Mr. Gurney contributes two articles. In the first he describes some curious experiments in hypnotism, in which the subject is given an hypnotic suggestion to write such and such a word, and when awakened is utterly unable to recall the word, not even by an offer of money; but when seated at the planchette he unconsciously, or, as Mr. Gurney prefers, automatically, writes the word without knowing what he has written. The variations on this experiment are more curious than valuable; but the cardinal idea is a happy one, and promises to shed new light on the *rôle* of memory in hypnotic states. Many of the author's deductions from and explanations of his phenomena will not be indorsed by authorities in hypnotism. In his second article Mr. Gurney argues at great length for the admission of two kinds of suggestion in hypnotism, — the first the recognized physical suggestion; and the second a purely psychical suggestion, acting without contact and at a distance. He traces the relations and analogies of the one to the other, and marks off the boundary-lines of the two. All of this is decidedly premature, but it serves a useful purpose in singling out the very point upon which further study should and will be directed. Can the increased sensibility, the astounding subtlety, and the marvellous shrewdness of hysterical hypnotics account for the observed phenomena, taking into account the difficulties of a complete observation and our ignorance of the possibilities of deception, or must we introduce an agency new to the domain of science? Quite relevant in this connection is the footnote of Mr. Gurney's, pointing out that hypnotic subjects easily establish a fashion, and that here is the clew to the differences between the schools of Paris and of Nancy; and it may be added, that an omission of a factor such as this would make a telepathic fact of what, under this view, is only a shrewd and largely unconscious acting-out of a suggestion.

Among the critical notices, Mr. F. W. H. Myers writes a very matter-of-fact account of the work of the Seybert Commission, and describes some observations of Professor Foutan on seeing with the fingers, and hearing with the fingers, the chief feature of which is their incredibility. Mr. Myers overestimates their value, and they must be corroborated before they can rank as facts at all.

What in many ways is the most important and interesting contribution in the number is to be found on the last two pages. Here we are told that the Creery girls, from whom experimental evidence of telepathy had been gained, were detected in the use of a code of signals. They had both a visual and an ordinary code; and, though these codes may not have been used on all occasions, it throws discredit on all results obtained through their agency. If scientific observers can thus be deceived by young girls, — inexperienced, and apparently perfectly sincere girls, — ought not this to impress upon every investigator the profound importance of acquainting himself with the possibilities of deception, and perhaps to conduct his observations on the principle of the detective who held every one to be criminally inclined until proven to be honest?

Looking Backward. By EDWARD BELLAMY. Boston, Ticknor. 16°. 50 cents.

THE preface to this work is dated in the year 2000, and its object is to show the state of society which in the author's opinion is destined to prevail at that time. The author, being a novelist, has written the work in the form of a story, the principal actor in which, Mr. West, tells his own tale. He goes into a trance in the year 1887, and awakens in the year 2000, when he finds himself in a society so different from that he had been accustomed to, that it took him some time to get acquainted with it. This society is based on State socialism in the most extreme form. All industry is controlled by the national authorities at Washington, the individual States as well as all private corporations and capitalists being done away with. The authorities are almost exclusively occupied with managing the national industry, but little legislation being needed; for the people are all so very good, that they have no disposition to wrong each other, the few cases of crime that occur being regarded as examples of 'atavism.'

This amazing moral improvement, our readers will understand, is entirely due to the equal distribution of property. Every individual has an equal share with every other in the national industry, so that there is no check on the increase of population. On the other hand, every one is required to work according to his abilities; yet the men of the new era are represented as loving each other so very much that they are perfectly satisfied with this arrangement. Moreover, the wealth of the world is so enormously increased, that everybody lives as luxuriously as the richest folks do now. In short, the book depicts the usual socialistic Utopia, with many refinements of detail.

The absurdity of the whole thing is evident from various considerations. Besides the difficulty of managing such a colossal industrial system in the way supposed, — a difficulty which the author of the book fails entirely to appreciate, — the social order here exhibited assumes such an increase of wealth as could not possibly take place without mechanical or other inventions such as have not yet been even dreamed of, and which Mr. Bellamy does not even hint at. For, not only are all men to be rich under the coming *régime*, but they are not to work more than five or six hours a day, and are to cease work entirely at the age of forty-five. The idea advanced by the author, that such a vast increase in the production of wealth will result from a mere change in the mode of distribution, is preposterous.

