# A NEW FORM OF ENERGY.

## THE ELECTRICAL DISCOVERIES OF MARCONI IN LONDON.

### A SPECIES OF WAVES THAT CAN BE USED TO SEND MESSAGES THROUGH THICK WALLS—CONJECTURES ABOUT BRAIN WAVES.

Within the last few months the scientific world has been gradually waking up to the immense possibilities of a recent discovery by a young Italian named Marconi, who lives in London. This discovery promises not only to develop a practical usefulness equal or superior to that of Röntgen's, which it resembles in some respects, but also to give fresh stimulus to a variety of fascinating and fruitful researches in other directions. The radiance which the Bavarian professor found, it will be remembered, is invisible, and will penetrate many opaque substances, and yet possesses some of the properties of ordinary light. That is to say, it produces photographs, and it will become luminous when it falls on a certain class of substance called "fluorescent." What Marconi has discovered is a form of energy which must be called "electric waves" at present, and which was at first confounded with the so-called "Hertzian" waves, but now proves to be quite different.

As long ago as last autumn Mr. Preece, chief electrician of the British postal service, made a brief public announcement of Marconi's experiments in telegraphy without wires by an entirely new system; and The Tribune referred to the subject at the time. In the current number of "McClure's Magazine," however, further details are supplied; and while both the scientific and non-scientific reader are left in tantalizing suspense in regard to the mechanism employed and some of the processes involved, additional light is thrown on a subject which is destined in the near future to command the rapt attention of all who are interested in the mysterious phenomena of ether waves. The effect of this young Italian's researches is sure to be far reaching.

OUTSIDE A CONDUCTOR.

When electricity passes along a copper wire without interruption, it pervades the whole of the conductor from surface to centre. But when by any means the current is made to alternate to and fro with great frequency, it confines itself to the surface. Something more happens, too. It is now believed that each time that an electric current begins to flow in a material conductor, what is called an "electro-magnetic field" is created around it; that is to say, a sort of strain is set up in ether immediately surrounding it. As soon as the current ceases, this strain is relaxed, and the "field" ceases to exist. It may be imagined that, in one case, an infinite series of tiny rings of force are made to encircle the wire at a slight distance from the surface; in the other case, that these rings shrink down simultaneously into nothingness. But if the alternations of current in the wire be very rapid (20,000, 100,000 or 1,000,000 to the second), then the formation of these rings of force occurs with equal frequency and greater abruptness. Thus, waves are excited which proceed outwardly from the conductor equally in all directions, like the ripples on water when a stone is dropped in. Some of the energy flung off sideways from the conductor never returns. This electro-magnetic radiance, which is an entirely distinct thing from what goes on in the wire itself, or at its ends, was made the subject of investigation by the late Heinrich Hertz, of Bonn. The brilliant results of his work provoked unbounded delight among physicists, and lent peculiar bitterness to the grief to which his early death gave rise.

There is a curious discrepancy in the accounts of Hertz's work. In some places he is represented as experimenting with currents having 100,000,000 alternations per second, while elsewhere he is said to have devised apparatus which gave him 500,000,000,000 waves a second. The number, however, is immaterial for present purposes. The great discovery which he made was that he could retract these waves by a peculiar prism, could reflect them and make them exhibit what are called the "interference" and "polarization" phenomena of light. He also discovered that these waves or rays travelled with the velocity of light. His conclusions have been generally received by the leading scientific authorities of the day.

HERTZ'S EXPERIMENTS.

Now, Hertz would set up exceedingly rapid surgings of current in one metallic conductor and then place a second conductor at a distance from it in what was found to be an advantageous position. The magnetic waves thrown off laterally from the primary conductor through space would be caught by the secondary, and could be made to manifest themselves in various ways. The highest success was obtained, however, when the secondary was "tuned" so as to respond; that is to say, it was especially designed to vibrate more naturally at the same rate as the radiance from the primary wire than at any other frequency.

When Marconi's experiments were first reported, it was said that his waves were the same as those with which the name of the great Bonn investigator is so closely associated. He may have believed it himself at first. And it was supposed, therefore, that his receiver was a tuned "resonator" of the Hertz pattern. But the interesting interview which "McClure's Magazine" now prints indicates that a different kind of radiance is involved. For instance, he says that in future he will abandon the use of the parabolic mirror hitherto employed to focus the rays as a searchlight does. He is now satisfied that it would be of no value. Nor, at present, does he know of any kind of lens that would perform the office of concentration. He evinces hope that invention may yet find a way to stop progress in all other directions and compel the waves all to go in one—a highly desirable consummation in practical telegraphy. But thus far, his rays do not seem to be susceptible of reflection or refraction, like light and the Hertzian waves. Moreover, Marconi says that the radiance which he employs has a higher penetrative power than that of Hertz. He believes that it will go through anything and everything. The rate of alternation he used was 250,000,000 per second, but he experimented with waves of different lengths, from thirty metres (or 100 feet) down to ten inches.

WHAT MARCONI HAS DONE.

