Thought.

We do not fully understand or at least are not agreed as to the nature or character of normal mentality. Two or three generations ago it was believed to consist in the activity of a soul or spirit, which was enthroned somewhere in the brain. No explanation of the *modus operandi* of such activity eventuating in thought, as independent of the body, was apparently ever deemed necessary, or considered as a legitimate scientific inquiry.

In more recent times, and especially since the microscope has revealed to us the wonderfully complex and highly organized texture of the brain; and modern physiological research has made known more perfectly the functions of many parts and organs of it, the old theory has been rejected, and a leap has been made to the other extreme. A theory has been accepted by some to the effect that the whole thought process consists simply in the molecular activity of this highly organized cell-structure of brain. The hypothesis that a soul or any special entity exists within the brain or elsewhere in the body is a snare and a delusion and without proof. As a working theory for elucidating the phenomena of mind it is worse than useless. Perceptions, memory, reason, judgment, all consist of mere movements or vibrations of different kinds or degrees of multitudinous nerve fibrils and cells, which are composed of matter in its most highly organized form. Attention and will are only different forms of this same activity of nerve tissue as it becomes affected through external or internal impressions, while under the influence of the blood. In the words of one of its most vigorous advocates, "that which thinks, reasons, wills; that which is consciousness in phenomenon—is the brain; not any suppositious entity, of the existence of which we have no evidence whatever, and of the need of which as an hypothesis he is not conscious."

On the other hand, however, there are some who still feel conscious of the need of an additional element in any hypothesis which is assumed as a working basis for elucidating the physiology of the thought process. They are unable to accept mere assertion for argument, and much less for demonstration. They freely admit the dependence of mind upon the brain and nervous system in its exhibitions, and that no such processes as memory, reason, attention, and will, can be perfected and projected to other minds except by the agency of the brain; also that these several activities of the mind are defective and imperfect, weak or strong, largely in proportion as the brain is in a normal or abnormal condition. They also admit that the hypothesis of molecular activity only has the merit of simplicity, and if true ought soon to place us on vantage ground in elucidating the physiology of mind. But, on the other hand, they cannot remain indifferent to the fact that any hypothesis, to be accepted as reasonable, must harmonize with and cover the phenomena to be explained. Now, does molecular activity, or the vibration of cells and fibrils upon each other, present any resemblance to thought? Such vibration presupposes and consists simply in movement. This movement may occur with the inconceivable rapidity of light, but, after all, it is only movement, and if there results from or in connection with that movement of the anatomical elements of brain, something of a nature unlike motion, then it becomes necessary to add another element, which resides in the material affected by movement, to explain the phenomena presented. This element must be akin, in its nature, to that which results, namely, thought. The nature of movement is simple and homogeneous in whatever realm of matter it may appear, and, so far as we know, it becomes only motion; but thought, as it appears in reason, will, imagination and judgment, has no resemblance to mere motion. It may be attended by or be dependent upon it, but in its essence and qualities it is so unlike it that the two cannot be compared. Mere movement of cell, whether simple or complex in its constitution, therefore, becomes as unscientific as an explanation of thought as mere movement of spirit.

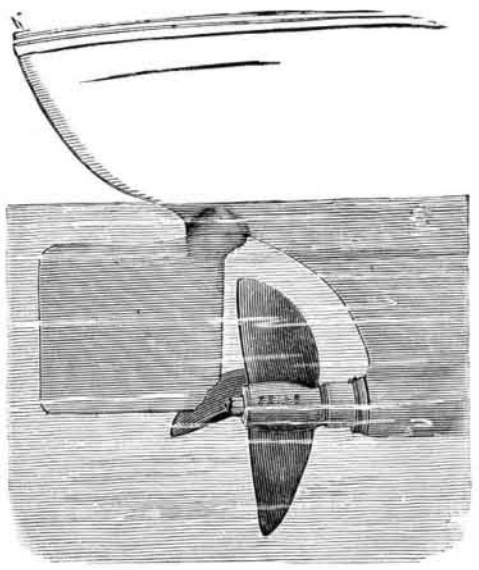
Such considerations are thought to require that, in the solution of the thought problem, another element must be added. This resides in the brain and nervous system, and in the processes of thought, reflection, memory, and judgment, there exists a correspondence or parallelism of action between the cell and this additional element. The one may act upon, or be acted upon by, the other through impressions from without, and in this action and interaction, the quality and character of thought becomes modified, approved or disapproved, and in some measure changed.

Such, then, in briefest words are the hypotheses which have been advanced as explanatory of normal mentality. How far either of them may or may not be likely to meet with future demonstration, it is not my purpose to argue, even if it were a legitimate subject for such an occasion, but simply to call attention to the fact that neither of these hypotheses has yet been accepted by all; and also that physiology has not yet vouchsafed to us any scientific demonstration on this matter.—*Henry P. Stearns, M.D., address before the Association of Medical Superintendents, etc.*

THE PROPOSED RACE BETWEEN FAST STEAM YACHTS.

The trial of speed shortly to come off between the two fast steam yachts Vamoose and Norwood, over an 80 knot course in Long Island Sound, has attracted a large degree of public attention, particularly among all who are in any way interested in yachting. The course is of sufficient length to thoroughly test the qualities of the racers, and is laid due west from Fisher's Island to a point opposite the Larchmont Club house, near the western end of the Sound. Our first page illustrations give a good idea of the general appearance of the two boats, accompanied with drawings of their machinery, in which connection is also presented a view of the Cushing, our fast torpedo boat, which yachtsmen generally had hoped would be a participant in the race, but which the government officials could not, under the navy regulations, consent to.

The Vamoose was built by the Herreshoffs, of Bristol, R. I., for Mr. W. R. Hearst, of San Francisco, and her cost is said to have been $65,000. She is 112 feet 6 inches long over all, and about 108 feet long on the water line, her extreme beam being 12 feet 4 inches and her greatest draught 4 feet 11 inches. Her hull consists of a steel frame, uncovered in the interior of the boat, and with an outer covering of two layers of pine, the inside one of which is seven-eighths inch thick white pine and the other five-eighths inch thick yellow pine, there being nothing in her in the way of finish or decoration. Her engine is quadruple expansion, and there are five cylinders, of the following diameters: one of 11¼ inches, one of 16 inches, and three of 22½ inches each, the stroke, common, being 15 inches. The propeller shaft is 5¼ inches in diameter. The condenser is of copper, and is 5 feet 3 inches long and 31 inches in diameter, containing 498 feet of tubing, the circulating pump being worked by an independent little engine. The engine and its equipment weighs 13½ tons, and is designed to develop 800 horse power. The boiler is of the Thornycroft pattern, and is 8 feet 4 inches long and 8 feet 6 inches in diameter. It has three main drums and 8,500 feet of cold drawn steel tubing. Forced draught is afforded by a fan working up to 1,000 turns a minute. The smokestack is 8 feet high above the deck, and is 36 × 21 inches in diameter. The boat is lighted by electricity generated by a Riker motor. She has a three-bladed Seise propeller, shown in one of our views. It is 54 inches in diameter, and drops 21 inches below the lowest part of the keel. It is designed to be revolved 400 times a minute to propel the boat at full speed.



PROPELLER OF THE VAMOOSE.

The Norwood was built by C. D. Mosher, of Amesbury, Mass., for Norman L. Munro, of New York. She is only 63 feet 2 inches long over all, and about 60 feet long on the water line. She is 7 feet 2 inches beam amidships, and her greatest draught is 22 inches, her draught forward being only about 9 inches. A cross section of each boat at the midship section shows a nearly semicircular bottom. The hull is built of two thicknesses of mahogany on a strong oak frame, and has a steel keelson. The stern is cut away to make room for the propeller, which has three blades, and is 36 inches in diameter. It has a pitch of 7 feet 6 inches, and is designed to be driven at the rate of 500 turns a minute. The engine is of the triple expansion type, the cylinders being 9 inches, 14½ inches, and 22 inches in diameter respectively, and the stroke 9 inches. At 500 revolutions a minute the engine is designed to develop 450 horse power. The boiler is somewhat of the Thornycroft type, but with important modifications. It is 7 feet 4 inches long and 5 feet high, the working pressure being counted at 200 pounds and over. The condenser is 6 feet long and 18 inches in diameter. The smokestack rises 3 feet 9 inches above the top of the boiler, and it is 18 inches in diameter. In cruising trim the boat is covered with an awning which may be inclosed with glass, but in racing order she is stripped to the hull.

Table Customs of Our Ancestors.

A thousand years ago, when the dinner was ready to be served, the first thing brought into the great hall was the table. Movable trestles were brought, on which were placed boards, and all were carried away again at the close of the meal. Upon this was laid the tablecloth, which in some of the old pictures is represented as having a handsome embroidered border. There is an old Latin riddle of the eighth century in which the table says: "I feed people with many kinds of food. First I am a quadruped, and adorned with handsome clothing; then I am robbed of my apparel and lose my legs also." The food of the Anglo-Saxon was largely bread. This is hinted in the fact that a domestic was called a "loaf-eater," and the lady of the house was called a "loaf-giver." The bread was baked in round, flat cakes, which the superstition of the cook marked with a cross, to preserve them from the perils of the fire. Milk, butter and cheese were also eaten. The principal meat was bacon, as the acorns of the oak forests, which then covered a large part of England, supported numerous droves of swine. Our Anglo-Saxon forefathers were not only hearty eaters, but unfortunately deep drinkers. The drinking horns were at first literally horns and so must be immediately emptied when filled; later when the primitive horn had been replaced by a glass cup, it retained a tradition of its rude predecessor in its shape, for it had a flaring top while tapering toward the base, so that it, too, had to be emptied at a draught. Each guest was furnished with a spoon, while his knife he always carried in his belt; as for forks, who dreamed of them, when nature had given man ten fingers? But you will see why a servant with a basin of water and a towel always presented himself to each guest before dinner was served and after it was ended. Roasted meat was served on the spit or rod on which it was cooked, and the guest cut or tore off a piece to suit himself. Boiled meat was laid on the cakes of bread, or later on thick slices of bread called "trenchers," from a Norman word meaning "to cut," as these were to carve the meat on, thus preserving the tablecloth from the knife. At first the trencher was eaten or thrown upon the stone floor for the dogs which crouched at their master's feet. At a later date it was put in a basket and given to the poor who gathered at the manor gate. During the latter part of the middle ages, the most conspicuous object on the table was the salt cellar. This was generally of silver in the form of a ship. It was placed in the center of the long table, at which the household gathered, my lord and lady, their family and guests, being at one end and their retainers and servants at the other. So one's position in regard to the salt was a test of rank—the gentlefolks sitting "above the salt" and the yeomanry below it. In the houses of the great nobles dinner was served with much ceremony. At the hour a stately procession entered the hall. First came several musicians, followed by the steward bearing his rod of office, and then came a long line of servants carrying different dishes. Some idea of the variety and profusion may be gained from the provision made by King Henry III. for his household at Christmas, 1254. This included thirty-one oxen, one hundred pigs, three hundred and fifty-six fowls, twenty-nine hares, fifty-nine rabbits, nine pheasants, fifty-six partridges, sixty-eight woodcocks, thirty-nine plovers, and three thousand eggs. Many of our favorite dishes have descended to us from the middle ages. Macaroons have served as dessert since the days of Chaucer. Our favorite winter breakfast, griddle cakes, has come down to us from the far-away Britons of Wales, while the boys have lunched on gingerbread and girls on pickles and jellies since the time of Edward II., more than five hundred years ago.

A Remarkable Ferryboat.

One of the most extraordinary boats on the American lakes is a passenger car transfer ferryboat operated in the Straits of Mackinac by the Duluth, South Shore, and Atlantic Railroad. It has an enormous capacity for carrying cars, but its peculiarities are its strength, its shape, and the number of its steam engines. It carries twenty-four steam engines for the performance of the various requirements of its daily business. The hull of the boat is as solid as the walls of an old-time block house. The bow rises from the water so as to hang or slant over it as if it were a hammer—and that is what it was built to be. The boat is an ice breaker, intended to keep a channel open in the straits during the winter, or to make one whenever it is pushed into the massive ice that forms in that cold region. The big boat advances toward the ice and, shoving her nose upon its edge, lifts herself upon it. Then a screw propeller under the overhanging bow performs its work of sucking the water from under the ice to enable the boat's weight to crush it down the more easily. Thus the destructive monster makes her way steadily through the worst ice of the semi-polar winters of that region, climbing up on the ice, crushing it down, scattering it on each side, and making no more of it than if it were so much slush.—*Iron Age.*