expedition sent out jointly by the Geological Survey of Canada and the commissioner of crown lands of Quebec. The latter has recently sent surveyors who explored the numerous rivers emptying into the St. Lawrence. I mention particularly C. E. Forgues's survey of the rivers St. John, Mingan, Natashquan, and Esquimaux. Last summer the missionary Edmund James Peck succeeded in crossing Labrador from Richmond Bay to Ungava Bay. Green Island, in Hudson Bay, as shown on Packard's map, does not exist according to observations made by Gordon on his expeditions to Hudson Bay. The archives of the Department of Marine of France possess a number of manuscript maps of Hudson Strait, which, however, have not been published.

LABRADOR, FROM THE BRITISH ADMIRALTY MAP NO. 863.

An interesting sketch of the physical geography of Labrador was given by Dr. R. Koch, who wintered in Nain in 1882–83, and visited the stations of the Moravian missionaries. He describes the country in the *Deutsche Geographische Blätter* (vol. vii. No. 2, 1884). The outlying islands are barren and destitute of vegetation; the valleys adjoining the bays and fiords, however, have beautiful forests of pine and larch, surrounding dark, quiet lakes. Towards the mountainous region the woods are lighter, and the numerous dead trunks testify to their struggle against the gales of winter. Travelling by sledge westward from Nain, the plateau of the interior is reached after four or five days' travel, of about thirty miles each, through fiord-like valleys. After one or two days more, the height of the land is reached. The height of the land approaches the shore in the northern parts of the peninsula, being only one day's journey distant from Rama. The narrower the mountainous district becomes, the higher it is. Near Hoffenthal the mountains do not exceed a few hundred feet in height. At Nain the mountains close by the sea are from eight hundred to twelve hundred feet high. The Kiglapait, between Nain and Okak, have an elevation of several thousand feet. North of Hebron the country is alpine in character, the mountains rising almost vertically from the sea. Deep, narrow fiords intersect the coast, which is not sheltered by islands from the heavy swell of the ocean. But, although the peaks attain a great height, no extensive snow-fields and glaciers are found. From Hebron to Komaktorvik there are hardly any islands off the coast, but farther north it is skirted by innumerable dangerous rocks. Near Rama, Koch ascended a mountain twenty-six hundred feet in height. He describes the scene as very grand: "At my feet I saw the deep bluish-green fiord surrounded by steep, wall-like cliffs. The mountains were covered with shrubs colored red by the first frost of the season. To the left spreads the dark blue ocean, with its greenish-white icebergs. On the opposite side of the fiord, and towards the west, extended steep and ragged mountains, and narrow gorge-like valleys, in one of them a dark lake, the water of which, black as ink, reflected the high peaks. In the interior I saw mountains rising to still greater heights, and covered with fresh snow extending north and south as far as I could see. The highest points of this range are opposite the island of Aulatsivik, and reach elevations of from eight thousand to nine thousand feet. While mountains less than fifteen hundred or two thousand feet in height are rounded, and bear evidence of having been covered by glaciers, the ragged forms of the higher mountains show no such signs." Continuing, Koch describes the terraces and lakes formed by the rivers and the old beaches, which he found in several bays as high as one hundred feet above the level of the sea.

Some additional information is contained in the publication of the reports of the German polar stations of the international system. Since Koch's visit to Labrador, meteorological observations are being made at all missionary stations of the Labrador coast, which are of particular value as filling the wide gap between the system of Canada and the Danish stations in Greenland.

PHYSIOLOGICAL AND PATHOLOGICAL REVERSION.

WRITERS on evolution, and especially Darwin, have endeavored to explain many curious facts in the forms, colors, and general appearance of animals by reversion to a condition existing in ancestors more or less remote. As this explanation has seemed to be the only one that met the cases, it has been largely accepted. But, so far as I know, physiological and pathological reversion in the sense in which the terms are used in this paper, has not been employed to any appreciable degree by writers of any class to explain phenomena which seem to me to gather fresh interest around them, and appear in a new light when thus viewed.[1] By physiological reversion I mean a return to a condition functionally similar to, if not identical with, that existing in some lower form; and by pathological reversion, an analogous result dependent on a disordered condition (disease).

