## THE MAGIC OF THE BRAIN

An Infinite Garden of Plants Performing Mysterious Marvels.

THE ELECTRIC SYSTEM OF THE BODY

Mechanism of Thought and Memory-In structive Facts Revealed by Late Researches on the Microscopic Cells-A Fascinating Subject.

(Copyrighted, 1894, by McClure.) Dr. Ramon Y. Cajal, the eminent Span-ish histologist, has, by his late researches on the microscopic cells of the brain, carried the scientific world a perceptible step forward in the solution of that profoundly interesting problem, the mechanism of thought. The practice of thinking is indulged in by all human beings to a greater or less extent, and an increasing percentage of the community are much interested in thinking how they think.

It can scarcely be said, however, that Dr. Cafal's late lecture as delivered to the Royal society would be of interest to the majority, as it was the lecture of a great expert to an audience of experts, was phrased in the strange and perplexing polysyllables of a special science, and was, moreover, delivered in French.

Consequently its points, in the meagre outlines furnished through the press. conveyed little that was new and less that was understandable to the lay mind. It has now been translated in full, and when perused and pondered it is perhaps the most interesting tribution of its kind that has ever been seen. HOW DO WE THINK?

The study of thought action is one which can only be pursued by an investigator who has mastered the latest principles and steps in many other studies, and such an equipment is emission. eminently the possession of Dr. Catal. All that has been learned of cell life, of propplasmic action, of electricity in its multitudinous aspects, of nerve constitution and scope and the inventions bearing upon its improvement, of vital chemistry, of the living brain as explored by vivisection, and other of advancing knowledge must be facts well in hand, in addition to the latest developments and concepts of anatomy and physiology, before the highest and subtlest form of vital activity is explored.
In all the directions named the special

sciences have been aggregating facts bearing on the great problem for the last twenty years, though all the kinds of electrical bat-teries now known yet fail to indicate what kind of an electrical battery the brain is, while no photographic plate yet invented has remotely suggested the character of memory, that figurative photography within one's head which records and stores all the scenes of a lifetime in small masses of living matter, so that they may be recalled at a mo-ment's notice, and in groupings which pay no attention to the lapse of the years lying

have been indisputably established.

Vivisection has given us a knowledge of the motor area lying along the fissure of Relando which has been of incalculable benefit to brain which has been of incalculable benefit to brain surgeons and their patients, and the thought cells themselves, through the series of inventions for hardening and straining the brain, have, under the microscope, been studied deeply and successfully by investigators, whose results Dr. Cajal has only carried a step further onward. That step is important, however.

AN ELUSIVE MYSTERY. The intelligence of living matter is the clusive mystery before which science ever drops its hands. The fact is that a man's brain knows far more than the man does. It does automatically and intelligently a thousand things far beyond his own power and knowledge. His heart beats, his nerves. conduct, his brain acts and his whole bedily economy is carried on without his volition ind assistance. He eats and breathes because he cannot help eating and breathing

Ho has a certain power to injure the marthe pursuit of pleasure he usually injures it as greatly as the social laws and his own ignorance permit. The tenant for a life of a structure whose instincts will always be more knowing than his intelligence, his atudy can only group after a knowledge brain acts without hope of ever thowing why.

But scientist or layman, this question of the how is ever one of profound interest, and from the discovery of air and respira-tion to the discovery of the circulation of ood, and from that point to Sir Joseph Lister's antiseptic surgery, these surface dig-Elect's antiseptic surgery, these surface dig-gings in the search for the deep-lying truth have been of measureless value to all men, and of incalculable influence upon the de-velopment of society.

VITAL ELECTRICAL MACHINERY. To form an idea of the chief point develsped by Dr. Cajal's researches, let the reader turn his eyes suddenly from this page and throw them upon some object. Suppose that his glance falls upon a closed book, say of dark green binding, lettered in gold of dark green binding, lettered in gold. In an instant he has combined many thoughts — book," "dark green," a specialization of his general idea of color, "letters" a subdi-vision of the alphabet and words, and "gold," a specialization of his general idea of met With the quickness of an electric flash four ideas bave combined in his consciousness. According to the theory of Dr. Cajai these ideas did not come together, but in regular order, though the difference in time between their respective arrivals in conween their respective arrivals sciousness were so minute as to be imper-ceptible. Now, the exact point of their respective combination the scientist does not venture to suggest, any more than he assumes to theorize how we became conscious

of the combination He deals only with the machinery of thi process, viewed and discussed from the standpoint of vital and electrical machinery as far as we understand vital and electrical machinery. Carrying the familiar process er, in a moment more the reader's has branched off from the book to a long train of ideas past, present or future all coming into his consciousness withou cessation, without confusion and without any perceptible time in their pasage. JUST LIKE MAGIC.

He reads the title, thinks whether he has read the book or not; recalls or does not re-call its contents, its characters or any of them; recalls his impressions of the author, thinks of another book which looked like it, or had a title like it, which he read as a or had a title like it, which he read bac child in a garret twenty years ago, goes bac to the garret, goes out of the garret into childhood again and is, in a moment, re-viewing a phase of his life that he has not thought of for twenty years, but which instantly comes back to him, clearly cut, fully colored, perfect in all details, exactly preserved with its infinitude of minute eleients in the mysterious storehouse facts located in the living matter be-

No two readers starting with a giance at the book will have the same train of thought. Every reader, however, will have some train of this kind which may flash to the past, aweep the present or dart into the future— by combination of stored facts in speculative groupings—as the case may be. This woh-No two readers starting with a glance a by combination of stored facts in speculative groupings—as the case may be. This wonderful combining process is the first and most impressive quality of brain action, and the chief interest in Dr. Cajal's lecture lies in the description of the special machinery lies upon which this action depends.