Again: Mr. Bellamy's scheme assumes the possibility of a moral improvement such as cannot be made in less than some thousands of years, if indeed it ever can be. The theory that all wickedness and crime are due to the unequal distribution of wealth is contradicted by every man's personal consciousness and of all that we know of human nature. It should be added, that Mr. Bellamy's ideal of human happiness is any thing but a high one, for it consists mainly in 'easy and agreeable relaxation:' and he expressly says that 'bread and games' are the prime necessaries of life. In short, the book describes a state of society and of human life that is not only impossible, but in many respects as undesirable as it is impossible.

Memory and its Doctors. By Dr. E. PICK. London, Trübner. 12°.

Memory: What it is, and How to improve it. By DAVID KAY. London, Kegan Paul, Trench, & Co. 8°.

"Loisette" exposed, together with Loisette's Complete System of Physiological Memory. By G. S. FELLOWS. New York, The Author. 8°. 25 cents.

ALTHOUGH the search for the philosopher's stone has been abandoned, and men have come to agree that there is no royal road to knowledge, still one can often detect in many a mind a lurking fondness for the belief that there may possibly be some undiscovered short cut to mental attainment which a modern Raymond Lully or Ponce de Leon may reveal in a few lessons under the inspiration of a proper fee. It seems not a rash assumption to make, that, of the many thousands who within a few years have paid tribute to a certain 'American memory professor,' not a few came with the secret hope of emerging from the five lessons with their entire mental furniture put into perfect order and vastly improved. While these people lend a willing ear to the physiologist when he explains to them how mental acquisition is related to organic growth; how everywhere normal growth is a gradual, assimilative, and digestive process, not to be hurried by overdosing and cram; yet they have not the necessary faith to apply this knowledge to the particular case in which they are interested. This, together with a successful advertising machinery and production of testimonials, must largely account for the phenomenal success that has attended this professor of memory.

Remarkable memories have from ancient times attracted a good deal of attention. Especial attention seems to have been given to the subject of artificial memory throughout the sixteenth, seventeenth, and eighteenth centuries. Dr. Pick gives a convenient sketch of the history of the topic. Petrus de Ravenna is said to have played a game of chess, and to have dictated two letters on stated topics at the same time that dice were thrown and the throws recorded. When the game was over, he recited all the moves of the game of chess, all the words of the two letters backwards, and each throw of the dice in order. System after system of mnemonics was proposed, each promising more than its predecessor, and all painfully artificial. The association of dates and items to be remembered visually with the compartments of an imaginary house, or orally with the names of the letters, with numbers and harsh com-

binations of meaningless sounds, of which the 'Barbara, celarent, etc., is a typical survival; the translation of letters into numbers and associations formed on ridiculous principles, seasoned with wretched puns, — all these flourished, and had their day. One doctor even invented a pill that would improve the memory; while another announced with great *éclat* that the seat of the memory is the occiput, and that roasted fowl, small birds, and other delicious things, acted favorably on this organ. Even the pledging of the pupils to secrecy is not a new invention. These systems have been well likened to the keys, with enormous brass stars attached, that one gets on steamboats. The object of the appendage is to prevent one from forgetting to leave the key behind, but the encumbrance one has to carry to secure this end is a greater annoyance than the task of remembering to return the key.

Only in very recent times has the scientific study of memory as a psychic function been seriously undertaken, and the subject been popularly treated in a sound manner. The name of Dr. Pick deserves to be mentioned as among those who first broke away from utterly artificial systems, and, while modestly claiming the success of his teaching, presented the topic on a natural basis. His present volume is mainly a reprint of former lectures, with a history of mnemonics, and a series of testimonials of the success of his teaching. It seems to have been brought out by the unjust use of his work by Loisette.

Dr. Kay's work has many points that deserve high commendation. "The author has little faith in arts for improving the memory in two or three lessons, but he has unbounded faith in systems of education, properly conducted, to effect incredible improvements in this direction." Accordingly he approaches the problem from a broad psychological point of view, with no haste to suggest startling practical results. A very small portion of the book is devoted to a study of what is currently understood as memory. The main object is to show the position of memory in the hierarchy of mental powers, and set forth the modern doctrine of its physiological concomitants. An entire chapter is devoted to the relation of body and mind; an equally full description of the senses and their mode of acquiring information is given; the nature of mental images, and the *rôle* of the unconscious, are similarly treated. We are then prepared to consider the special processes upon which a good memory depends. First and foremost is close and accurate attention to the impression at its first appearance. The attention must be trained, and sense-perception made quick and accurate, if memory is to be retentive. Not less important is the association of our knowledge by natural links, and along the lines of our own interests. It is only by such means that a serviceable memory can be developed, if by memory we mean, not the power of performing a few striking mental gymnastics, but the power of having our knowledge ready to hand, and carrying it with little effort. That this problem changes its character with each individual, goes without saying. Mr. Kay's book is full, in fact over-full, of citations from various authorities, and is an admirable book to put in the hands of an intending student of the subject. It is a pity that his physiology is sometimes at fault, that his authorities are at times promiscuously chosen, and especially that he has not taken advantage of the most recent technical studies of the memory, of which the work of Dr. Ebbinghaus is so excellent a type. These seem to be omitted because they are in a foreign tongue. From the liberal use that Mr. Kay makes of translated works, one can infer how much his book would have increased in value had he gone to the originals.