It is now almost superfluous to point out that the embryo of the highest mammals passes through stages of development closely allied to the permanent forms of groups of animals lower in the scale. But that there is also a close functional resemblance in many particulars has not been much insisted upon. The subject is so large that the various adaptations in the embryo to an environment that is but temporary can be only indicated, and not treated in detail. It is plain that the embryo of the mammal, being surrounded by a fluid medium and drawing the oxygen supplies for its tissues independently of any actual contact with an atmosphere, must resemble functionally aquatic animals proper in many respects. It breathes by the placenta, virtually as the fish and other aquatic animals by gills. The condition of the blood puts it on a par with lower forms; and, even in the highest intra-uterine stage of develop-

[1] It was not till long after this paper had been written, and a considerable time after it had been read before the Medico-Chirurgical Society of Montreal, that I became aware that the principle involved in the discussion had been previously announced by Dr. Milner Fothergill of London in a communication printed in the *Medical Press and Circular* for August, 1886. I am glad, however, to be able to make this acknowledgment on behalf of so bold and original a writer as Dr. Fothergill.

ment, the blood supplied to the tissues is not completely aerated, — a condition remaining in all forms lower than the birds. Many functions peculiar to the mammal, or, if not actually characteristic, but indifferently developed in lower forms, are still less marked in the mammalian embryo. If there be consciousness, it is of that obscure kind existing only in forms of life low in the scale. Reflexes, indeed, there are in abundance, and probably much nervous automatism; but such limited action of the nervous system is precisely what distinguishes lower from higher groups of animals.

Nor is the adaptation of the newly born mammal to its surroundings immediate. Throughout the first days of the life of the infant, such adaptation is very imperfect, and in consequence many children perish. Further, the resemblance of the infant to animals of lower groups is shown in many directions, and especially in the neuroses and psychoses. The study of infant psychology has of late attracted much attention, and promises most instructive results.

Turning from embryonic and infantile life to the opposite pole of existence, old age, there is much that points in the direction of reversion. It is not a matter of great importance whether we regard this as physiological or pathological. Shakspeare's unrivalled description of the epochs (biological and psychological) of human life will occur to many readers. We must not, however, push the resemblances between the infantile and senile stages too far. There is sometimes a functional likeness which can scarcely be considered genuine physiological reversion, although it is a species of functional reversion, for the consequences are the same. But in general in both conditions there is an imperfect adaptation to the environment. Moreover, in certain respects the old man reverts rather to the functional condition of lower forms of life than directly to a previous stage in his own existence. Thus the imperfect action of the respiratory, circulatory, cutaneous, and also of the nervous system, by which the functions of the cerebrum and the senses are weakened, are all either physiological or pathological reversions, as we choose to regard the matter. But it is not on such facts, however, that I would rely to establish the principles of this paper.

In the various stages of slow or natural death, we have the clearest evidence of physiological reversion in not one but many different systems of the body.

Normally expiration is largely passive, though possibly less so than the text-books of physiology have represented; but, as is well known, in the dying man this phase, and indeed all phases, of the respiratory act are in turn or contemporaneously modified: there may be a diminution of one phase, and an exaggeration of another, etc. In the frog and turtle both inspiration and expiration are active: in such animals we recognize a function, moreover, of the mouth and pharynx, in respiration, normally unknown in man. Dr. Garland has, however, pointed out that in the tracheotomized dog, and, as he believes, in man under the same circumstances, and also in the moribund, a form of the throat respiration supervenes. He has proved this experimentally in the tracheotomized dog (*Journal of Physiology*, vol. ii.). In other words, there is a resemblance to what exists normally in the frog. Garland recognized this, though he has not spoken of it as a physiological reversion. But apart from this minor reversion, it is plain that in general the respiration of the dying bears a resemblance to that of the groups with an active phase in both halves of the act. Further, there is frequently a marked facial and laryngeal respiration, so well seen in the normal breathing of such lower mammals as the rabbit.

Accompanying this alteration in the respiration, there is a great change in the circulation. As I have shown, as the result of a special study of the subject ('The Rhythm and Innervation of the Heart of the Sea-Turtle,' *Journal of Anatomy and Physiology*, vol. xxi.), functional action ceases in the hearts of the cold-blooded animals invariably in a certain order; that is to say, the parts latest developed phylogenetically, as the ventricles, are the first to cease to act. The same applies to the mammal, and I have elsewhere ('A Physiological Basis for an Improved Cardiac Pathology,' *Medical Record*, Oct. 22, 1887) expressed the conviction that it is fortunate for man that such is the case. It is difficult to see how the ventricles could retain at once that sensitiveness and power to adapt to the ceaseless and innumerable changes in the inner life of a mammal, and also the resistance so marked in the auricles and the great veins at their junction with the right auricle, corresponding to the *sinus venosus* of lower forms. Now, in the moribund there may be only an occasional beat of the ventricles to several of the other parts of the heart; or the ventricles may pulsate so feebly as to expel but little blood: hence the latter becomes gradually more venous, with corresponding effects in the venous channels, which become more prominent; in the nutrition, leading to lowered temperature generally most pronounced in the parts most distant from the heart; in gradual loss of all the functions of the cerebrum; finally, the only muscles that are functionally active are the respiratory, the sphincters, etc. In a word, the dying human subject sinks functionally lower and lower in the scale of animal life. There is physiological reversion of the widest kind. This seems the most instructive aspect of the facts; indeed, I can see no other way in which a really philosophical significance can be read into such phenomena.