He finds in the coat of gray matter, which is house, three distinct layers of cells. The house, three distinct layers of cells. The

whole thickness of the gray matter, which is layer of the three is so much thicker than the other two that other observers have divided it into three and even four layers.

As its pscullar cells are all of the same character, however, though of different sizes, Dr.

In the cerestime, instead of being from your last missing an answer the question I do know that the steady increase in value is enough to compensative idleness. And then the heirs of James Spingler do not if seeing an object again depends upon a recression, however, though of different sizes, Dr.

It is be as true as it appears to be, and if seeing an object again depends upon a recression, however, though of different sizes, Dr.

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It is be as true as it appears to be, and if seeing an object again depends upon a recression value is enough to compensate for its comparative idleness. And then the heirs of James Spingler do not if seeing an object again depends upon a recression value is enough to compensate for its comparative idleness. And then the heirs of James Spingler do not need to worry about money for household stress and that 10,000,000 sermons ation of its image by the retina, there is no doubt that hearing a sound again depends upon a recression value is enough to compensate for its comparative idleness. And then the heirs of James Spingler do not need to worry about money for household sevent value is enough to compensate for its comparative idleness. And then the heirs of James Spingler do not not trees. How did it get all those grease spots on it?"

States, and that 10,000 places of worship.

West of the Spingler do not not trees. How did it get all those grease spots on it?"

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West of the Spingler do not not trees. How did it get all those grease spots of the seal of th

Cajal makes only one layer of these pyramidal cells, which are beyond any doubt the actual aphere of the operations which constitute the highest form of thought.

LIKE ELONGATED PYRAMIDS. They vary in size, as stated, from one-eight-hundredth to one-five thousandth of an They are shaped like elongated pyra-Each one sends upward to the molecular layer on the outside a protoplasmic projection, a plume of living matter, which as it goes upward throws out any number of minute microscopic branches, these branches in turn sending out other branches more microscopic, till the ramifying process ends even more microscopic spines.

The main shoot upon reaching the surface branches out into a minute treelike mass of fibres, as delicate in comparison with microscopic stem as the foliage of a tree compared with the trunk. Each one of the millions of pyramidal cells composing this layer sends upward one of these plumes, and these plumes and their branches are an important part of the materials compos-ing the outer layer. Each pyramidal cell also sends a shoot or root downward, passing through the layer below, and entering the white matter underneath, which forms the

great bulk of the brain. Each pyramidal cell also sends out pericular layer.

EXTENSIONS OF LIVING MATTER. The layer below the pyramidal cells is one sizes, the bulk of them being triangular in They also send out extensions of liv-matter in all directions, connecting emselves with each other throughout all their extent, and, in infinite complexity, plac-ing them presumably in touch, through the protoplasmic extensions, with the whole layer of pyramidal cells. Like the latter, the third layer of cells have each an extension which passes through the pyramidal layer to the outer surface, and each also sends a shoot downward into the white

At numberless microscopic points there also rise, through these two layers, microscopic offshoots, bundles of nerve fibres from the white matter passing upward to the surface. The molecular, or outside layer, is thus primarily composed of an infinity of nervous and protoplasmic extensions from the two layers below, and the white matter intertwisted and interwoven in indescribable com-plexity with a microscopic minuteness of de-tail, compared to which any texture woven by hands would be gross and giantesque. Every minute pervous constituent of it is an electrical conductor of the highest sensibility. In addition to the terminals men-tioned there are also interwoven terminals from the other half of the cerebrum, the com pleteness and complexity of the connection between the two sides of the brain being as perfect as the way in which all the cell parts of either half are placed in connection with each other.

From all parts of the brain come micro scopic conductors to this surface layer. From all parts of the body, through their centers in the brain, impulses flashing over the surface of the outer layer reach the sensitive plumes of the pyramidal cells.

LIKE A TELEGRAPHIC HEADQUARTERS. Everything that may occur throughout the ody is telegraphed at the same time to the It has long been known that the brain was composed of millions of minute cells, varying from one eighth-hundredth to one five-thousandth of an inch in size. The control of by the various departments. But, as in all the bodily activities by the cerebellum and the exercise of the intellectual powers in the gray matter forming the coat of the cerebrum But, as in all pyramidal seat of consciousness, and thus forms part of that comparatively mechanical

cell process which we call thought. The whole constructive scheme seems to be the aim of placing every microscopic cell of the pyramidal layer in immediate contact with every other cell and every other organ of brain or body. And to this end it has constructed itself with an ingenuity which the word infinite can alone express.

The thought cells are not only thus con-sected with each other, but also, through the Consciousness is still a profound mystery.

Memory is still the most inexplicable of facts. The physical organization of an idea remains about as unexplained as when Maudsiev asked the question ten years ago. Ribot's study of the diseases of the memory and the diseases of the will have thrown light on general laws of action, but have said nothing as to physical constitution. necessities of nourishment, with the minute evidences of the subdivision are so minute as to escape the microscope as yet. Dr. Cajal does not agree with Colgi in making a sharp distinction based upon form between purely sensory and purely motor cells, having found cells of sensation in motor tracts and vice versa.

