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SATURDAY, DECEMBER 17, 1881.

In an official report of the proceedings of the New York Academy of Sciences, to be found in another column of this issue, Commander Cheyne explains in detail, his proposition for reaching the North Pole in conjunction with Lieut. Schwatka, by means of balloons.

It must be conceded that the project involves great difficulties and dangers, but perhaps not greater than those to be encountered by the ordinary methods, and as new elements of success are made probable, we desire to have the scheme thoroughly discussed on its merits.

The most practical course for Commander Cheyne to adopt, would be to immediately form a committee of Arctic experts, and those who have identified themselves with such projects, when the practicability of his scheme can be affirmed or condemned. Commander Cheyne informs us that he desires the formation of such a committee, and that his plans shall be thoroughly investigated. We, therefore, invite those who are interested in the success of this expedition, to at once signify their intention to co-operate.

Those who have suggestions to make, and can speak from experience, either on the subject of Arctic travel or aeronautic tactics, are invited to express their views.

Commander Cheyne frequently visits our office, and will no doubt attend to any appointment to meet those desiring a personal interview.

The evidence of Dr. Ed. C. Spitzka, at the Guiteau trial, is still incomplete at the date of our writing and we reserve to a later date a full expression of our opinion upon the direct bearing of his evidence on the degree of insanity of the prisoner.

The prosecution appear to have made a mistake in endeavoring to assail the professional character of the witness (which is unimpeachable), instead of closely analyzing the evidence he offered.

No more conscientious and intelligent witness than Dr. Spitzka can enter a witness-box, or one better qualified from experience and study to offer an opinion on the question of insanity; but we shall show that the little band of professed alienists, in dealing with their subject, may be compared to men who have just arrived in a new and partly surveyed territory; roads have been constructed, but where they lead to none can tell; land is reached on which it is dangerous to tread; the ground work of the plan has yet to be sketched, and the wealth beneath the surface has never been probed. The fact is, that the science of the modern alienist is still in embryo, and even its nomenclature undetermined, the facts so far discovered by continental alienists and anatomists, and by such men as Hammond, Wilder, Clevenger and Spitzka in our country, are important and interesting, but they are as yet but the pebbles with which the fabric of the science must be constructed.

Between perfect sanity and insanity there is an immense scale of gradation, and the fact that Dr. Spitzka classifies both Dr. Samuel Johnson and Guiteau under the one head of monomaniacs, shows how wide a range the subject covers, and how subtle are the distinctions to be made.

Of all the numerous topics which are the common field of the physician and the biologist, none is of as great interest, both in its practical bearings and intrinsically, as a fascinating theme, as that of the location of mental faculties in the brain. Year by year scientific inquiry is narrowing down the question of the existence of the mind into the functional realm of those great masses of nerve tissue, which, filling out the cavity of the skull, have already formed an empirical and unconscious recognition by the ancients when they endowed the Goddess Minerva with a higher brow than Venus, and Apollo with a greater facial angle than Bacchus.

For a long time observers contented themselves with mere measurement of the volume of the brain; a heavy brain was supposed to be capable of higher mental action than a light brain; the elephant and the whale were contrasted with the alligator and tortoise, and after bitter contests waged in scientific societies, the conclusion was arrived at that only animals approaching each other in size, as well as in zoological position, should be compared to obtain data. The original proposition is sustained by the fact that in weight proportionate to that of the body the elephant exceeds the hippopotamus—the dog, the fox—the chimpanzee, the baboon; the marmoset, the

squirrel—the rabbit, the kangaroo—and so on through the list. The intellectual standard finds its expression in a greater brain-weight among animals.

Any one who has glanced at the older anatomical atlanti will have been struck by the picturesque folds and festoons into which the brain-surface is thrown. He may compare the folds in the representations of different authors and will arrive at the conclusion that they can have no definite importance, because they differ so absolutely in every diagram examined.