Now, what has Marconi actually done thus far? Well, with a very modest battery (of eight volts and three amperes), and with his transmitter and receiver placed over 300 feet apart, he sent a message through seven or eight solid stone walls in the General Postoffice Building in London. Another dispatch was sent a mile and three-quarters, across Salisbury Plain, with the same apparatus and without any connecting wire. Marconi tells his interviewer that he believes that with proper instruments a message could be sent through four miles of city buildings and, perhaps, twenty. Indeed, he is not willing to declare transmission from London to New-York impossible, although at present he does not see his way clear to accomplish such a feat.

Incidentally, it may be remarked that so long as the Marconi radiance is permitted to spread equally in all directions from the generator, like light from a lamp, it would be possible for anybody to pick up a message telegraphed by the news system, if he only knew the exact rate of vibrations employed and had a receiver precisely tuned thereto. There would seem to be some difficulty, therefore, about maintaining that secrecy which is usually desirable in telegraphic correspondence. But this difficulty can probably be overcome.

Apart from the practical uses to which the discoveries of Röntgen and Marconi may be put, their work derives interest from recent speculations upon the possibility of human thought and feeling being transferred to a distance by modes with which we have not hitherto been familiar. Curiously enough, in combination with its interview with Marconi, "McClure's Magazine" prints another with a Hindoo scientist, Dr. Jagadis Chunder Bose, who has not only conducted some experiments like the Italian's, but has considered the chance that impulses may be sent from one brain to another over long distances in the form of etheric waves. He declines to talk for publication on this point, although confessing that he entertains positive opinions relative thereto. However, William Crookes, the eminent British chemist and newly elected president of the Society for Psychical Research, was more outspoken in his recent inaugural address in London. The suggestions which he offered in regard to "brain waves," while by no means new, and though received with favor by a comparatively limited class as yet, are wonderfully attractive to people possessed of imagination.

DIFFERENT WAVE VELOCITIES.

Every one who has given any attention to the phenomena of sound, heat and light is aware that the first-named form of energy is propagated through ponderable matter in waves ranging in number from 32 to 40,000 per second. Light, it is now generally believed, consists of undulations numbering from 400 trillion (at the red end of the spectrum) to 800 trillion (at the violet end). These waves are transmitted through a hypothetical weightless medium which the physicists are practically agreed in supposing to fill all space between the stars, and to pervade all matter. Heat is believed to be represented by a set of vibrations only a trifle slower than those of light, say from 35 trillions to 400 trillions a second in frequency. Below this point in the scale there is an enormous gap of possibilities, broken, so far as we know, only by the various grades of electric waves here referred to, and covering an exceedingly small fraction of the interval. Then, again, there are still more rapid oscillations than any yet mentioned. An eye at the spectroscope can perceive nothing beyond the violet. But the camera extends the spectrum to about twice its visible length in this direction. Crookes, still treating the waves thus registered as light, says that we know of vibrations reaching a frequency of 1,875 trillions a second, and asks how much further we may go. Then comes the profoundly absorbing question: What other phenomena, of which we mortals are now, or may some time be, conscious, are represented by the unknown regions here hinted at, in the scale of etheric vibration?

DOES THIS EXPLAIN TELEPATHY?

Of late years much has been heard of "telepathy," "thought transferrence" and kindred interchanges of feeling and idea by a mysterious process. Are these genuine experiences? And are they explained by ether waves at higher frequency than any yet known? Mr. Crookes believes both of these propositions credible, although not yet demonstrated. The vibrations might be regarded as not susceptible to either refraction or reflection, and travelling in straight lines through any kind of matter with ease. The hypothesis is involved in more than one difficulty, and a vast amount of research is yet necessary to its confirmation. In this connection the following passage, from a note to "The Electrical Engineer," relative to Mr. Crookes's ideas, may properly be quoted, with the prefatory remark that the author is a well-known authority in electrical science. He says:

"It is very improbable, as I pointed out long ago, that brain action is unaccompanied by wave disturbances in the ether. It is only a question as to their intensity and capability of awakening thought in a recipient brain. This, as I understand it, is the real question at issue; not whether there be brain waves, but whether they be capable of accounting for the phenomena of telepathy. I still see no reason to change my opinion as to the possibility of this action."

## *AN INDIAN NEW WOMAN.*

From The St. Louis Globe-Democrat.

The newest of new women, and yet one of the oldest, if the aborigines may be classed as "old," was yesterday seen on the streets of St. Louis. She was a splendid specimen of womanhood, strikingly handsome and superbly proportioned, and was dressed in bloomers, although they differed in style and cut from any worn by the St. Louis bicycle girls. She was an Indian woman, the full-blooded daughter of a chief of the Sioux tribe, one of the fiercest and most bloodthirsty bands which ever troubled the settlers of the West, and her dress was one of the most peculiar ever seen on the streets of a great city. A dark hat of modern style half hid a quantity of raven-black hair on her splendid head, and a long ulster of the most recent fashion enveloped her, outlining her fine figure to advantage. But below this there flapped out as she walked the most remarkable part of her dress, and that which attracted the most attention, her bloomers. They were cut long and straight, like men's trousers, and were small at the bottom, so that they were rather close about the ankles. These bloomers were of black silk, and the inner and outer seams were decorated with four or five rows of beads of various colors and worked in fanciful design. Flowers, snakes and animals ran up and down the side, and made the bloomers, or trousers, a thing to attract attention anywhere, and especially on so handsome a woman. Her complexion was olive, like that of a Spanish girl, and clear, her cheeks were rosy and her voice low, but her eyes were dark and piercing, and seemed to look through one. But with all her fanciful dress and her name of Talaconqua, she is the wife of one of the richest merchants of the great Southwest, and is on her way to Europe, where she will doubtless be received by royalty.