POLARIZED CELLS, TOO That all brain cells are electrical generators o an extent is undoubted, though some of hem have special transmitting or specially electric functions. He finds that ending of a message, is known to come, that the cells are polarized, the nervous impulse entering by way of the protoplasmic extension, and being sent out latterly by an axis cylinder which transmits sent out

field of the thought centers, the millions of cells are, roughly speaking, minute batteries receiving impulses and combining them and sending off new impulses to either traverse the field of thought in new combinations, forming new ideas, or to sweep over the field of muscular activity to express in action the volitional result of the thought process. His idea of the cerebral gray matter is. fact, best conveyed by the metaphor which he uses. He compares it to a garden filled with wonderful and diverse growths, in which the plants, the foliage overhead and extent of the garden, so that any special excitation of any one part instantly becomes a general excitation throughout its entire extent, a fact of which all the parts

are equally conscious. THE OPTIC NERVE AND MEMORY. In an address, the new facts of which are fruitful of new auggestions, and, perhaps, new theories, the most interesting vista of possibilities opened up is the bearing of Dr. Cajal's microscopic study of the optic nerve upon the mysterious process called memory. What memory is and how it is carried on nobody has yet remotely suggested. All the late advances in the knowledge of the phe-nomena of sound and of light will ultimately assist the solution of the problem, but they have thrown no clear light upon it as yet. Dr. Cajal has discovered in the optic nerve a certain apparatus whose only use and ob-ject can be to enable the brain or thought centers to excite the retina of the eye from within. Ordinary sight depends upon the excitation of the retina from without by light coming from objects. It appears now, how-over, that the retina can also be excited from

This, indeed, hears out a fact of common This, indeed, hears out a fact of common knowledge, as we often see with our eyes shut, see in our dreams, and in trying to remember the appearance of an object in the past close our eyes and strain them in the effort to recall it to our vision.

The machinery by which this is carried on is a system of centrifugal nervee lying within the optic nerve and running not from the eye to the brain, but from the brain to the eye. They play no part in the phenomen

the eye. They play no part in the phenomenon of sight, as it takes place from without; form no part of the electrical apparatus of external vision, as it is fairly well under-

Their construction shows clearly that they carry electrical impulses from the optic cen-tres to the retina, and they end in spongy terminations at the back of the retina. While, according to Dr. Cajal, their significance is obscure, they leave no doubt that the special organ of sight can be excited in two ways, from within as well as from without

MEMORY IN THE RETINA. MEMORY IN THE RETINA.

The special importance of this is the light which it findy throw upon the actual seat of memory. Memory has been supposed to be located, in all its complexity, in the two cerebral lobes of the brain. It appears to be possible, and probable, however, that the power of remembering the appearance of any past object lies principally in the retina and one in the brain; that in response to an impoles from the pyramidal cells of the cerebrum the retina as rapidly creates or reproduces and transmits one of today.

If this be as true as it appears to be, and

upon a recreation of the vibration in the ear in the aural apparatus, therefore, similar centrifugal nerves conducting from within to without will be looked for, and this study

has already begun. Analogy indicates that the organs of taste, and touch will be found similarly equipped, and that retasting, resmelling and retouching, as we often do in memory and in dreams, consists of an actual duplication of the original process, that any experience we may go through and the act of remem-bering that experience are similar mechanical processes employing precisely the same machinery. In other words, that the actual seat of memory is not in the brain by itself,

but the whole nervous system of the body.

Any reader who happens to be interested In memory can develop for himself the out-lines of this fact by simple analysis. As "thought" is the combination in the brain of any number of special "thoughts," so "memis the recreation of any number

Suppose that the memory under considers tion is that of a dancing party which the reader attended some years ago. The memory will be found to be entirely made up of special memories, visual, aural, motor, inding his muscular actions on the occasion great bulk of the brain.

Each pyramidal cell also sends out peripheral growths horizontally, setting up an infinity of connections between the cells of that layer, and many of these peripheral growths also branch upward and form parts in their feathery endings of the outer or molecular layer, endings of the outer or molecular layer.

ALL OVER THE BODY. Whether we employ the organs of articula-tion mutely, from within, or sufficiently to create sound, thereby uttering the words aloud, our memory of our past actions de-pends upon our ability to describe them in words, a fact clearly established by the power of memory in savage tribes, which varies directly with the copicusness of their vocabularies.

The general illustration of this peculiar fact, that memory is located, generally speaking, all over the body, and the way in which "memory" is made up of "memories" is thus open to any one, and the researches of Dr. Cajal and his colleagues upon these re-arousing memory nerves are looked forward o with great interest. Other corollaries from Dr. Cajal's facts are tumerous and profoundly interesting.

cannot increase the number of cells in our brains. They are determined by inheritance. Study or the exercise of the mind can, however, increase the cell ramifications and develop the general "connectedness" of the The physical measure or test of culture ar

pears to be complexity and richness in brain cell connections. Another surmised measure of it is cell forms, they appearing to vary somewhat with higher intellectual development. The number of thoughts, ideas, con clusions, conjectures or suggestions which are excited in the thought centers by a given object—in other words, fertility of with no other effort than that required to given object—in other words, fertility of with no other effort than that required to given object—in other words, fertility of with no other effort than that required to ideas—appears to depend upon the extent to refuse to sell iand around which the great which the cell or cells presumably devoted these fortunes were frequently small farmers to the cell or cells presumably devoted these fortunes were frequently small farmers.

INTRUSION OF TELEPATHY If ideas consist of reduplicated sensations, by themselves, their grouping appears clearly to be a matter microscopic protoplasmic and nerve fibers, infinite in number and complexity.

The ego, the controlling power which com-bines and wills the consensus of all these sensations, words and memorles, is, however, greater mystery than ever. We may learn by existing methods all that the brain does and how it does it, and be as far as eve from knowing what it is.

The world's greatest authority on the cau-

sation of vital action came over from Germany a few years ago to tell the itoyal socisty in a famous lecture that he knew noth ing absolutely about it. Telepathy has fat-terly intruded its presence upon thought study, and now declares in a way that compels a hearing that ideas have an essence apart from matter as we know it, and can be flashed by brain batteries and received by other brain batteries over indefinite distances. None the less, however, will the researches into brain action now in progress have a very practical and beneficial effect upon the brain powers of future generations, and sooner or later give us a fairly good mechanical, if not fundamental, definition of the long studied mystery of thought.