It may be readily perceived that in sleep itself there is a daily reversion. Sleep not only reduces all human beings to the one level, but it puts all mammals on the one plane. Now, it will be seen, if we consider the nervous system, that the parts peculiar to man, or most developed in man, are the very ones that for the time being are as good as annihilated in sleep. Why should this be so? Why should this order be followed? To say that the parts of the nervous system remaining functionally active are those necessary to maintain the vital functions, in reality throws no light on the question unless we regard man as derived from lower forms, while the whole becomes clear enough if we admit this. Much the same line of argument applies to the reversions witnessed in hypnotism, somnambulism, and allied phenomena.

Hibernation is one of the most interesting examples of physiological reversion to be found. We witness in the bat, though one of the most active of animals, a return during hibernation to a condition very much like that normally present in a cold-blooded animal such as the turtle; while the cold-blooded groups themselves pass into a winter sleep allied to the quiescent state of plants or the 'resting stage' of the infusorians. Reversion alone — physiological reversion — seems to explain such behavior.

These general phenomena prepare us to understand certain results following experiment, which, so far as I know, physiologists have never explained satisfactorily. I shall take my illustration chiefly from cases mentioned in the ordinary text-books, and especially from the magnificent work of Prof. M. Foster, as in that we find subjects usually considered from different points of view.

It has been pointed out that if the nerves supplying the posterior pair of lymph hearts in the frog be divided, though their action ceases for a time, it is eventually resumed; that if the sino-auricular junction of the heart of the turtle be ligatured under favorable circumstances, the action of the auricles and ventricle, temporarily arrested, may be resumed.

In general, if the sinus, or the sinus and auricles, be ligatured off from the ventricle in a frog or turtle, and all the cardiac nerves be divided (precluding the possibility of nervous stimuli reaching them from distinct centres), these parts of the organ, I have observed, will beat more forcibly against the unusual resistance than before.

It is stated, that, when the cervical sympathetic is divided, the dilatation and cessation of rhythmic action of the arteries in the ear of the normal rabbit, ensuing, are finally followed by a return to the normal condition.

The latter has been explained by the assumption of a local nervous mechanism, which, though habitually influenced by the central nervous system, suffices of itself when the connection with the nerve-centres is severed; but such local nerve-mechanism has never been demonstrated anatomically. These and many similar cases are explicable by physiological reversion. In lower forms,[1] in which it is quite impossible to believe in a local nervous mechanism at all, there is pulsation in vessels, etc., owing to the rhythmical action of unstriped muscular fibre or of cardiac muscle. This function of the muscle is no doubt under the control of the nerve-centres in all the higher groups of animals; and when it is exhibited apart from such connection, we naturally seek for an explanation.

[1] This subject is discussed in my paper on the 'Causation of the Heart-Beat,' etc., in the *Canada Medical and Surgical Journal*, January, 1887.

To my mind, the only one adequate is to be sought in physiological reversion. Whether there are not examples of it even when the nervous system is intact, as in excessive action of the bladder, ureter, etc., in cases of obstruction, is worthy of consideration.

Dr. Pye-Smith (*Journal of Physiology*, vol. viii.) has maintained, from certain experiments made by him, that the vessels of the ear of the rabbit, etc., do not regain their tone after section of the nerves concerned, and concludes that nerves are not essential to nutrition. However it may be as to the first proposition, I cannot help thinking that the author's conclusions are broad to the verge of decided error when applied beyond the case in point.

