expressed pictorially in a roughly-executed wood-cut, with the addition of a tiger about to spring upon the man, and a well into which both will eventually tumble. A legend at the side

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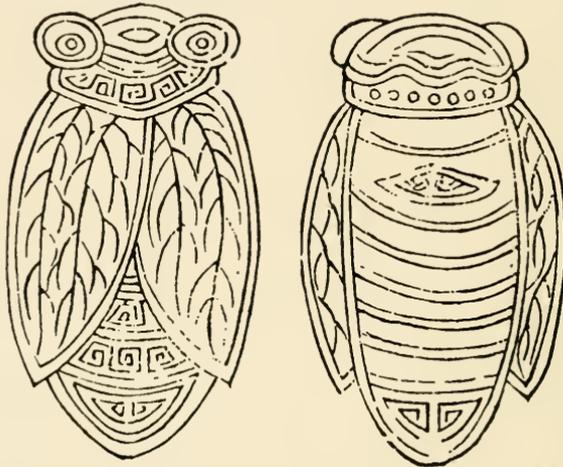
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THE PRAYING MANTIS.

reads,—All is Destiny!" And in this thought, I believe, we should seek also the explanation of the motive on the Han jade buckle. Certainly, it does not mean such a banality as that frigid "kill!" intimated by the philistine scribbler of the *Ku yü t'u p'u*, but it was a *memento mori* to admonish its wearer: "Be as brave as the mantis, fear not your enemy, but remember your end, as also the undaunted mantis will end!"

In another passage Chuang-tse exclaims: "Don't you know the story of the praying-mantis? In its rage it stretched out its arms to prevent a chariot from passing, unaware that this was beyond its strength, so admirable was its energy!"



JADE GIRDLE-PENDANT, CICADA.  
Showing upper and lower surfaces.

This is an allusion to another famous story contained in the *Han shih wai chuan*, a work by Han Ying who flourished between B. C. 178-156. It is there narrated: "When Duke Chuang of Ts'i (B. C. 794-731) once went a-hunting, there was a mantis raising its feet and seizing the wheel of his chariot. He questioned his charioteer as to this insect who said in reply: 'This is a mantis; it is an insect who knows how to advance, but will never know how to retreat; without measuring its strength, it easily offers resistance.' The Duke answered: 'Truly, if it were a man, it would be the champion-hero of the empire.' Then he turned his chariot to dodge it, and this act won him all heroes to go over to his side."

## MISCELLANEOUS.

### THE PREYING MANTIS.

While reading Dr. Laufer's interesting sketch as to the significance of the praying mantis in the folklore of China, the thought that the praying mantis might as well be spelled the "preying" mantis suggested to the editor the following lines:

When the praying mantis prays  
In the pleasant summer days  
Then beware,  
Good Cicada!  
For his pray'r  
Is not true.  
Flee Cicada,  
Good Cicada,  
He will prey on you!

Stop your singing  
And cease swinging  
In the balmy air  
On your blade of grass.  
Good Cicada, oh beware!  
Firm's the grip of his paws  
And his jaws  
Are like brass.

Small he is but strong,  
Minds not right nor wrong.  
While you sing  
He on you will spring.  
He will seize you,  
He will squeeze you,  
Will in battle meet you,  
Kill you then and eat you.

In his stomach surely  
You will prematurely  
Find your grave.  
Good Cicada,  
No armada  
Comes to save.  
Numbered are your days  
When the praying mantis prays.  
Trust him not! Without ado  
He will prey on you.

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### THE CHASM AT DELPHI.

• BY A. KAMPMEIER.

It may be of interest to Mr. F. C. Evans and the readers of "Pagan Prophecy" in the November *Open Court* to learn that the intoxication of the Pythia by exhalations from a subterranean cavity at Delphi is doubted by the American scholar Oppé (*Journal of Hellenic Studies*, 24) and by Von Willamovitz (*Hermes*, 38). They assert that Plutarch (*De def. orac.*, 42 and 48) only speaks of the vapors of the air surrounding Delphi as having an effect on the priestess, and of no cleft exhaling them; that Strabo (c. 419) tells the story of the cleft with the introductory words: "They say that, etc."; that no such chasm was possible geologically, Delphi standing on a natural terrace of clay-slate, but only in the limestone region of Castalia where the older

temple stood, destroyed 546 B. C.; that no such cave has been found in the foundations of Delphi. The inference therefore is that the Delphian priests kept up the idea among the people that the oracles were given in the old way.