## THE CURE OF CONSUMPTION.

The Times, London, England, of September 2. 1894. Sava: Since Dr. Koch's abortive experiments in inoculation for the cure of consumption, science seems to have made no further attempt, or, at any rate, no successful attempt to discover a permanent remedy for this most dreaded and fatal of diseases. Pure Norwegian cod liver oil, no doubt, is as yet the best known palliative, but it cannot be recognised strictly as a remedy, though its in-troduction to the world was justly looked upon as a most marvellous advance in therapeutics, and its use has doubtless served to prolong the lives of countless thousands. The chief objection to the employment of centers whence an excitatory impulse, a and smell. That objection, however, was after a lapse of time in a degree overcome and the various emulsions and other specially prepared forms, in combination with hypoposhites, malt extract, etc., offered the welcome advantage of being nearly tasteless it to new protoplasmic apparatus and other as regards the oil and more palatable—as far as medicinal preparations can be made And in this way, throughout the whole palatable. It has been given to Dr. T. A. Slocum, an American practitioner, to effect a combination of medicinal products whereby one of the greatest remedial agents in cases of consumption is for the first time success-fully allied with cod liver oil. As to the ourative properties of Gusiacol no learned physicians are at variance; but it was found next to impossible to administer it with suc able to retain on the stomach more than an infinitesimal quantity, so that this most potent curative was virtually useless. To find the means of combining this product with cod liver oil was the object of Dr. Slocum's experiments the roots below are so interwoven and inter-twisted as to form a solid living mass. The whole mass is made up of minute electrical conductors, and through the electrical garden almost beyond his expectations. Not only is the Gualacol indissolubly allied with pure is the Gualacol indissolubly allied with pure Norwegian cod liver oil, but by

electrical process the compound is Ozonized thus adding another vitalizing element, the whole forming an admirable and easily assimilated medicine possessing in the highes degree the properties considered on patho ogical authority to be essential to the cure of consumption and other pulmonary diseases It may be both interesting and useful to examine more fully into the properties of the component parts of Dr. Slocum's remedy— tria juncta in uno. Those of cod liver oil are of course too well known to need de scription here. Gualacol is a product of pine and beech wood, and a power-ful antiseptic. It is for the sake of breathpine trees that so many consumptives flock yearly to the health-giving, pine-wooded re-sorts of Switzerland, Germany, etc., where the native population is proverbially free from pulmonary diseases. This, then, is the healing principle so successfully introduced into the new preparation. With consump-tives the stomach and intestines contain myriads of parasitic bacilli, which it is dis-covered, Guaiacol effectually destroys, at the same time preventing any further tion of the germs. So much for the first two ingredients—Cod liver oil, the emollient and nourishing element, and Guaiacol, the antiseptic and germ destroyer. Now, as to the Ozone which Dr. Slocum introduces by means Ozone which Dr. Slocum introduces by means of electricity. Ozone is oxygen in a contracted state, its specific gravity being half as much again as that of oxygen. By its peculiar odour and its exhibitrating action its presence in the atmosphere is easily detected after an electrical discharge; its vivifying effects are experienced at the seaside, or in the clear pure mountain air. In Dr. Slocum's remedy the very processory function the clear pure mountain air. In Dr. Slo-cum's remedy the very necessary function performed by the Ozone is that of more readily replacing the oxygen of the body taken up by the fatty matter of the products during their absorption into the system. As-suredly the whole process seems on the face of it as plausible, as consistent and as perfect as may be. It only remains to be seen from prairies avangiance whether the results pratical experience whether the results justify Dr. Slocum's sanguine—but perhaps

knowledge, time and research of the entire medical profession.

that has wrought such havoe amongst man-kind, and which has hitherto baffled the

not too sanguine-anticipations as not too sanguine anticipations as to the healing power of his remedy for a disease

Significance of the Marks. Indianapolis Journal: "See here," said the suspicious woman, "I believe this recommendation is one you have had for a long time, instead of being from your last mistress. How did it get all those grease spots

Old Farms the Are Now Near the Heart of ie City. CO. D BLOODED POLICY OF THE ASTORS

Money Quicky Exalts Blood-The Begin ning, Management and Policy of the Astor Pstate-Great Landlords of the Metropolis. SHEDE

(Copyrighted, 1894.) NEW YORK, Oct. 27,-An observant Bos mian remarked before the era of great forones in this country that in America it was only three generations from shirt sleeves to shirt sleeves, and the saying had at one time a great vogue, being used to clinch arguments upon which it had a bearing and also to add a spice of neat and epigrammatic cynicism to conversation upon the transitory nature of worldly riches. In these latter days, when there are fortunes in this country that rival in size and in apparent permanency those vast estates of Great Britain

that have been fostered under the protection of successive endurements upon first born sons, the remark is quite as applicable as ever before, the estates alluded to serving as admirable exceptions to prove the rule. But the rule is that where the fathers accumulate the children waste, though to be sure the much more general rule is that even the fathers do not gather wealth enough to bother about or to tempt into prodigal

men in an equality. MONEY QUICKLY EXALTS BLOOD. Even in the colonial days there were men who were recknned rich by their neighbors, and according to the standard then pravail ing they were rich. Nowadays such wealth would command but little respect. Some of these men, however, laid the foundations for fortunes that have lasted till now and these and petty shop keepers; their grand children and great grand children are more frequently than not proud with an arrogance of race beyond that of the most exclusive

nobility in any of the old world kingdoms This "noble" class in New York is not only proud of its waith, but it is proud of its descent, though it is scarcely to be expected that many of them in historical retrospect go back so far as to find an ancestor meas aring tape and bowing to customers from behind a counter. But unless such was the occupation of these old worthies it was apt to have been in a furrow behind a plow Such commonplace ancestry is entirely conorable, and it would not be worth noting in this place were it not for the fact that many of those owning inherited fortunes from such sources have ignored the humble beginnings with such persistence that they have absolutely passed out of memory. A triffe over a year ago a bundle of receipted accounts, made by a resident of New York just prior to the beginning of this century