Assuming, however, that in most instances the vessels do not regain tone, I should interpret the case as one of still more remote reversion to a condition when nerves were not required for nutrition, — a condition existing in several large groups of animals. Such a case in the mammal must be very rare, however, and is offset by thousands of facts that show that nutrition is dependent on nervous connection. It would appear that oxygen may be absorbed both from the skin and the alimentary canal; and, if we may judge by many analogous instances, this capacity would be augmented when the individual greatly needed such help, owing to imperfect action of the lungs. In such instances we have, on the one hand, a retained function operating in man to a very minor degree; but, as is now well known, in batrachians the skin is an important respiratory organ, though also one acting very much in a manner supplementary to the lungs, as circumstances necessitate. When in man the skin and alimentary canal function as respiratory organs to an unusual degree, we have physiological or pathological reversion.

It is well known that in certain pathological conditions (hysteria, etc.) large quantities of gas are secreted by the alimentary tract; nor is this so surprising when it is remembered that the digestive canal and the respiratory organs have a common origin from the same cell layers of the embryo.

If our swallowed oxygen can be absorbed by the alimentary canal, of which there is no reasonable doubt, it is plain that we retain a function discharged by an analogous organ, the air-bladder of fishes.[1] Certain groups of turtles (if not all, occasionally, as I believe) have a species of pharyngeal respiration. Oxygen is absorbed from the water gulped into the pharynx, and possibly the case of absorption of gases from the alimentary canal of mammals is still more like this than the analogous instances already mentioned; but, at all events, there is a potential capacity in the alimentary tract of man for respiratory functions which is unquestionably under certain circumstances considerably developed; and the most natural explanation is physiological reversion.

In an allied system, the renal, we have evidences of physiological reversion. In most fevers the skin is less active, and the kidneys function excessively or at least differently; the urine, though scanty in quantity, is of high specific gravity, and thus resembles more the same secretion in not only lower mammals, but the lower divisions of vertebrates. In a whole host of diseases[2] there is a great increase of a constituent which is but scantily present in normal urine, — uric acid. But uric acid replaces urea in fishes, reptiles, and birds; and in not a few cases in man in which the uric acid is increased the urea secretion is diminished. That man's kidneys should thus have the capacity to function in a manner analogous to those of lower forms, calls for explanation. The fact that in such cases the reversion does not wholly cover the functional disturbance arising from or giving rise to this change, is not a serious objection; for it is not to be supposed that an animal adapted to new conditions should, by any reversion to an ancestral state, escape wholly, or even in great part, the penalties of incomplete adaptation.

In the digestive system of man and other mammals we have interesting instances of physiological and pathological reversion. Regurgitation of food is normal in some birds, and I am inclined to believe that it is more common in lower vertebrates than has been as yet clearly ascertained. But the remarkable regurgitation of ruminants seems to be a specially developed function. Different groups of animals vomit with very varying degrees of facility. There is to my own knowledge in man a tendency to antiperistalsis in the œsophagus, if not the pharynx, independent of acid eructations. Some individuals experience this when there is interference with the regularity of the action of the bowels. Cases have been reported in which there seemed to be habitual regurgitation of food, like that of birds or even ruminants. Here again the most natural explanation seems to be that the alimentary canal of mammals, including man, retains a capacity to revert to a condition existing in a higher degree in antecedent forms; or, to interpret the matter slightly otherwise, that man retains a capacity which in some lower forms has been specially developed (ruminants, etc.), and which in himself, under certain abnormal circumstances, becomes greatly developed, — facts explicable by general community of descent.

In the cases in man referred to above, the mere law of habit does not of itself suffice to explain the facts: indeed, apart from the wider laws of descent, there is very little basis for the action of such a principle; there is no fulcrum for the lever, or, at best, a very unsteady one.

In diseases of the blood or blood-forming organs we have some remarkable instances of functional reversion. Though exact quantitative determinations of hæmoglobin are wanting for most lower vertebrates, there can be do doubt that in mammals the quantity of this substance furnished to the system within a given time is much greater than in those groups requiring less oxygen for their tissues, in consequence of a feebler cell activity. But in cases of anæmia in man the quantity of hæmoglobin may be greatly diminished, one result of which is that the subject is reduced not only as regards the condition of the blood, but in several other respects, to a state bearing a more or less close resemblance to life in the lower vertebrates. There is diminished activity in the locomotor, the nervous, and other systems of the body. The subject requires rest, careful feeding, quiet of the mind, etc. The treatment is unconsciously based on this fact of reversion. It may be stated, in truth, that the anæmic subject is unable to discharge the functions which are most characteristic of man, and that he naturally deports himself like a lower form. In leukæmia there is a still more marked reversion, for the blood in this disease approaches the condition found in the invertebrates, in which, as a rule, the red blood cell or hæmoglobin in any form is wanting. This being the case, it is not surprising that the disturbance of the normal functions is so great: the marvel is rather at man's capacity to adapt at all to such unnatural conditions; which, however, is clearer on the doctrine of descent from lower forms and in the light of the conception of physiological reversion than by any other explanation.