The fact is that these folds or corrugations, familiarly known as the CONVOLUTIONS of the brain, were later recognized to be very methodically and regularly arranged, and to follow a distinct plan for each zoological species, including man. The old anatomical masters, ignorant of this fact, allowed their draughtsmen to fill in the details according to their fancies, and these naturally led the latter to pay more attention to the picturesque than the true. Now the contest as to the location of mind in the brain took another form, the opponents of the materialistic theory, that brain and soul are united, tacitly admitted the general proposition, and orthodox anatomists endeavored to discover as numerous and as decisive criteria by which to distinguish the brain of man from that of the ape as diligent research could unearth. But one barrier after another which they erected has been swept away by their opponents. Owen's claim that the apes had no lesser hippocamp, was demolished by Huxley, the Island of Reil has been demonstrated in animals far below the monkey tribe, the cerebral overlap is recognized to be decided in the anthropoids and in other monkeys as in many human subjects, and even an indication of an opercular formation has been found in defective human brains, while the last criterion, the alleged absence of the "*Zwickelwindung*" in man, has been demonstrated to be faulty by Parker, of Philadelphia.

The great similarity of the chief surface features of the monkey's brain with those of the human, led Ferrier and Munk after preliminary experiment by Hitzig and themselves to attempt the isolation of willed muscular movements, and of special sensory perception in the cerebral convolutions of the monkey. The researches of Meynert had shown that anatomically the brain "bark" or "rind" [*cortex cerebri*] occupied the position of a mirror as it were, on whose inner face abut the photophone wires represented by nerve bundles, transmitting the messages from the outer world. Meynert found that the nerve fibres from the eye, the skin in general, the ear, the nose, and tongue, went to special convolutions, and that to other convolutions went fibres which controlled muscular movements. Now the experiments of Munk and Ferrier confirm the anatomical premise of Meynert, in its general bearings. They found by cutting away a given part of the brain, blindness would result, the removal of another part would be followed by deafness, of still another by paralysis. They and others also established that if those parts whose removal was known to be followed by paralysis, were instead of being injured, stimulated (by electricity) special motions could be produced at will. In other words, these investigators found the keys of the mind before them in the convolutions of the brain, and by touching a special key, were enabled to forge the will signature of the animal, as it were. Special parts of the human brain, when the seat of disease or of injuries, are shown to have similar functions. A man has an apoplectic stroke, or an abscess, or a softening, or a tumor of the brain. If that disturbance is in one part he may be blind in a portion of his visual field, or he may lose the memory of words, or their articulation, or the ability to write, or he may be paralyzed in one arm, or one leg, or only on one side of his face. If the disturbance is extensive, several of these symptoms co-exist. It is noteworthy that these disease experiments, if we may so term them, confirm the physiological experiments made on monkeys in a remarkable manner, and it seems that the great problem of the relation between brain and mind is nearing a solution through different channels of research, approaching the same goal.

NEW YORK ACADEMY OF SCIENCES.

November 28, 1881.

LECTURE EVENING.

The President, Dr. J. S. NEWBERRY, in the Chair.

The hall was filled to overflowing.

In introducing the lecturer of the evening, the President stated:

"Captain Cheyne asks you to examine his plans carefully. He has been with three expeditions to the Arctic regions, and has spent there five and a half years. He has been there under so many circumstances that he knows, perhaps better than any other man, the difficulties to be encountered and how to overcome them. He comes recommended by the highest authorities in England. His plan is not chimerical, and it is certainly heroic. Men will yet surely go to the Pole, if they have to crawl there on their hands and knees; and an enterprise of this kind is worthy of attention in these days, if only to withdraw the minds of men from their shops and money-getting and purely selfish occupations."

COMMANDER JOHN P. CHEYNE, R. N., F. R. G. S., then delivered the following lecture:

THE DISCOVERY OF THE NORTH POLE PRACTICABLE.

(Abstract.)

Reference was first made to the large number of local committees—sixty-two—and of influential persons in England who have signified their approval of this enterprise.

A Council has been formed in England and is now awaiting the news from America. As soon as it is has heard of action taken here toward the formation of an Anglo-American expedition, the members of the Council