In direct contrast to this woman was one of her companions. Taller than she, with hair as light as hers was dark, and light blue eyes, his ruddy, sunburnt face was partially shaded by the broad-brimmed sombrero, which was tipped to one side on his head. As he walked there was a swing to his gait that told of the easy gallop of the mustang, and everything in his manner bespoke the cowboy. His shirt, which was of expensive material, was made negligee fashion, and cut low at the neck, showing a powerful neck, tanned by the exposure of many suns on the plain. His clothes, too, were of expensive material, but the cut was a trifle odd. Still they gave one the impression that they were paid for, and that the man who wore them had his own opinion as to how clothes should be made for him, as he was the man to wear them. He walked along, frequently squirting a stream of tobacco juice through his white teeth and stroking his long blond mustach. The man, Samuel Brennan, is worth $250,000, and is one of the most successful merchants in Texas.

Between this strangely assorted pair walked a youngster, about six years old, and his dress was as stylish as that of his companions was unconventional. A leather Tam o' Shanter was placed jauntily on one side of his crown of golden curls and he wore a velvet coat of Fauntleroy pattern. His little feet were incased in swell patent leather boots, and above them, extending nearly to the hip, were leather leggings. These were decorated somewhat after the manner of the bloomers which the woman beside him wore, but were not so noticeable because of the decoration, as there were only two rows of beads and they were dark in color. The little fellow carried a cane, which he swung to and fro like a Fifth-ave. dude, and yet the Indian woman is his mother and he is the heir to $250,000, and is going abroad to enjoy the advantages of foreign travel.

## *TONS OF TRUFFLES.*

### THERE ARE ENGLISH ONES ON THE MARKET.

From Answers.

In an ancient, dark and cryptlike cellar, situated not a stone's throw from the Tower of London, there is stored at this present moment a vast mass of black, putrescent-looking and evil-smelling fungus which is worth a king's ransom. Truffles! Tons of them! And every single pound weight worth from six to twelve shillings in the open market. This cellar, vault, crypt—call it what you will—is the central depot in England for this curious dainty.

An ingenious School Board child once defined a radish as round and red, except when it was long and white. Similarly the truffle may be described as round and black, except when it is oval and yellow. It possesses a peculiar, penetrating, pungent odor, and a flavor which has been compared to almost every known edible, but which is, in point of fact, distinct and peculiar to itself. "A truffle," as a famous gastronomic expert sagely remarked, "tastes like a truffle, and like nothing else under the sun." The late Lord Beaconsfield, who, strangely enough, detested truffles, is reported to have described them as "looking like rotten potatoes, and tasting like bad lucifer matches."

The best truffles come from Périgord, near Bordeaux, and from a place called Carpentras, which is in the neighborhood of Marseilles. To the peasant who resides in these districts the black, granulated, nutlike root is everything—board, lodging, fuel and clothing. From the end of November, when the harvest begins, until the middle of March, when it ends, he hunts for truffles morning, noon and night with a praiseworthy diligence which leaves little to be desired. During the remainder of the year he divides his time pretty equally between indulging in piously worded regrets that the harvest was not more bountiful, and attempting to forecast the quantities which will be available for gathering during the ensuing season.

The fungus grows and ripens at a depth of from eight to twelve inches beneath the surface of the ground, and is hunted by dogs specially trained to the work. A good dog will often unearth three or four hundred truffles a day; and during the season it is no uncommon thing for an expert hunter, who understands his business and has a knowledge of the localities where the root is to be found, to make as much as £3 and £4 daily. In addition to the dogs, pigs are also used to smell out the hiding-places of the truffles; but experience has shown that they are not so reliable, besides being far more difficult to train.

England takes a considerable proportion of the French crop, the price on the London market varying from six shillings to two guineas a pound. A series of severe frosts kills the fungus, or, at all events, prevents it from ripening; and truffles are then extremely scarce and proportionately dear. Last year, as it happened, hardly any truffles were to be had either for love or money, and a number of "lots" were sold wholesale toward the close of the season at 30 shillings a pound. This year the same truffles would probably not fetch more than a fifth of that sum.

In addition to the true French truffle there are considerable quantities of English ones on the market—more, in fact, than the dealers care to admit. Hampshire, Wiltshire and Dorsetshire are where they are generally found; and it is a legend to this day among the country people engaged in the business that the existence of the underground root in their neighborhood was first made known to their ancestors many years ago by a foreigner who came among them from no one knew whence, accompanied by two long-haired dogs of the poodle variety.

Epping Forest, once famous for its truffles, is now destitute of the succulent root, and the same remark applies to Hadleigh Woods and the forest country around Barnet.

# MR. HOOLEY AND HIS MONEY.

## HE SAYS HIS ONLY BOTHER IS HOW TO SPEND IT PROPERLY.

### HIS PROJECT TO CELEBRATE THE QUEEN'S YEAR BY DEVOTING THE INCOME OF $2,000,000 TO CHARITY—FARMING IS HIS HOBBY.

From Black and White.