In that form of anæmia or chlorosis due to an imperfectly developed vascular system generally, we surely have a clear instance of reversion, so marked that during the whole lifetime of the individual there may never be other than the most defective adaptation to environment.

Instances of cyanosis due to permanence of fœtal conditions of the circulation, and therefore resembling those normal to the frog and turtle, are such clear cases of human reversion as only to require mention.

In cases of valvular diseases with dilatation of the heart, or indeed any condition of this organ that permits of regurgitation with imperfectly aerated blood, we have similarly a reversion. It will be found that in not a few diseases of the heart, — in the condition of that organ during fainting; after shocks which have temporarily suspended many functions of the nervous system, and in consequence greatly imperilled life, — in all such cases it will be found that those parts of the heart the earliest developed in the history of the animal series are the very parts to continue their action latest. Now, this is at once fortunate for the mammal, and of great significance, inasmuch as the latest investigations show in the clearest way that the action of the ventricles is dependent on the functional integrity of the sinus and auricles, especially of the sinus. Suppose that the reverse were the case, and the sinus (or great veins) and auricles were the first to cease pulsating: the beat of the ventricle would be of comparatively little use; but apart from this, what explanation can be given of this peculiar sequence in the mammal independently of derivation from lower forms, which makes all clear? If this doctrine of physiological reversion went

[1] See a paper by Gage in the Proceedings of the American Association, vol. xxxiv.

[2] The writer discussed the subject of uric acid in a short paper in the *Medical News* for June 27, 1885.

no further than the circulatory system, it would throw a flood of light on the significance of otherwise obscure if not absolutely inexplicable phenomena. But it is to the nervous system that we must look for evidence which places the doctrine beyond cavil to a degree perhaps not equally clear in other parts of the economy.

When a mammal is poisoned by curare, by which the nervous influences normally reaching the tissues and regulating heat-production (and, as I believe, nutrition) are wholly or partially cut off, the mammal becomes virtually a cold-blooded animal. Its temperature rises and falls with that of the ambient air. This is one clear example of physiological reversion experimentally produced. It is, however, only one of many that might be instanced. It is well-known, and can be shown in the simplest manner, that when the head of a frog is removed, reflex action is more readily excited: the same applies to the removal of the cerebral lobes of the mammal. As Goltz has pointed out, one of the most remarkable results following removal of large portions of the cerebral lobes in the dogs which this experimenter kept under observation, is, as I can myself testify, the increase of reflex action. The animal becomes a sort of machine, which one may manipulate at will. A similar result follows in man when the higher centres of the cerebrum are rendered functionally inactive by disease or injury.

Now, in all these cases the animal loses its own peculiar character, and sinks to the level of some form lower in the scale. All will agree that the higher forms of true automatic (spontaneous) action in the physiological sense are dependent on the existence of the cerebrum. It follows, therefore, that the lower we pass in the scale of life, the more machine-like animals become.

Pathological reversion is most plainly illustrated by the results of hemorrhage into the cerebrum. Dr. Hughlings-Jackson has so well described the order and relation of the various events, that I shall here quote his own words in describing lesions of the cerebrum (*corpus striatum*), from hemorrhage: —

"It will be found that those parts suffer most and suffer longest which have the more voluntary uses. This is notorious of the arm and leg: the arm nearly always suffers more, and recovers later, than the leg. Of course, the distinction into complete and incomplete hemiplegia is artificial. There are all degrees of paralysis according to degrees of gravity of the lesion. But there is an order in which paralysis increases in increasing gravity of lesions. We observe that the graver the lesion, not only are the more voluntary parts (arm and leg) *more* paralyzed, but that the further spread in *range* is the paralysis, and the method of its spreading is from the more voluntary to the more automatic parts. Thus, neglecting very small clots, a considerable lesion paralyzes only the most voluntary movements of one side of the body, those of the face, arm, and leg, and these parts in degree according to their degree of voluntary use. A larger lesion not only causes a deeper and more permanent palsy of these three parts, but it leads also to implication of more automatic parts. In still larger lesions the palsy spreads to the *most* automatic parts of the body, even to parts supplied by ganglionic nerves. It produces stertor from palsy of the palate and palsy of the respiratory muscles and of the heart, — the palsy of respiration and of the heart showing itself chiefly in *slowness* of movement. There is also abasement of temperature." — REYNOLDS'S *System of Medicine*, vol. i.

I have intentionally quoted the exact words of this eminent investigator of the abnormalities of the nervous system constituting disease, so that their interpretation alone may rest with me.

It being granted that the lower we pass in the scale of animal life the more machine-like or automatic does the organism become, it will be clear, that, taking the various degrees or grades of paralysis as described above, we have likewise degrees of resemblance to lower forms; i.e., the graver the paralysis, the lower in the scale must we seek to find an animal comparable to man in this condition. The slowing of the heart and the lowering of the temperature are both modes of approach to the normal functional condition in cold-blooded animals.

When we add to this, or take by itself, paralysis of the muscles of the face, by which the expression peculiar to man is lost, we have a condition plainly like that in lower mammals, and, in extreme cases, even like that of the lower vertebrates, in which facial expression as determined by muscular action is minimal.

It must be conceded that the uneducated deaf-mute is in a condition mentally much nearer that of the higher mammals than is his uneducated fellow-man in possession of all his senses. But in aphasia, the result of disease or shock, there is in man plainly a marked reversion to a condition mentally resembling that in the 'dumb-brutes' about him.

In the case of the idiot we have an example of man in many respects inferior to the higher mammals.

But it is not my intention to treat the subject of psychological reversion in this paper. The subject is at once large, tempting, and, to my mind, furnishes evidence the most conclusive for the doctrine of descent with modification from lower forms as an explanation of man's nature.

One naturally looks about for an explanation of such remarkable facts as the order of muscular failure or paralysis as indicated in the paragraph quoted above. The entire brain may be separated from the medulla in a rabbit, and respiration still continue. The lower we descend in the animal scale, the more do we find the brain reduced to a mere repository for mechanisms adapted to regulate those processes constituting the so-called vegetative functions; but the question again and again recurs, 'Why in mammals, why in man, should the functions first to fail be those peculiar to them or to him, and not the reverse?'

The longer even in the lifetime of a single individual a certain form of muscular action has been practised, the less attention is required for its performance, the less voluntary, the more automatic it becomes. But would the duration of man's existence on this planet suffice to explain, on any system of gradual progression or functional improvement, the wonderful automatic action of all of those mechanisms essential to the maintenance of life?

The doctrine of descent renders the whole plain enough; and unless we adopt the view that man appeared suddenly and independently upon the scene, fully equipped for the battle of life, it seems but rational to assume that with all his departures, both by way of progress and retrogression, his functions are what they are by reason of such relationship as we are indicating. The morphologists have done much to account for the affinities of form or structure in the animal series: it remains for the physiologists to do their part in showing how the functions of the higher animals are related to the functions of the lower.

But once accepting this position, it is possible to explain phenomena following experiments on animals, and growing out of the experiments disease is producing, or, as I would prefer to say, the phenomena which are the deviations from the normal that constitute disease. Disease is no entity in itself, though we often use language which might lead to the belief that we so conceived of it.

When the normal adaptations to environment on which the very existence of an animal depends are disturbed, what more natural than that there should be a return to a functional condition prevalent in some ancestral group, or common to a host of such groups, as the case may be?

T. WESLEY MILLS.

BOOK-REVIEWS.

Animal Magnetism. By ALFRED BINET and CHARLES FÉRÉ. (Internat. Scient. Series.) New York, Appleton. 12°.

THE nation that brought forth Mesmer, with his glittering display of charlatanry, has well atoned for this injury by bringing the study of hypnotism into general scientific recognition, and developing with a remarkable activity our knowledge of this obscure region of the human mind. Nowhere are so many men of science practically engaged in the study of hypnotic phenomena in all their various manifestations, nowhere are subjects so plentiful or so interesting, nowhere do we find so vast or so sound and constantly increasing a literature devoted to this field, nowhere else a journal devoted exclusively to the study of hypnotism, as in France. Although much that has been developed there is doubtless destined to be revised or rejected, yet the work is eminently scientific, and with few exceptions the workers have never deserted the field of painstaking, methodic study for the temptation of enlarging upon remarkable facts, liable to attract the popular imagination. The admission of a work on this subject into the International Scientific Series is therefore eminently fitting, and it is also right that the work thus honored should come from Paris, and more particularly