But at that time the Stuyvesants were very considerable land owners on Manhattan i land, their farm stretching from the Bowery east to to the East river and north and south from Houston to Twenty-third The Stuyyesants have husbander

this estate very carefully, and much of this original tract still belongs to members of the family, while part of it is managed as a whole like the business of a bank or any commercial concern. And within this Stuyvesant area are some of the most crowded snement house sections in the great city; These swarming tenement houses must coribute no little to swell both the Stuyvesan pride and purse, and a member of the famly contemplating them in midsummer can-not be blamed for believing that he belongs to a superior race. As for recognizing the Stuyvesant who kept a shop OTHER FARMS NEAR THE HEART OF

- THE CITY glance at the lower half of Manhattan will show that the Stuyvesants had in the Le Lancys near neighbors, also with a considerable tract of land, and this family has also held on to large pertions of the old farm. And without any doubt the most hopeless tenement house life to be found anywhere on this continent flourishes (or languishes, if you please,) on the land where old James De Lancy marked out his furrows. It is in this district the gentle-men of the University Settlement society are living in the hope of assisting in some neasure to ameliorate the hard conditions f the very poor who are huddled in wretched houses like rabbits in a warren.

entals, and further concern than this is not to be expected from those who with the noome treat the world to an unexpected sight of an American noblity. Land of Trinity church, King's Farm. Anthony Rutger's farm. Elbert Herring's farm

Land of Abljah Hammond, part of Sir Peter Warren's land. "F." Land of John part of Sir Peter Warren's. Farm of Governor George Rapelve farm. Land of Clement C. Moore Bayard's West farm. Bayatets Bast farm. oosgrelt farm.

Rutger's farm. Farm of James De Lancy Farm sof Phillip Minthorne. Stuyvement farm

"Q." Stuyvesant-farm.
"R." "Satloris Snig Harbor" land.
"S." Farm of Heavy Brevoort.
"T." Farm of Heavy Springler.
"U." Farm of James Duane.
"V. Farm of James Duane.
"V. Farm of James Duane.
"W." Land of Sir Peter Warren.
Across the Bowery road from the De Lancy farm were the Iwo, Bayard farms, separated into East and West farm by Broadway.
North of this, still Tronting on the Bowery, was the Gilbert Harring farm, including Washington squire; and still to the north the farm that dif Captain Randall gave to the Sailors' Snig Harbor. The Henry Brethe Sallors' Snug Harbor. The Henry Bre-voort farm separated this from the place of Henry Springler. which included Union square and from Twelfth to Eighteenth street ran east and west from where Fourth avenue now is to midway between Fifth and

Sixth avenues. How much of thes, not taken for public use, the Spingler heirs still hold I have not gone to the records to see, but it is enough in all conscience, as witness the spacious old residence on the north side of Four-teenth street, with its carriage drive, its oldfashioned garden and its contempt for the enterprising arms of commerce which stretch all about it, but have not come further than the tall iron feace. Strangers and New Yorkers, too, have looked at this old house and have wendered why it should be suffered to remain so long after those like it had been tumbled down. Though I cannot answer the question I do know that the center of the main shelf.

Dr. Carroll estimates that 29,000,000 refashioned garden and its contempt for the

NEW YORKS GREAT ESTATES place. Farmer Rogers had a pretty daughter whose bright eyes won the heart of a young foreigner, a man who, in the absence of any better name, was called Rhinelander, just as we would call a lad newly come from the valley of the Pocomoke a Marylander. But the beginning of this humble romance between the all but nameless German youth and the country maiden was also the beginning of a great fortune, a great family, for the Rhinelander's pretty wife succeeded to the acres of her father and left them for ber children and her children, children to the acres of her father and left them for her children and her children's children. Were it worth while the map of New York with the land lines as they existed eighty or ninety years ago could be gone over and many curious little facts rescued from ob-livion. Were the descendants of the people who then owned the land plous in the same way that in New England the Puritans' great grand children are they would have this done. But bless us, they never will. They can get much nearer what they desire from some college of geneslory and heraldry from some college of geneslogy and heraldry, from some institution that will be sure to give to each patron something to gratify the pride regardless of the varieties that would hinder the hand of a conscientious archaeo-logist and beacher after the frouble. So we will pass these things by for on the map we are now near the first considerable bit of land purchased by the founder of a landed large that to borrow an expression from the race track, it is first and the rest

nawhere BEGINNING OF THE ASTOR ESTATE. I allude to the farm owned in partnership by Governor George Clinton and John Jacob Astor, bounded by Eighth avenue and the Hedson river and Gansevoort street and Nineteenth street. Mr. Astor had already beome a rich man before his first large venture in real estate. His previous ventures had been in the fur trade and in that he had sovereigned away for many years for like a king he sent his fleets to the far seas, his armies of hunters and trappers to unexplored countries. Some of the people in New York take a curious kind of pleasure in recalling the fact that the first John Jacob Astor beat

and spendthrift habits. Since the beginning of colonial life in this country the very great majority of men have had to make their own way by toll through the encompansing difficulties of inherited poverty and ever changing industrial methods and conditions. And so it will remain unless our lives an enterprising man, more farsighted friends, the socialists, manage by levelling was an enterprising man, more farsighted up and levelling down to put and keep all then his contemporaries, more thrifty, more then his contemporaries, more thrifty, energetic, more resourceful. His ear active life was spent in this trade and it he accumulated a fortune that was looked upon at that time as collossal. He went into real estate because he wanted to invest the money he had made in furs and tocking upon his land parchases purely as locking upon his land parchases purely as investments, he began a policy that has been continued by his descendants down to the present time. This policy, it may be emarked, has been usually considered one f the most intense and cruel selfishness defore telling what this policy is it is welto say that it has been condemned quite as severely by those who recognize the ful and complete rights of property as by any others, for the policy leaves out of acc ntirely the responsibility that the ownerhip of property imposes, the responsibility o the rest of the community and the obli gation to assist in all the work that tends toward neighborhood advancement. Neglecting these responsibilities and obligations the stors have as owners of real estate in New York been in a position somewhat analogous to the man who thought he kept within the law in all his acts and consequently out of loved him. juil, yet fails to win either the affection o respect of his neighbors.