Mr. E. T. Hooley is constantly taking you by surprise. One day he is the prime mover in some stupendous financial undertaking; another, he has formulated a scheme and provided the means for assisting all the widows and orphans and helpless in the district lying around his home in Derbyshire; yet another, he offers to buy the Penrhyn Quarries; and finally he discloses to a "Black and White" representative his old-age pension scheme, which is simple and sweeping enough to command the attention of the country.

Mr. Hooley is a comparatively young man, being only thirty-eight years of age. The admirable portrait of him by Mr. Bacon shows him as he is: strong, eager, alert, but astonishingly calm and self-

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composed. There is not the least indication of worry about him. His speech is quick clear and to the point. He strikes you at once as a man of affairs.

"I know the popular conception of me," he said, with a laugh: "A middle-aged, pot-bellied, plutocrat with a big watch chain." The contrast was obvious enough to be striking.

"I dare say you are accustomed to misrepresentations?" "Yes; but they don't bother me. Some journal the other day quoted a sentence out of a speech of mine delivered at a smoking concert of workingmen in the constituency which I hope to represent after the next election, and said there was no doubt as to him upon whom Colonel North's mantle had fallen. I knew what the writer meant, but obviously that person did not know what I had really said. But if ever I am returned to Parliament I shall certainly not be a dumb member, so there will be no lack of means for my critics either to amend or indorse their judgments on me. I don't exactly know how to describe myself politically. The Conservative party is the party to which I am allied,

MRS. HOOLEY.

and my sympathies are all with the working-classes and the poor. I want to help them; and I will, too."

"What suggested to you the scheme which you have just put in operation in your native district?" "The Queen, you will remember," said Mr. Hooley, "when she was asked how she should like her Diamond Jubilee to be commemorated, refrained from any definite proposal, but said she would like something to be done for the poor and helpless, the widows and orphans and destitute. Well, last year I was greatly successful in business, and so I said to myself, 'Now, what are you going to do to commemorate the Queen's Diamond Jubilee and at the same time put your money to the best use you can?' Then I remembered what the Queen had said, and it accorded with my own inclinations. So I set aside £400,000, the interest of which will henceforth be distributed by organized bodies throughout the districts included in the scheme. It is now in full swing. There are eighteen committees established for the purpose of administering it."

"Is there no fear that the people will be pauperized by such munificence?" "Why should they be?" asked Mr. Hooley, with some warmth. "That is a question which every one asks. At present, if a widow with children is unable to support herself and them, she can get three shillings a week from the parish for herself and one shilling and sixpence for each of her children. That is pauperizing, if you like, to those who are poor through no fault of their own. Under my scheme the committees investigate every case; indeed, in such a restricted area every case is known to them, and they give according to the needs of each individual case."

"Suppose the Government bring forward an old-age pension scheme, will it in any way interfere with yours?" "Not in the least; it will only be so much extra for those who are not likely to be pampered with what they get. But I have thought out an old-age pension scheme for the whole country, and I am certain that mine is the right one. If it is not, there are 670 members of Parliament; let them produce an alternative scheme which is more feasible. I have talked over my plan with men whom I will not name, for that would not be fair to them, but you may take my word for it that they are men of the highest influence and position in the country. They agree with it heartily; but they are frightened to propose it. You see, at a first glance, my scheme looks like protection, and, of course, protection is a bogy to scare all the Parliamentarians in the land, especially as a Parliamentarian is seldom a man with the courage of his convictions, but one who, having with difficulty procured a seat, desires to sit in it. Briefly, and in the rough, this is my scheme. Old-age pensions must, to a certain extent, be paid for by those who benefit by them. You must not simply take from the rich man to give to the poor man. Every one must contribute. Now, impose a duty of five shillings a quarter on all the corn imported into this country and you will have the money for your scheme at once. And mark how it affects the workingman, this duty on corn. There are 50,000,000 quarters of corn annually imported into this country. Of these 50,000,000, 23,000,000 are wheat and flour, 12,000,000 are maize, 6,000,000 are barley, 6,000,000 oats and the other 3,000,000 quarters may be peas and beans, etc. Now, you see the workingman contributes only on what wheat and flour he uses. He is not affected by the duty on the 12,000,000 quarters of maize; the tramway and railway companies would feel that; the brewers, not the workingman, would contribute on the imported barley used by them; and the same is true of the duty on the 6,000,000 quarters of oats. The workingman, therefore, contributes only on 23,000,000 quarters of the 50,000,000 quarters of corn annually imported into this country. Such a duty on imported corn would thus press unduly on no portion of the community, least of all on the workingman, who would ultimately benefit by it when he was old enough to get his pension. It would also benefit the agricultural interest. The objection to protection generally is that you benefit agriculture at the expense of the workingman. In this case you don't; you benefit both. Give me twelve men to help me, and I'll convert the country to my scheme in less than a month."

"And now, Mr. Hooley, when you are at leisure, what is your hobby?" "Farming. I am the biggest sheep-breeder in England. Nothing gives me more pleasure than to escape into the country and walk over my farms. Just the other day I was told that eight of the Shropshire ewes that I got from Sandringham had presented me with two lambs each, and it gave me more pleasure than the biggest deal I have ever done. I must be a farmer at heart, for nothing on earth worries me so much as when a favorite cow calves and the calf dies."

"Are you fond of sport?" "Yes. But I don't shoot. The sound of a wounded hare or the sight of a bird with a broken wing is enough to spoil all the fun for me. But I have no fad nor prejudice about it, only for me the thing is not possible."

"Is Ilkstone your native place?" "I went there when I was four years old, and I have lived there ever since. That is why I wish to represent it in Parliament. I left school when I was thirteen years old, and when I was at school I had to walk eight miles a day. I began life early; but I was born under a lucky star, though I have seen as much misery and poverty as any man living. I want to lighten it, if I can."

"You must have a lot of work to get through every day." "I begin with three secretaries, at 8 o'clock sharp every morning, and by 10 o'clock at night I am generally ready for sleep."

"Don't you find it embarrassing to be a millionaire?" "Not a bit of it," said Mr. Hooley, laughing. "I try to do the best I can with my money, and then forget all about it."

"And you are never worried?" "Never."

# *A BOY NATURALISTS' CLUB.*

## WORK OF SOME PITTSBURG YOUNGSTERS.

Herbert N. Smith, Curator of the Carnegie Museum, in The Pittsburg Dispatch.

The inception of our boys' clubs is due, first to the boys themselves, and second to my assistant, George Atkins. Early in November he noticed that several of the young visitors to the exhibition rooms showed an exceptional interest in the collections, asking questions, taking notes and sometimes bringing specimens for comparison. If Mr. Atkins had never done anything else for the museum, what he did then would deserve our lasting gratitude. He got two or three of the boys together, encouraged and fed their enthusiasm, and explained how easy it would be for them to learn to mount birds and insects, and finally he brought them to the laboratory and introduced them to me. Now, I have a fellow-feeling for boys, because I was a youngster myself once upon a time, and I have never quite forgotten it. These little fellows, with their bright, earnest faces, attracted me at once, and I gladly offered to help them. Next day one of them came to see me with a box of shells; I helped him to name them and gave him some duplicate specimens from our own set; so we had one collection fairly launched.

The result was surprising. In a week we had a dozen collections under way, and Mr. Atkins was giving regular lessons in taxidermy. I may say right here that he has shown a really wonderful ability as a teacher, seizing and holding the attention of his young pupils and gaining their affection as few men can; he has been the life and soul of our work. For my part, I did what I could. The boys, having the run of the laboratory, came over by twos and threes every afternoon and they were simply bubbling over with enthusiasm.

BOYS ARE UNDERESTIMATED.

Now, I have an idea that we underestimate boys; when they are in earnest they are capable of accomplishing almost anything that men can do. Besides, my sympathies were enlisted. My own boyhood was passed in a small village. Before I was ten years old my taste for natural history had led me to attempt small collections of plants and insects; but there was no one to help me, no one who had the slightest sympathy with such pursuits. I think now of the discouragement and even ridicule that met me at every step and almost drove me to despair. No wonder, then, that I have a fellow feeling for these boys; no wonder that I longed to help them. For the love of nature is a heaven-given instinct, a thing to be encouraged as we encourage literary tastes and good morals; it enlarges and ennobles the mind, trains the powers of observation and opens the way to long hours of quiet enjoyment, the best and truest, perhaps, that man can have. Only a few of our boys can be professional naturalists, but all of them can be intelligent amateurs, and do good, scientific work, too.

I talked the matter over with Mr. Atkins, who agreed with me thoroughly; finally, we consulted with the boys themselves, and proposed the formation of a naturalists' club. The plan was taken up eagerly. So, one Saturday afternoon, near the end of December, we held our first meeting in my laboratory. There were ten boys in all, three of them high school pupils, the others younger; a picked lot, every one earnest and enthusiastic, every one fully convinced of the importance of the move they were making and its possible results.

AFFILIATION WITH OTHER SOCIETIES.

That meeting was a revelation to me. It is well that I should write its history here, for it will be read with interest a hundred years hence, when the club numbers its organizations by scores and its members by thousands. Mr. Atkins and I had prepared a constitution, and we stood ready to coach the inexperienced members, but, truth to tell, they proved themselves quite capable of carrying on their own affairs. Every face was grave with responsibility and high resolve as we spoke to them of the aim of the organization and its promises, impressing the importance of avoiding mistakes in the outset. Then the constitution was taken up and discussed, article by article, with a carefulness and good taste that would have done credit to any assembly. Several amendments were offered, and several of them—excellent ones, too—were adopted. After a short recess to discuss candidates the boys proceeded to elect their officers. A committee was appointed to select and report on a club badge. The discussion of the bylaws was laid over to the next session, and the meeting broke up. But the boys remained for an hour or two to talk matters over, and they went away full of high hopes and more in earnest than ever.