The last volume on our list has little claim to serious consideration, were it not for the practical service that a knowledge of its purpose may render. Mr. Fellows here prints the whole of Loisette's lesson-papers, urging that they have not been copyrighted, and that his signature to a pledge of secrecy was secured on false pretences. He furthermore gives evidence that casts a serious doubt upon the honesty of Loisette's career. The system itself is certainly a most wonderful combination of the endless repetition of a few cant expressions; of persistent reference to the originality and excellence of the Loisettian method, duly emphasized by Italics and bold type; of most careful prescriptions against breathing an atom of this sacred information; and of a general unacknowledged selection from previous writers on the topic. A sentence will probably suffice to illustrate the tone of the teaching: "My Discovery, so far as it pertains to this Lesson, demonstrated *what had never been suspected by any one before*, — that all memories — the strongest as well as the weakest — are PRODIGIOUSLY STRENGTHENED in both Stages by learning and reciting forwards and backwards, or, what is better still, by *making* and *repeating* from memory both ways a series of from 100 to 500 words arranged in conformity to the three Laws given below, which Laws were revealed to me, on their Physiological, or only true side, by my Discovery." It is certainly surprising that this 'system' should have met with the success it had; and it is hoped that its publication in this form will not only prevent the swelling of the list of the victimized, but will warn all against any one who advertises a royal road to any mental acquisition the gate of which is opened only by a fee and a pledge of secrecy.

The Animal Life on Our Sea-Shore. By ANGELO HEILPRIN. Philadelphia, Lippincott. 12°. 50 cents.

THIS is a handbook on the local fauna of Philadelphia and of the much-frequented New Jersey and south Long Island coasts, which will certainly prove extremely interesting to all who care to know something of the animal forms they may see during their summer vacations. The book may be relied upon as being thoroughly accurate; but it is in no way hard reading for the unscientific, and tells them just what they want to know, which is what they may see by the seashore, and where to see it, at the same time giving in each case the life-history of any specimen they may procure. We already have Emerton's 'Life on the Seashore,' designed for the New England coast, and this little book covers another region largely frequented during the summer season. It treats of the shell-fish, the jelly-fish, the star-fish, the worms and sponges, and some coastwise fishes.

NOTES AND NEWS.

THE letters in recent numbers of *Science* describing a peculiar form of northern lights serve to call to the mind of the editor of the *Progressive Age* a sight that he witnessed in August of last year when on board the steamship 'Ozama,' passing along the north-east coast of the island of Santo Domingo, and near to the northern entrance to Mona Passage which connects, between the islands of Porto Rico on the east, and Santo Domingo on the west, the Atlantic Ocean on the north, and the Caribbean Sea on the south. "We were southward bound, and the hour was about nine o'clock at night. The moon was at its full, or thereabouts, and very bright, as is the case in the tropics, especially in the summer season. The sky was entirely clear at the time, with the exception of a small cloud forward of the ship some distance, but between the moon and the coast, which is low and flat for many miles at that part. Suddenly a sharp shower of rain commenced to fall from the cloud, and immediately there appeared over the land, apparently close to the edge of the coast, the most perfect and beautiful rainbow it has ever been the pleasure of the writer to see. Everybody but the writer and the captain, who was on the bridge, were below at the time. The latter said it was the first occurrence of the kind that had come under his observation. That was certainly the case with me."

— The number of words in a person's vocabulary has been frequently and variously estimated. The old philologists thought that few persons used more than ten thousand words, while the ordinary unlettered man possessed from three thousand to four thousand words. It is well known that Shakspeare's vocabulary includes fifteen thousand words, and Milton's eight thousand words. A Swiss writer, M. Edmont de Beaumont, has recently made estimates far in advance of these. He maintains that rustics have at their command as many as seven thousand words; artisans, ten thousand; tradesmen, fifteen thousand; men of culture, twenty thousand; and university graduates, twenty-five thousand. The minimum number of words "without which one makes a pitiful figure in a conversation among cultivated persons is ten thousand." M. Beaumont himself claims to have the use of twenty thousand words in several languages.