Compare with this the discovery of an ancient oracle at Corinth by the American school of archeology under Hills. At a certain place in the wall surrounding the oracle an inscription read: "Approach is forbidden on pain of eight drachmae!" Why? One of the metopes of the wall formed the door to a narrow passage leading under the floor of the temple. A funnel-shaped hole in the pavement permitted the priests to let the divine oracles sound up from below.

On the belief of the classic world in a western continent which Mr. Evans mentions, compare also Clemens Romanus (*Epist.* XX, 8): "The ocean, which no man can traverse, and the worlds beyond are governed through the same commands of the Lord."

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### BOOK REVIEWS AND NOTES.

A NEW ROME. A Study of Visible Unity Among Non-Papal Christians. By *Richard de Bary*. London: Longmans Green, 1911. Pp. 100. Price, 2s. 6d. net.

Rev. Richard de Bary believes in a new Rome which would make possible a visible unity among non-papal Christendom. He writes "to promote the ideal of devotional unification, and let any forecast of church unity come to the front which shall prove helpful and conducive to fellowship." He has come to believe that there must be a supplementary mission of the Spirit outside the Roman fold. He came to Canada from England for the celebration of the Eucharist conference, and found Montreal one of the greatest Catholic capitals. He says: "I had been invited to stay over Sunday at the clergy-house attached to the French Canadian Church of the *Sacré Cœur*. The large staff of clergy lived here almost like religious, under the direction of their zealous curé. Their manner recalled the simplicity and courtesy of the clergy of the best French type. Only one or two of their number could speak English.

"In the parish were 15,000 people, all Catholics. The church is a stately Gothic edifice, entirely built of wood, recalling the reputed forest original of Gothic style. The exquisite carving and tracing of its lady chapel is one of the wonders of Canada. The faith had plainly lived on undiminished here since its first planting under the *ancien régime* of France.

"I said mass in the church on Sunday, July 28. At this, or the next mass, a congregation of about 3000 children attended. All were brightly dressed and models of reverent behavior. Masses ran on during the morning, and probably every man, woman, and child, physically able to attend, came in for one or other mass.

"In a single morning I had learned a lasting lesson that there is no inherent discord between the new democracy of America and the ancient Catholic faith. Few such model parishes exist in any Christian communions in the Old World as this first parish I was favored to see in the New World. It was an honor to have been a guest amid such a goodly company, whose faith and piety bore witness to the length and breadth and stability of the Catholic city of the saints."

His thought of a new Rome is expressed as follows:

"I thought that Rome was as the Judah among the Christian communions, that it was the one 'legally right' and 'legitimate' church in a strictly Judaic sense of the words. But the dayspring had not constrained all the early converts to bow to the Jewish law. The Holy Ghost had rested upon Judea in order to spread salvation to the Gentiles. Rome might have within itself the secret of the reconciliation of the churches. God had not required that all the world should bow to Rome. The Holy Ghost would bring his treasures of the grace of healing from its Roman shrine and spread the same without payment of submission to Rome, as he had once given his grace, *gratia gratis data*, to the Gentiles.

"The New Rome of which I dreamed, therefore, with signs like the fervent faith of the French of Montreal to guide me, was not any mere extension of Rome in America. It was rather the gathering of all the Christian communions, by the Holy Ghost, into a vast and free interrelationship and intercommunion, with the free institutions of America as its harbinger, with old Rome and its model of the city idea of a church as its guide."

The book is divided into five chapters: Forebodings, The Crossing Over, An Altar and Sacrifice in a Mountain Parish, Salvation is Unification, and The Church of England. The work is written partly in a chatty style, but is always interesting. The author concludes his book with a scheme for promoting unity and states four propositions by which he would accomplish the work. In the concluding paragraph he says:

"The great missionary order of Evangelical Christians might choose their own methods of showing their respect for visible unity through their forms of worship. Devotional *rapprochement* would, in truth, become an aim to be sought for by all Christians... After a while a permanent representative committee might sit to encourage and arbitrate in matters relating to devotional and ritual assimilation and do a work parallel to that undertaken by the *Congregatio Rituum* at the Vatican."

The way in which the important subject of this New Rome is treated allows us to recognize an active and strong spirit, but any one who knows the world will say that his ideal is merely a pious wish and there is no chance of its fulfilment under present conditions. κ

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WITHIN THE MIND MAZE. By *Edgar Lucien Larkin*. Los Angeles, California: Standard Printing Company, 1911. Pp. 523. Price \$1.25.