The organization was named in honor of the founder of the museum, the Andrew Carnegie Naturalists' Club. Its objects are to promote social intercourse and recreation, combined with the study of natural history; the members are to aid each other in forming collections and making special investigations, and during the summer we hope to organize excursions and camping parties. In order to extend its influence and benefits beyond Pittsburg, the constitution provides for affiliated clubs within a radius of 200 miles; such clubs to correspond with the central organization and to visit us when they can. The Andrew Carnegie club admits boys between the ages of 9 and 18 years, who have a love for natural history. No restriction as to constitution or age is placed on the affiliated clubs; any society having objects and organization similar to ours may be admitted to affiliation by a unanimous vote of its members and a two-thirds vote of the central club. It will be seen at once that these affiliated societies are likely to prove an important part of the organization, which, by means of them, may grow to any extent. Meetings are held on alternate Saturdays. At the first regular session after the organization there were twelve candidates, all of them present, and all the original members. At the second session there were more applicants; at the third we were quite crowded out of the laboratory, and the meeting was held in the room of the Microscopical Society, which had been generously placed at our disposal. At the fourth session, last Saturday, there were forty-seven boys present. It is evident that the microscopical room will not hold us much longer and that we must move into the lecture-room. The first affiliated society has been admitted; the Edgewood Botanical Club, formed of twelve girls, who were organized under the direction of Miss Belle Murry. A similar club is to be organized among the boys of St. Vincent's College, and one or two more are under consideration.

PARENTS BECOME COLLECTORS.

The enthusiasm is simply wonderful. Men of high scientific attainments who have attended our meetings have expressed their satisfaction in no measured terms; but even they do not see all that is accomplished. We have a score of creditable collections started in conchology, entomology and ornithology. We have regular and large classes in entomology and taxidermy; indeed, the boys are in such deadly earnest that they threaten to use up all our time, and I have been forced to limit their visits to the laboratory, though I am loath to do so. One unexpected result is apparent, and it may prove important. The enthusiasm of the boys is infecting their elders, and more than one grave business man or society lady has been touched with the collecting fever. All the better; we wish to make collecting a fad around Pittsburg, and the more widespread it is the more we shall be pleased.

The boys sent a letter to Mr. Carnegie, informing him that the club had been named in his honor; and the autograph letter which he sent in reply is full of encouraging words. Through the generosity of Mrs. R. D. Brent this letter has been handsomely framed, and it will hang in a conspicuous place in the meeting-room. The fame of the society is spreading far and wide; nearly all the newspapers give reports of its meetings, and "The Bulletin" published a picture of the club in session. The meetings are really interesting and instructive; several of the boys have read carefully prepared papers, quite good enough for publication.

Just now we have a new enterprise in hand, and I wish to ask the support of your readers for it. We propose to establish a little monthly magazine, to be called "The Carnegie Naturalist"; it will contain, at first, no more than eight or ten pages, though we hope to enlarge it in the near future. Of course, such a magazine must be supported mainly by subscriptions; we have not yet decided on the price, but it will not be over 75 cents per year, and I feel sure it will be worth much more than that to an intelligent household. It will contain not only the club news and essays by the boys, but matters relating to the museum, and contributions from various naturalists. Any one wishing to aid the boys by subscribing to the magazine may notify me by postal card; subscription money can be collected later. It is a good work; let us have a thousand subscribers.

# *SPECIAL FLAGS SELDOM SEEN.*

## THE PRESIDENT AND THE SECRETARIES OF THE NAVY AND OF WAR HAVE THEM—HOW THEY ARE USED.

Among the special flags of the United States there is now for the first time one belonging to the Secretary of War. About eight years ago a special flag was made for the Secretary of the Navy, and the President has had his private flag for many years longer than that. In regard to the origin of the new flag for the head of the War Department, ex-Secretary Lamont said last week to a Tribune reporter:

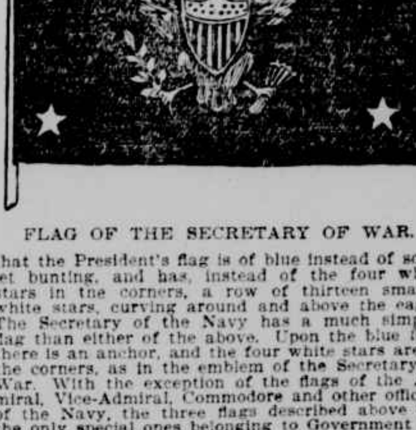
"When I entered upon my duties as Secretary of War four years ago one of the papers I found awaiting action on my desk was a recommendation from General Schofield, then at the head of the Army, in favor of a special flag for the Secretary of War. I thought that to begin my official work by ordering a flag for myself was not exactly a graceful thing to do, so I allowed the matter to drop until the end of my term. Then I realized that my successor would find himself in the same predicament in which I had been four years before, so I made one of the last of my official acts the approval of the order for the flag. But in the beginning it was General Schofield's idea."

The new flag, which has already been described, is of scarlet bunting, the fly measuring 12 feet and the hoist 6 feet 8 inches. In the centre is an eagle with outstretched wings, bearing upon its breast a United States shield. The eagle, which is the same as that on the National arms, holds in its right talon an olive branch with red berries,

PRESIDENT'S FLAG.

and in its left a bunch of arrows. In its beak is a scroll with the motto "E Pluribus Unum." In the field of the shield are two rows of stars, six in the upper and seven in the lower row. There is also a large white star in each of the four corners of the flag itself. Provision has likewise been made for a smaller, nearly square flag of silk, in the same design. This latter is officially known as the "colors" of the Secretary of War.