THE ASTOR POLICY. There is nothing wonderful in this policy, ut it is remarkable that three generations hould have persisted in it. The first Astor' ive business life was spent in New York, at that period when the city was making its first strides toward commercial supremacy, and its growth was both steady and rapid. The shrewd old German had complete faith was found and the bills were published. Astonishment was feared upon many sides that this distinguished name and that had once graced sight over shops where articles of divers kind might have been bought at retail. Indeed, the bearer of one of these names as Stuyvesant, I believe words to the policy of holding on until this papers in protest, saying that it was news to him that any other engaged in trade, as his people had alve engaged in trade, as his people had save engaged in trade, as his people had such employment, but the estates were farthing of the uncarned increment and to refrain from doing a single their estates. And so tivey may have found such employment, but the estates were likely to have included retail shops, where the owners served customers with a shrewd politeness that concealed it tidd not love the policy any the more because it was lawful. He would not not dull the keen edge of bargaining.

In the development of the town, and he saw, what it seams difficult that any others could as was prosident of the Dialectic society at the policy and the policy of Dialectic society at the policy and the policy of Dialectic society at the Bialectic society the development of the town, and he saw,

as a general thing improve them, but he would lease them for twenty-one or fortywould lease them for twenty-one or forty-two years to tenants, who would build what he considered suitable houses. Under this policy he converted a greater part of his wealth into real estate in New York, and his wealth into real estate in New York, and his riches grew with amazing rapidity. The policy was successfully continued by his son and his grandsons, and the present masters of the estate. The founder's great grandsons, William Waldorf Astor and John sons, William Waldorf Astor and John Jacob Astor, pursue it with only very slight From the time the first Astor joined with lovernor Clinton in purchasing the farms at the foot of Fourteenth street, the Astors

have been steady and regular buyers of real estate property until now it is scattered all over town, from the Battery to the Harlem river and way beyond. Though they have built hundreds of houses they have built in proportion to their holdings that the policy of letting others improve their property has not been affected. Even the great hotels put up on Fifth avenue by Wil-liam Waldorf Astor are not considered to be any marked departure from the established policy. Rather than a departure it is but following the example of the founder, who built the Astor house at Barclay street and built the Astor house at Barclay street and Broadway so long ago, that at that time the hotel was thought to be on the outskirts of the town. When an Astor buys a square of land in any neighborhood the nearby property owners consider it is a misfortune to them, for they have learned by experience that this great estate will do nothing more active than to hold on and await the profits that developments by others will bring. A recent developments by others will bring. A recent instance in point was that of the present John Jacob Astor, who chose to build a stable in Madison avenue, though the stable was distasteful to the neighbors and injurious to their property. No feeling of neighborliness could move him; all he wanted to know was whether or not be was wanted to know was whether or not he was within the law. MANAGEMENT OF THE ASTOR ESTATE.

The founder of the Astor estate managed it himself; those who have come since him have needed assistance and the corps of cierks, collectors, real estate experts and so on has grown until now it is a staff like that of a bank or the executive department of a railway corporation. The large London estates, such as those of the dukes of Bedford and Westminster, are in a great measure in tracts or districts, where everything in sight belongs to the thing in sight belongs to the one landlord. but the Astor properties are scattered all over town and therefore cannot be managed in the same way as these ducal holdings. The manager of the Astor estate has given more than half a century to his work and he may personally know all of the properties, but the younger men and the owners them-silves need to refer to the maps and the books to aid memory. In buying in leasing, in insuring, in building, in making repairs to houses everything is done according to a system that has grown out of the Astorpolicy. So long as this is adhered to the income will probably remain so large that to get rid of it would baffle the efforts of the most reckless spendthrift. But the Astors have never been of this kind was the most reckless spendthrift. But the Astors have never been of this kind and the ruling generation may be depended on to take safe care of their own. Nothing less than a revolution is likely to disturb them The Vanderbilts own very valuable real

estate in New York, but their holdings do not compare with the Astors, nor do they rent to tenants any great number of houses. They are not, therefore, among the great landlords of the metropolis.

JOHN GILMER SPEED.

Pretty little three-cornered tea cabinets that either stand or hang now sometimes replace the 5 o'clock tea table. Hooks are screwed into the back of the upper shelf, and

Dr. Carroll estimates that 20,000,000 re ligious services, not counting the Sunday schools, are held every year in the United

Gen. Howard's Description as Given at the Reunion of the Army of the Tennessee.

RECALLING ITS DEPARTED COMMANDERS

Strange Coincidence of Succeeding in Mc-Pherson's Footsteps - Confederate Versions of the March-What Was Gained by the War.

Comrades: How the years roll around Grant, Sherman, McPherson and Logansuccessive commanders of the Army of the Tennessee-have passed on to the other shore of immortal life. I am the only one of that series of commanders left to meet and address you tonight.

You may say that is not a cheerful chord my dreams with these old friends and intimates. I never meet them in the tomb, but in some active sphere correspondent to with the old places. Grant is earnest; Sherman. gay and off-hand; McPherson, quietly happy. and Logan electric!