Mr. Edgar Lucien Larkin, the director of the Lowe Observatory, Mt. Lowe, California, U. S. A., well known as an astronomer and also as interested in the problems of the soul, has published a new book entitled *Within the Mind Maze*. The publishers characterize the contents of the book as follows:

"A new book containing a new view of mind, man and life. This book approaches the majestic study of primordial mind by entirely new methods and the use of new terms. It shows man's place in the astronomic universe, and in the domains of mentonomy, biology and organic chemistry. New researches in mind, life, electricity, evolution and mutation are presented in accurate and popular language without unnecessary technicalities. All can understand. The relation of man and mind to the new electronic base of nature is given in detail. The theories and facts deduced and discovered by Darwin, Mendel, Haeckel, Weismann, De Vries and others are compared with the latest facts of recent astronomy, biology, mentonomy and microscopy."

It is natural that in developing his ideas the author must frequently enter into the realm of hypothesis, and it would be difficult to say where he relies on genuine science and where the imaginary carries him away into the field of speculation. Our readers may remember that Mr. Larkin published another book of a similar kind several years ago under the title *Radiant Energy*, which attracted a good deal of attention, in which he also discussed the nature and origin of mind. We learn that the author has suffered a severe loss by having the rest of the edition destroyed in the famous dynamite explosion of the McNamaras in the Los Angeles Times building. κ

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DAS RELIGIÖSE LEBEN IN AMERICA. Von *Wilhelm Müller*. Jena: Diederichs, 1911.

The author, who is a retired principal of a school at Heppenheim, has visited America where he devoted his special interest to the religious life of the United States. The pictures which he draws are unusually fair and clear. In the several chapters he discusses the Puritans, the alienation beginning to take place between church and life, Unitarianism, Transcendentalism, Emerson, the Friends, Methodism, American Catholicism, life in the southern states, Protestantism, and the influence of political refugees of the year 1848, the American Jews, new formations such as Mormonism, Spiritualism, Christian Science, the New Thought Movement, Zionism and Dowie, Societies for Ethical Culture, religious orders such as the Y. M. C. A., revival meetings, Faith Cure, church and labor, religious liberalism, and in the last chapter he sums up his views on the future of religion. Considering the fact that so many visitors to America draw distorted pictures we must grant that the present book shows a sober mind whose descriptions are both reliable and fair. κ

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We publish in the present number an article on the Arya Somaj by Bhai Parmanand, late of the Dayanand Anglo-Vedic College (Panjab University) which is one of the chief educational institutions of the Arya Somaj. We have heard much in this country about the Brahma Somaj, a sect which may be characterized as Brahman Unitarians. Their view was well represented in the Religious Parliament by their founder Mazumdar. The Arya Somaj is less known although for India herself it is of greater importance for it represents more the national spirit of Hinduism and seems to have taken a deeper root in the minds of the people.

The character of the Arya Somaj and its history is here discussed by a man who has been a professor in one of their colleges for twenty years and can speak authoritatively, and it will be interesting to our readers to see how the facts of history are repeated in the mind of a genuine and patriotic Hindu.

It seems to us that the Aryan movement in India will be a benefit to the people. It may represent the spirit of India better than other forms of religion and may be regarded as a reform such as Christianity experienced in the age of Reformation. It simplifies the traditional Hinduism, it removes objectionable and superstitious features and admits a development in the right line of human progress. It is to be hoped that the British government will find it more and more to their advantage to educate India, and gain the confidence of India's native population. The more brotherly the two cooperate in the work of reform the better it will be for both parties.

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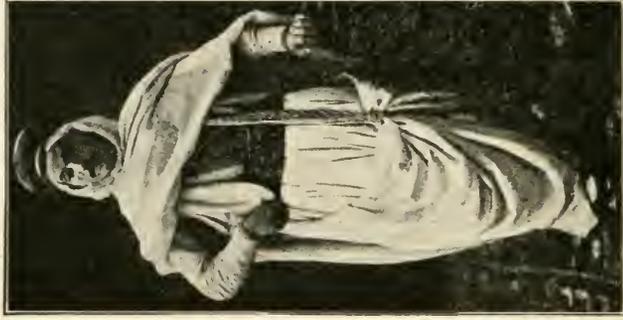
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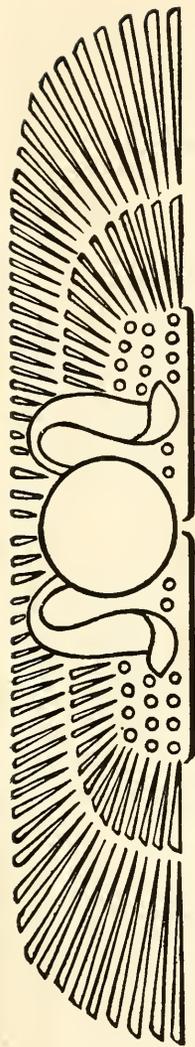
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