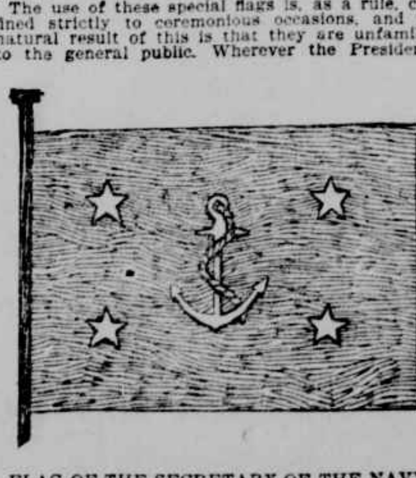
The special flag of the President of the United States is similar to the one just described, and the new design is evidently a modification of the older one. The only differences between the two are



FLAG OF THE SECRETARY OF WAR.

that the President's flag is of blue instead of scarlet bunting, and has, instead of the four white stars in the corners, a row of thirteen smaller white stars, curving around and above the eagle. The Secretary of the Navy has a much simpler flag than either of the above. Upon the blue field there is an anchor, and the four white stars are in the corners, as in the emblem of the Secretary of War. With the exception of the flags of the Admiral, Vice-Admiral, Commodore and other officers of the Navy, the three flags described above are the only special ones belonging to Government officials.

The use of these special flags is, as a rule, confined strictly to ceremonious occasions, and the natural result of this is that they are unfamiliar to the general public. Wherever the President's



FLAG OF THE SECRETARY OF THE NAVY.

flag flies, it denotes his presence, in the vessel or building over which it is hoisted. Its employment in the case of buildings in which the Executive may happen to be staying is merely optional, and the ceremony is more frequently omitted than observed. The Naval Regulations, however, give explicit orders for the use of this flag when the President visits a ship of war. At the moment when he steps upon the deck the flag is displayed at the main, and is kept flying there as long as he is on board. A National salute is fired immediately after the flag-raising. When the President leaves the ship there is another salute, and the flag is hauled down at the firing of the last gun. Any ship of war flying the President's flag is regarded as the senior ship present, and her motions are followed accordingly. When she meets at sea or in harbor any other United States ships of war, the latter fire the National salute in her honor, and the same ceremony is observed by all Naval batteries which she passes.

The flag of the Secretary of the Navy is displayed at the main during the time that the Secretary remains on board of any war vessel. There has not yet been any occasion for the use of the new flag of the Secretary of War, but, like the others, its display will indicate the presence of the Secretary either afloat or ashore.

# *THE FUTURE OF THE GARDEN.*

## PLANS PROPOSED TO SAVE THE GREAT MADISON SQUARE ARENA.

### STANFORD WHITE'S VIEWS AS TO THE CITY'S NEED OF SUCH A PLACE—WHAT OTHER ARCHITECTS SAY.

Ever since it has become known that the stockholders of the Madison Square Garden have authorized the president of the corporation, F. K. Sturgis, and James C. Young, the secretary, to dispose of the property at public or private sale, there has been much speculation as to what would be the ultimate fate of the vast building. For years it has been the scene of great meetings and exhibitions, which could not have taken place in any other inclosure with the same success that attended them in the Garden, and the place has become in many respects a feature of the city. The annual horse and bench shows, athletic tournaments, races and circus performances have attracted hundreds of thousands of people to the building, and many of those persons who saw it only when it swarmed with humanity are at a loss for the reason why the corporation should wish to abandon the property. But, despite the large attendance in the great arena, the Garden has been a financial failure.

The indebtedness of the company consists of bonds secured by a first mortgage, due November 1, 1919, $1,250,000; bonds secured by a second mortgage, due November 1, 1920, $750,000; taxes, about $80,000, and interest, due May 1. To meet all these demands the company has only about $10,000, and there seems to be good reason for its desire to realize on the building.

All sorts of plans have been proposed by people who would dislike to see the great structure demolished, and, while some of them contained elements of feasibility, others were unworthy of a moment's consideration. "A great department store might be started under the big roof," said one man, "which would eclipse anything in that line that has ever been dreamed of. Of course, it would be too vast for any one concern, but the corporation having the building would rent out stores or departments on the streets which would run through the place. If it could be brought about, the place would be the greatest business establishment in the world, and under one roof could be found anything purchasable. Every trade and profession would be represented."

"Yes," said a less enthusiastic but older listener, "and at the end of the first year you could make a record of more failures than had ever taken place under one roof. For store purposes the Garden will probably never be a good investment, because the shopping district is in another part of the city; and, no matter how vast the store or collection of stores might be, the shoppers would not patronize it sufficiently to make it pay."

Another suggestion was that a series of arcades be built through the building, and that these be made attractive by their style of architecture so that the shopkeepers could afford to pay good rents for the places which they would occupy; but the same arguments which were advanced against the gigantic department store were used in connection with the arcade plan—crowds will go there to see exhibitions and to be amused, but they will not go to that part of the city for merchandise.