My own part in a given dream may be slightly depressing, often shame-producing or ludicrous, or, to coin a word, defeatful! But their parts in the drama of the night visions are now fraught with the triumphs only-whether they be of war or peace. For example: One night I fancied that

had a roll of Brussels carpet much soiled from use. Sherman appeared to be standing not far off and talking rapidly in a most animated style to a host of com-panions. I called out to him, "General, let me bathe my carpet in your tub." He had a quizzical look as he removed his igar and lifted one of his brows after the

"Put that carpet in my tub? All right, Howard, do what you like." This was said This was said with the same old trombone voice and loyous manner which we never forgot. . So you perceive, my comrades, these friends and many others who leave us one by one are not really dead, but living en-

titles not far off from our thoughts night A WORD FOR MUPHERSON

You have given me "Ezra Chapel." All 22d day of July, 1864, in the morning, all these commanders were here in bodily pres-ence living. During that day, as you, Mr. Prosident, too vividly remember, one of them, McPherson, the young man of finest talent and brightest earthly prospect, fel in battle. I have visited his singular tomb in battle. I have visited his singular tomb set up there on the field, also the statue fr Washington, and have had a description of the other erected in Clyde, O. His history, however, is everywhere and his name does not need monuments of iron, stone and marble to keep fresh his memory in the minds and hearts of the thousands who knew and

On the 27th of July, five days after the death of McPherson, I assumed command of the Army of the Tennessee. There is semething a little remarkable in the se quence of his work and mine at points

where they came in contact. He entered the military academy in 1849 Howard in 1850. He graduated in 1853; Howard in 1854. He was cadet quartermaster sergeant during his second class year. Howard the same, succeeding him.

corps to the new command I set the army in motion and we proceeded, General Dodge's corps leading, Blair's and Logan's following in order, from the field of their bloody triumph, now called the battle field of Atlanta. around the rear of the Armies of the Ohio and the Cumberland to and beyond the then extreme right of Thomas' position. to go across Proctor's creek, and Sherman desired me to march in the usual order of columns of four stretching out as far as I ght, so as to encompass the confederate works of Atlanta and gain, if Confederate Hood would allow me to do so, his south-bound railroad track, and thus cut his vital communication. I demurred a little at the manner of going, and so with Sherman's assent changed the order of coming into line. General Dodge had hardly passed Thomas' flank when, General Corse being on the lead. began skirmishing with the confederate pickets and advance guards, driving them back. They gave way step by step as our men advanced. General Dodge handsomely swaps up into line brigade by brigade company up into line brigade by brigade company up into line brigade by brigade company. swung up into line—brigade by brigade com-some years ago of this part of the battle ing into deployment, as we would say with when it was fresher in my memory than smaller fronts, by division on the left into now: line—each successive brigade covered and To protected the rear and then the flank of its predecessor. General Blair, in the same from Dodge, including the Sixty-fourth and Sixty-sixth Illinois. Inspector General Strong came nearly into position, curving up toward the confederate intrenchments. completer adjustment till the daylight of the following morning. Logan unrolled in a similar manner, except that he de-ployed nearly his entire corps during the night, forming a large angle at the junction with Blair. Wood's division was near Ezra

church, and then came Harrow's, and then last on the extreme right Morgan L. Smith's, commanded in this battle by Lightburn, whose own brigade was on the extreme right of Smith's division. Each corps had its own artillery, but there was no cavalry, except a small escort at army headquarters General Sherman, with the view of protect ing our general communications, caused General Thomas to send Morgan's division to Turner's Ferry at the same time that we were moving. To the same end, I had General Dodge reinforce Morgan with the Ninth Illinois mounted infantry. Morgan, so helped by mounted men, was to watch all the roads to our right and rear, and after his reconnoissance came back as rapidly as possible to my right flank. It should be observed that the confederate works in front of Thomas, Dodge and Blair were held in force by Hardee's corps. A GLANCE AT THE CONFEDERATE SIDE.

Now in order to make this battle as plain as possible, we can do at this time what we could not do on the 27th or 28th of July, could not do on the 27th or 28th of July, 1864. We can step over to the other side and see what our opponents were doing. I cannot do better, perhaps, than to give you what our good General Cox has ferreted out from con fed rate reports:
"He (Hood) determined upon another effort

to crush Sherman's flank; and since the thing was to be again tried, it must be admitted that he was wise in determining to strike Howard's right while in motion, and before he could entrench. He withdrew Loring's and Walthall's divisions of Stewart's corps to support General S. D. Lee, who with his corps (latterly commanded by Cheatham) was ordered to move out on the Lickskillet road, attack Howard and drive him from that road artack Floward and the one by Ezra church. Stewart's orders directed him to rémain in support of Lee near the fortifications till needed, and next morning (29th), reinforced by his other di-vision (French's), to move beyond Lee and

"Sherman began to mass his forces in that quarter." On the 28th it became manifest that the enemy (Howard) desired to place his right 5h Utoy creek. I determined to hold the Lickskillet road, and accordingly ordered Lieutepant General Lee, who on the 28th relieved Major General Cheatham from command of the corps formerly commanded by myself, to move his forces so as to prevent the enemy from gaining that road. He was ordered to hold the caremy in check on a line nearly parallel with the Lickskillet. "Sherman began to mass his forces in that they come from all quarters and in all arter." On the 28th it became manifest shapes, and they will continue to come as

gained that position, engaged him with the intention to recover that line. This brought on the engagement of the 28th," towit, the battle of Ezra Church.
"My old classmate, General S. D. Lee,