Stanford White, of the firm of McKim, Mead & White, who made the plans for the building, and who is one of the principal stockholders, said that the city needed the great arena, and that if the other parts of the building paid as well as the arena there would have been no need for the action which was taken by the stockholders.

"Without the arena," he said, "there would be no place to hold the horse shows and many other gatherings which now take place as regularly as the seasons, and the space should be kept in its present condition. It is the front of the building—the theatre and the Assembly Hall on the Madison-ave. side of the structure—which does not pay. It has been a loss to the corporation for a long time, and, instead of receiving any relief from the city, we have been burdened with taxes." The amount of taxes charged against the stockholders for the year 1896 is about $29,000.

When asked what remedy he would suggest by which the arena might be retained and the front part of the building be made self-sustaining, Mr. White said: "The city needs space such as that on the Madison-ave. side of the Garden, and it should take a long lease of it. An uptown post-office might also be established there. The location is central and easy of access, and no better place could be selected for that purpose. With the front of the building disposed of, the arena would take care of itself, and there would be no danger of losing that large space."

Bruce Price said that he believed that one potent factor in the failure of the Madison-ave. side of the Madison Square Garden was the portico which extends along that side of the Garden and a short distance in Twenty-sixth and Twenty-seventh sts. "These rows of columns, while they are pleasing to the eye," he said, "give the street an alley-like appearance, and that, together with the fact that the entrance to the arena is on the Madison-ave side, made that side unpopular with people who dislike to mingle with large crowds. The first change, and it is one the benefits of which the architects will recognize, should be to make the arena entrance on the Fourth-ave. side. That would relieve the congestion on the Madison-ave. side, and people going to the smaller halls would not be crowded by those who are on their way to a cake walk, a boxing match or a walking contest.

"I agree with Mr. White that the amphitheatre is a necessity, and I believe that the city should own a place like it. The Greater New-York might see fit to do as Vienna and Paris do in such matters, and in that event the amphitheatre would be utilized for public amusement purposes.

"The Madison-ave. side could with slight expense be transformed into halls, in which the art societies might find an adequate shelter and meeting room, and where the public school exercises and similar functions could take place. There the large citizens' committee meetings could be held, and homeless but important temporary organizations could have their meetings. At the present time there are no halls and no meeting places in New-York City which can be procured gratis, no matter how good the cause may be for which they were called together. Either some person or corporation donates the use of the hall, or it is paid for, and in that way much money which had been contributed for charity goes astray.

"When the possibilities of the Garden are being canvassed, the growing musical organizations should be considered, and I am sure that the men who are at the head of the great music classes would want arrangements made for the accommodation of their pupils. If the city once acquired possession of the Madison Square Garden, appropriate uses would soon be found, and the people would be the winners."

Thomas Hastings, of Carrère & Hastings, said that in the matter of changes, alterations or improvements about the Madison Square Garden, no step should be taken without the approval and cooperation of McKim, Mead & White, the architects. With them should rest the decision of the question: "What shall be done with the Garden?" and all propositions from other persons should be submitted to them for consideration. Said Mr. Hastings:

"I agree with Mr. White in what he says as to an uptown postoffice, and as a citizen who knows the needs of New-York in that respect, I would be heartily in favor of that plan, and it seems to me that no better use could be made of the Madison-ave. part. All this I say as a citizen. As an architect, I think it would be unprofessional to discuss the matter."

# *A FROZEN SNAKE FOR A CANE.*

Muncie (Ind.) correspondence of The Indianapolis News.

What was intended for a joke came near ending seriously yesterday afternoon for Dr. Orville L. Boor, a veterinary surgeon, who is treasurer of the Indiana Veterinary Graduates' Association. During a severe cold spell, several days ago, he went to the home of Robert A. Johnson, in the country, on a professional call. While there Mr. Johnson found in the snow a black snake frozen stiff and apparently lifeless. He took the reptile to Dr. Boor and said: "Here is a nice walnut cane, carved in the shape of a snake." Dr. Boor took it gratefully and put it in his buggy without examining it closely, as he was in a hurry. He put up his horse and buggy in McLain's livery stable, and thought no more of his "cane" until yesterday, when he went to his buggy and found a blacksnake coiled on the seat, very angry at being disturbed. His snakeship had thawed out in the warm livery stable, and was apparently as much alive as he ever was. Dr. Boor was frightened and fled precipitately. The snake saw his opportunity and escaped.

# *A BLOODHOUND'S KEEN SCENT.*

From The Kansas City Journal.

A remarkable exhibition of the keenness of scent of the bloodhound was given at the little town of Bronson, in Allen County, the other day. The town recently appropriated $100 out of the city treasury for the purchase of one of these animals, the purpose being the detection and capture of thieves who were operating in the neighborhood, and a test of the hound was considered desirable. At noon three men started out on foot and walked four miles into the country. Then they mounted horses, and by a circuitous route returned to the town. Six hours later the hound was permitted to smell a glove which had been worn by one of the men, and the next instant with a deep howl he caught up the trail and followed it on the run. At one point the men had walked for thirty yards on a fence, and when the hound came to this point he carried his nose along the rail with hardly any reduction of speed. Coming to the place where the men had mounted he took up the trail of the horses and followed it into town, where, in a crowd of more than 100 men, he picked out the one whose glove had been given him to smell.