"My old classmate, General S. D. Lee, whom our men reported as riding in the thickest of the fight on a white horse all that exciting day, says of his movement: "The (confederate) army was then in position and intrenched around Atlanta daily shifting its position to meet the flank movements of the enemy. On the 27th Hindman's and Clayton's divisions were withdrawn from the trenches and massed on the Lickskillet road. On the 28th, about 11 a. m., I received or-On the 28th, about 11 a. m., I received or-ders to move out on the Lickskiller road and check the enemy (Howard), who was then moving to our left, as it was desirable to hold that road, to be used for a conemplated movement. I soon found that the nemy (Howard's skirmishers) had gained that road and was gradually driving back ous cavalry. Brown's division was at once formed on the left of and obliquely to the road, and Clayton's division on the right, connecting by a line of skirmishers with the main works around the city. As soon as Brown was fermed he moved forward, handsometry driving the same of left between the control of the to touch. Why not? I often mingle in somely driving the enemy (Lightburn's men) across the road and to a distance half a mile beyond, where he encountered temporary breastworks, from which he was driven back with considerable loss. Clayton's division moved forward as soon as formed, and about ten minutes after Brown's advance, and met with similar results. I found it difficult to rally Brown's division, and moved ft against rally Brown's division, and moved it against the enemy a second time. The consequence was that one or two brigades of this division, as also Clayton's division, sustained heavy losses because of the fathere in the attack of portions of their lines. Walthall's division, of Stewart's corps, had moved out on the Lickskillet road, while Brown's and Clayton's divisions. on the Lickskillet road, while Brown's and Clayton's divisions were engaged with the enemy. At my suggestion this division was thrown against the enemy where Brown had attacked. The enemy (Logan's line) was still within easy range of the Lickskillet road, and I believed he would yield before a determined attack. The effort was, however, a failure."

GENERAL HOWARD'S VIEW. As Dodge and Blair were occupied with the onfederate forces inside of the Atlanta works, it is evident that the moving con-federate column greatly outnumbered our men, who were engaged at the points of

Some writers think that Hood, after his sad experience at the two battles of the 22d of July and Peach Tree Creek, should-have managed to stand on the defensive and have managed to stand on the defensive and have waited for our coming. If he had done so we would have had his railroad communications cut off by two hours after aunties of the 23th. Once there, he could not have disloged us, and the siege of Atlanta would soon have ended in prompt abandonment or surrender. Certainly our movement would have forced even Johnston to have attacked us as Hond did.

HOW THE ACTION BEGAN. All the morning of the 28th Logan kept moving steadily forward, well covered by his skirmish line. With my staff and small escort I kept him in sight, following up the movement. Between 7 and 8 Sherman logant me as we were possible through a oined me as we were passing through a heavily wooded country. As we were versing the skirmishing became more brisk and what I took to be grape-shot through the trees over our off the limbs. We both felt that t was becoming more obstinate. ends, breaking We both felt that the enemy "General Hood will attack me here."
"I guess not; he will hardly try it again;" Sherman replied.

I then remarked that I was three years at West Point with Hood, and pronounced him indomitable in heart."

Now, as the sounds of battle kept on increasing. Sherman turned back to Thomas, probably having a double motive; first to be where he could best re-enforce, and see-

intrenching. It did not take long to verify my pre-liction. That shrill, terrifying yell-who diction. can ever forget it! Hood's men charged and fired as they came. All along the lines our men remained in place. I saw that a few straggled back from one cause or another but not many. These few Logan and offi and back they went to duty, impelled by the shrill fierceness of his indignant voice. Though it seems hardly possible that so much time had passed since Sherman left, yet all the diaries place the hour of the first assault after 11 a. m.

From Harrow's and Smith's front the first charge was met with rapid and well directed firing. Nothing could stand against it, and the most of the confederates either fell to the earth or turned and fied, protecting themselves as best they could by the trees and the incidents of the ground.

lery placed several batteries, armed with re-peating rifles, so as to sweep that exposed flank. These were brought in at the exact moment, and after a few rapid discharges, the repeating rifles being remarkable in their execution, all the groups of flankers were either cut down or had sought safety in flight. This battle was prolonged for hours. We expected help all that day from Morgan's division of Palmer's corps, coming back from Turner's ferry, but the confederate cavalry kept that division in check. Our troops ex-hibited nerve and persistency. Logan was cheerful and hearty and full of onthusiasm,

the stopped stragglers, as we have seen, and sent them back, and gave every needed or-der. Blair was watchful and helpful; so was Dodge. After the last charge had been re-Dodge. After the last charge had been re-pelled I went along my lines and felt proud-and happy to be entrusted with such brave and efficient soldiers. Hood, having again lost three times as many as we, withdrew within his fortified lines. Our skirmlehers cleared the field, and the battle of church was won; and with this result I con-tented myzelf. One officer who was a little panic-stricken ran with the first to Sherman and cried substantially, as I re-You've made a mistake Pherson's successor. Everything is going to

Sherman said: "Is General Howard 'Yes, I suppose he is." Well, I'll wait before taking action till I

So Sherman sustained and trusted me, and was content GAINS OF THE WAR. When the war spirit is upon us, oust be when we return to our fields of conquests, we do not, I think, enough em-phasize what was gained by the war.

It is not enough to cry out that slavery was abolished. All our institutions covered, by the constitution of the United States and still developing under its nourishing sunshine more and more year by year, were then at stake. What were those institutions? I love to

reckon among them the American family, the American school, the American churches and the American ballot.

vision (French's), to move beyond Lee and vision (French's), to move beyond Lee and turn completely the flank of Howard, attacking him in the rear. Hardee's corps and Smith's Georgians were ordered to occupy the works in front of Thomas and Schofield."

Perhaps General Hood himself makes it less loyalty which inspired and animated curselves from 1861 to 1865.

The storms come even in times of peace: