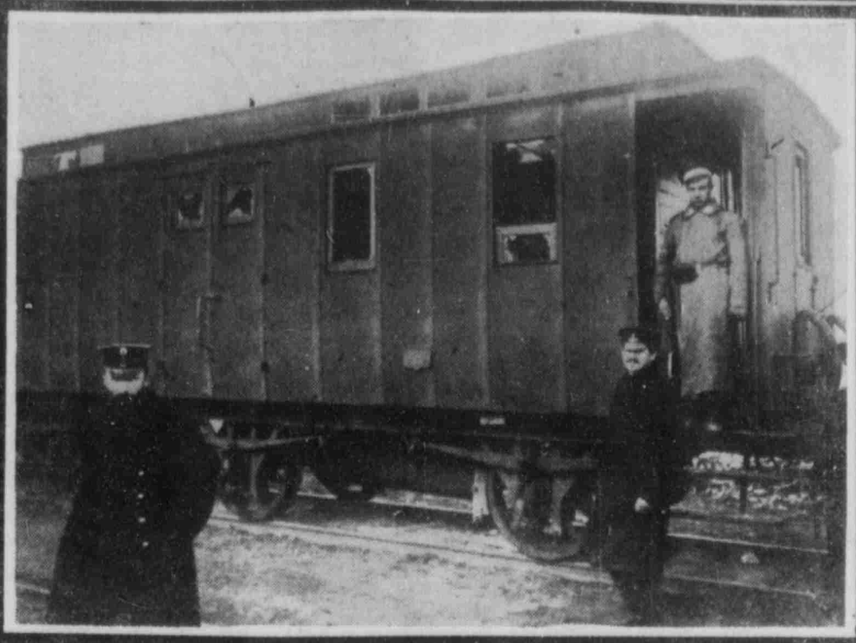
The Saturday "News" Special Foreign Service.

Gustave Laudet

Wrecked By Boy Bandits.
Ten Youths of Lapy in White Russia Blew Up This Train, By Means of Home Made Bombs



George Laudet

"The Star Spangled Banner" to be Sung By Fireworks.

Special Correspondence.

PARIS, Dec. 30.—If the hopes of Georges and Gustave Laudet, two French savants, are realized the world at large will soon be introduced to several startling sensations. For instance we are confidently promised, as the result of their remarkable discoveries in word photography and the reproduction of the human voice by means of explosives, that we shall shortly listen to rockets which, as they shoot into the air and light up the skies by the brilliant colors, will sing "The Star Spangled Banner" or "Yankee Doodle." Another result, it is said, will be the disappearance of all local defects in speech, including, of course, the American twang, and hastening the coming of the millennium when the Yankee will be able to make himself understood to a Cockney without the aid of an interpreter learned in the vernacular of each.

In days to come, the discovery will develop out of all recognition, as an electioneering agent, the gramophone of which Messrs. Taft and Bryan have made such effective use during the past few months. Speeches will then be communicated to mighty crowds far beyond the reach of the voice of even the "silver-tongued orator." Applied to the petard it will warn a train that "the line is blocked;" detonating fuses under the action of heat can inform a caretaker that a fire has broken out in a distant part of the premises he has been set to watch; and finally, the speaking explosive might conceivably be used in warfare as a word of command.

VOICES REPRODUCED.

Georges Laudet's first discovery with regard to the reconstruction of sound was in 1903 and was obtained by the combustion of detonating gaseous mixtures. A detonating gaseous mixture is burned in a special burner, the portions in a state of combustion being constantly proportional to the curves representing the sounds spoken into the apparatus. The gas, as it burns, reproduces faithfully the sounds uttered. Those results are contained by the aid of special apparatus and were communicated in 1905 to the Academy of Science. The invention reproduces all sounds, of whatever nature they may be, whether sung or spoken, with an intensity equal to eight or ten times that of ordinary speech. This intensity, as also the power of the apparatus, may be magnified by increasing the pressure of the detonating mixture or its composition. The apparatus employed varies according as you wish to magnify the direct voice or reproduce it by taking as the starting point a gramophone or phonograph disc.

For instance, if it is desired to reproduce a speech many times over, it must be registered first of all on a gramophone plate which is then applied to the magnifying apparatus. If, on the other hand, it is merely desired to deliver the speech once, all that is necessary is to speak it directly into the apparatus, which reproduces it, magnified eight to ten-fold without the least deformation.

The invention has already received a practical application. In certain theatres a combination of the cinematograph and gramophone may be seen, in which the actor no longer makes his appearance in dumb show but sings as well. As the gramophone is not powerful enough to be heard all over a hall, Georges Laudet has applied to it his discovery of the reproduction of sounds by detonating gaseous mixtures.

The success thus obtained with regard to detonating gases started the brothers along a fresh path of research. Would it not be possible, they asked themselves, to apply these same principles to the reconstruction of sounds of fireworks and explosions? In order to grapple successfully with this new question, it was first of all indispensable to obtain the curves representing the sounds which they proposed to reconstruct. For some time, therefore, they devoted all their efforts to photographing sonorous vibrations.

HUMAN SPEECH CAUGHT.

They were not the first in the field. Human speech had already been photographed. Dr. Marage had succeeded in photographing it by using microphone currents as a medium, but this medium is very faulty, for it introduces deformations into the curves and thus renders abortive any attempt to secure absolute accuracy. It is impossible to obtain without the niceties and shades of utterance. An illustration of this deformation is found in the imitation which the voice undergoes in speaking over the telephone, especially in the sibilant or hissing consonants, s, ch, z, f. The brothers Laudet have now succeeded in obtaining word photographs by a direct mechanical process, without the microphone. This process is for the present kept secret and only the results obtained have been communicated to the Academy of Science, without any details as to the apparatus, as they contemplate applying it to various industrial purposes.

MARVELOUS PHOTOGRAPHS.

By the aid of their apparatus the Laudets have photographed human speech without the slighest deformation. They have obtained photographs of entire sentences with absolute fidelity. A careful study of the photographs has enabled them to draw some important conclusions regarding the general phenomena of phonation; the mechanism of the formation of vowels and consenants, the influence of pitch, etc.

Their photographs are so sensitive as to show the differences in the articulation of different people, so that it is possible to study the causes of speech deformation and defects. As an illustration of the nicety and precision of the apparatus it may be explained that in certain sentences it is possible to detect the slightest lisp and breath. In Gustave Laudet's own words: "When the mechanical parts which serve as the registering medium are displaced under the action of the sounds by infinitely small quantities, these movements are perfectly reproduced on the photographic plate. Thus we have been able to photograph certain of these vibrations the magnitude of which did not exceed 1-50,000th of a millimetre!"

The Laudets call attention to an important consequence of their observations, although the study of the curves is far from being terminated. "The photographs of vowels a. e. i, o, u, vowels sustained on a particular note, present successive periods identical among themselves," said Gustave Laudet. "Such curves are, however, only obtained in registering songs or slow conversations without intonation.

"The registering of an ordinary conversation, on the other hand, indicates that the successive periods of the curve of any vowel whatever are not identical among themselves. All the time that the vowel is being pronounced, they undergo continual modifications arising from the variation in volume of one or more of the composing harmonics, be it from the disappearance or reappearance of certain of these harmonics.

"In a running conversation the different organs forming and modifying the resonant capacities are constantly in movement; the result is their continual modification, whence arises also an equally continual variation of the harmonics.

"As an illustration, we have taken from a phrase at random a word of two syllables and have considerably enlarged it; the delicacy of our tracings has allowed us to reduce considerably the horizontal scale, so as to render more apparent these continual modifications of vowels, the reappearance of accessory sounds and of different harmonics which have become graphically visible.

"The curves of sound thus registered will render it possible to analyse more easily the phenomena of phonation both from the physiological point of view, as well as from the mathematical".

SERVICE TO TEACHERS.

One of the immediate results of this discovery will be the services it can render to professors of diction and to specialists when called upon to diagnose diseases, malformations and peculiarities of the organs of the mouth and throat. In correcting peculiarities of pronunciation, such, for instance, as those of a Frenchman from the south of France, of a Breton, of an Alsatian, as compared with the recognized standard; or those of an Irishman or Scotchman as compared with the standard of pure English; the professor of diction will find his task greatly facilitated by being able to confront his pupils with the photographic proof of the peculiarities he seeks to correct.

The success which has attended their efforts along this line of research has been so decisive that the problem of the reconstruction of sound by means of fireworks and explosive matter is now assured and will shortly form the subject of a fresh and sensational communication to the Academy of Science.

I have endeavored to sketch in the foregoing suggestions some of the uses to which Messrs. Laudet think of applying their invention.

Physiologists and physicists will certainly make use of Messrs. Laudets' discoveries in the registration of speech and sound either for the confirmation or the modification of their theories. Take, for instance, Helmholtz's theories on phonation. According to Helmholtz each vowel is characterized by one or more fundamental harmonics independent of the pitch on which the vowel has been emitted. The investigations which Messrs. Laudet have made into this theory by the aid of their photographs justify them in disputing its accuracy.

MANUFACTURERS ALERT.

It is, however, especially manufacturers and tradesmen who are watching these discoveries with interest, for the application of them to industry bids fair to furnish them with fresh outlets for their commercial activity.

Georges and Gustave Laudet seemed predestined to become inventors, for their father, George Laudet, was a mechanical engineer of considerable reputation. Among his numerous inventions was that of the steam crane in 1850. Ten years later, he invented a machine for extracting huge blocks of stone from quarries and reducing them automatically to paving stones. Numerous models of his various inventions are still exhibited at the Conservatoire National des Arts et Metiers in Paris.

M. Georges Laudet, his son, became a civil engineer, and devoted himself above all to the study of electricity and mechanics. For the last eight years he has specialized in acoustics, seeking to reconstruct and amplify sound. The results he has obtained in that relatively short space of time are truly astonishing.

PUPIL OF PROF. CURIE.

M. Gustave Laudet is also an engineer, of the School of Physics and Chemistry, where he was a pupil of Prof. Curie, whose name is for ever connected with radium and whose tragic death is still in every one's memory. Curie was worshipped by his pupils who looked upon him as a dear friend rather than as a professor. A little anecdote illustrative of this great scientist's modesty is too good to be omitted here. "At a time when the whole civilized world was ringing with Curie's fame," said M. Gustave Laudet to me, "I met him one Sunday up by the Avenue de l'Observatorie. He was wheeling the perambulator in which was his first born baby and his wife was hanging on his arm. They looked just like a couple of bourgeois out for their Sunday walk." Mme. Curie, whose modesty equals that of her husband, has taken the lamented professor's place at the College de France and is carrying on his work of research.

CHARLES DUBOIS.

THE CHILD CRIMINALS OF RUSSIA BECOME A NATIONAL PERIL

Alarming Increase in Infantile Crime and Immorality in the Land of the White Father Has at Last Aroused the Authorities Into Tardy Investigation.

Special Correspondence.

ST. PETERSBURG, Dec. 28.—"Russia's cancerous spot," infant crime and immorality, just now is attracting a great deal of attention throughout the country. Governors of provinces, professors and police masters are holding meetings where the state of the growing generation is considered, and stringent methods are being taken to stop the appalling growth of child crime, which has become the curse of the land. The children of the poor have flocked into the criminal ranks to such an extent that 75 per cent of the crimes recorded within the last year have been committed by boys and girls between 16 and 20 years of age, while those of the better-to-do classes, though they do not rob on murder for plunder, throw bombs, indulge in terrible revenges and give way to various inclinations which are worse even than those of their poorer brothers and sisters. Whereas the first category crowd the prisons, the second flock to gambling dens and kindred resorts to an extent probably unheard of in other countries and certainly unknown in Russia a decade ago.

It is enough to cast a glance at the daily papers published in Russia to see to what a pitch the raiding of trains, banks, shops, etc., by young boys and girls has grown. The officers who sit at court martial affirm that, out of every 100 prisoners brought up for trial, less than a dozen are more than 20 years of age. The rest are boys and girls who, in more civilized countries, would be at school or apprenticed to some trade. A good half of them are sentenced to death for plunder and murder, or sent to Siberia for 20 years. The rest are set free again, and often re-appear, in a few month's time, charged with some fresh crime.

LACK OF SCHOOLS.

The reasons for this terrible state of affairs are not hard to find. It is due partly to the lack of schools and partly to the parents and the public indifference. A poor man in Russia is not encouraged to have his child educated. In fact, it has been the government's policy to keep him as ignorant as possible. From the time he is able to walk the child has the run of the streets and his parents teach him to beg. The beggars in Russian towns are so numerous and importunate that in many places the only way to get rid of them is to get in a cab or board a tram. At every railway station they besiege the carriages and worry the passengers till somebody throws a handful of coppers to get rid of them.

In the majority of cases the beggars are not victims of real destitution. Offer them work and they will not take it. When there is nobody to beg from they steal. Petty theft and pilfering exist everywhere; but they are carried to a high art in Russia.

JUVENILE FUEL THIEVES.

A familiar instance of this is to be seen where a public street is being repaired. Small boys and girls are to be met carrying bundles of brand new wooden blocks that they have stolen. By the section of the road under repair they swarm like flies round a honey pot. Nobody takes any notice of them, least of all the workmen. They run up openly to the stacks of wood, take as many as they can carry and run home to return for more. The public who pass look on indifferently; it is not their business. The overseers look the other way; they do not pay for the wood, so it does not matter. It occurs to nobody that this is a question of public interest. And so the children are encouraged to steal. The same thing happens at the coal depots. It is computed that fifty per cent, of the coal brought into the towns is stolen before the trucks have been in the station 24 hours by children whose ages range from six to 12.

"LIVE BY THE KNIFE."

When the Russian children reach the age of 12 they begin to learn how to us knives, which are as universal in Russia as the stiletto is in Italy. Ninety per cent, of the offspring of the working classes learn no trade. Literally they "live by the knife." Stabbing is so frequent that quiet unarmed people avoid walking in back streets after dusk. It is not uncommon for a woman to be stabbed in the back while passing through a crowded street. The culprit is, of course, a young "knifer" who is learning to stab. Frequently, if caught, he can give no reason for his crime but a desire for practise.

CHILD HOLDUPS.

In some towns the knife has been discarded for revolvers, given to them by revolutionary adherents, who collect their funds in England and America. These men used boys and girls to murder policemen and officials; now the boy and girls use the weapons on their own account. There is little doubt that the Revolutionaries are much to blame for the tremendous increase of child criminals. When their funds run short they used to raid shops and banks. They would send a girl of 10 or 12 first. She entered the building unsuspected and, pulling a revolver from under her shawl, fired. Her accomplices then rushed in, taking advantage of the panic and confusion, and raided the safes and tills. Now that the Revolutionaries have been silenced the boys and girls raid alone. The girl invariably is sent first, in order to disarm suspicion, and the band of infant marauders act in the same way as the Revolutionaries did before them. They rush up to those in the shop, fire or put revolvers to the head of their victims, while the accomplices grab the booty and decamp. As nobody cares to fire at a child the raid generally succeeds.

DESPERATE CRIMINALS.

These young criminals are inferior to their elders in their methods of escape and in getting rid of incriminating evidence. They generally leave some clue that speedily puts the police upon their track. One boy of 14 who helped to raid a country house—shooting the squire and his wife—carried off the dead man's fowling piece and tried to sell it a few days later at a fair held in the neighboring town. A laborer from the squire's estate, to whom it was offered, recognized it and had the boy arrested. The whole band was rounded up, and the eldest proved to be no more than 19 years old.

In another case a youthful bandit having stolen a gold watch from the body of a rich farmer he had murdered, immediately tried to pawn it at the nearest town. The pawnbroker, struck by the quality of the workmanship, sent for the police, who searched the boy's room and found proofs that he had taken part in six desperate raids committed in the neighborhood.

MADE THEIR OWN BOMBS.

What these young criminals lack in circumspection, however, they make up in intrepidity. It seems almost incredible that 10 boys whose ages ranged from 10 to 16 should wreck a train loaded with soldiers. Yet this happened a short time ago near a station called Lapy, in White Russia. They put 12 bombs on the line just before the train was scheduled to pass. Some of them were faulty, and so only four exploded, injuring several soldiers and killing the engine driver. As the train, like the majority of trains in Russia, was going very slowly, the results were less disastrous than might have been expected. The bomb throwers watched the explosion from the forest adjoining the plant and fired with revolvers. So soon as the train was stopped the youthful wreckers were followed and arrested. Each of them had a bomb tied to a stick he was carrying. They confessed to having made the bombs themselves with old sardine tins, a little nitro-glycerine and some bits of iron. The police have now issued orders forbidding the sale of nitro-glycerine to customers unless mixed with some other ingredient that renders it non-explosive.

KILLED BY BOYS.

Perhaps the most callous case of crime committed by children occurred in Warsaw in the beginning of September last. A head-waiter, who had charge of the beer boys, or picools, in a well known restaurant, was found terribly mutilated at the foot of some steps leading down to the river. As he was treasurer of the waiters' charity fund the police supposed that he had been murdered for the money he was carrying home that evening. But his money was found untouched. An eye-witness of the crime, who had run away to save his own life, told the police that the waiter, Owczak by name, was set upon by half a dozen small boys, who stabbed him with their knives. It developed that they were the piccolos employed in the restaurant. Owczak, a man of excellent character, had complained several times of the piccols' laziness and impertinence to customers and threatened to have the most troublesome one dismissed if things did not improve. Thereupon the piccols held a meeting, at which they determined, as they said, to "uphold their honor" and punish Owczak. They followed him home and killed him. When questioned about the crime they admitted it, saying that "brotherly solidarity compelled their revenge, as Owczak had no right to dismiss one of them, since all were equal." The eldest of them was 16. The most appalling part of the story is that all these children planned the murder together and no one was found among them who had enough conscience to tell the authorities or to warn Owczak of the fate which awaited him.

CHILDREN'S VENDETTA.

A somewhat similar case of revenge occurred in the Caucasus recently. There the people scarcely ever think of taking their grievances to a tribunal; all disputes are settled privately—by means of the knife. But even in the Caucasus vendetta used to be left to grown-up men and women. Now the children indulge in it. A well-to-do peasant was murdered by his neighbor. Several of the dead man's family were mere children, and among them was his younger sister, a girl of 10. She called all the children of the village together and asked what was to be done to avenge her brother. All of them said that one of the murderer's family must be sacrificed. So they set out together and began to play by the murderer's hut. Nobody took any notice of them, and little by little the 10-year-old child ran into the hut, saw the father of her brother's murderer asleep and, creeping up to him, plunged a knife deep into his throat. Then she and her companions dragged the dead body to the threshold of the hut, where it lay till the family came back from their work in the fields. When arrested, she said it was her duty to avenge her brother, and that, if anything happened to her, all her playmates had promised she would be avenged in the same way. The authorities are at a loss as to how they are to treat such a childish murderess, as the law prescribes 20 years in Siberia for adults, and there are no reformatories in Russia.

INCREASE IN IMMORALITY.

Three of the children who took part in the train wrecking at Lapy were the sons of well-to-do parents, one of an engineer and the other of a doctor. This means that they had not been brought up in the streets, but received some kind of training at home and in school. That this training is getting worse and worse is proved by the appalling increase in immorality among schoolboys and girls in Russian towns. It is this fact that has finally stirred the governors of provinces to action.

The average Russian teacher takes no interest whatever in his pupils after school hours. Where they go and what they do concerns him not. As he often takes boarders—whose parents live some distance from the school—it is easy to understand that 50 per cent of the schoolchildren are left entirely alone as soon as their lesson books are shut for the day. Towns are few and far between, so the homes of the majority of the pupils are miles away.

Whether the commissions lately convened by the governors of provinces will do any good is a matter of doubt. The root of the evil lies in the school system; in the lack of institutions for watching and providing for children who have no parents to do so, and in the absence of proper home training. Until these wants are supplied all the police orders in the world will not prevent the terrible increase in infantile crime, which is at last occupying the attention of all those who take the trouble to think in Russia. Meanwhile, the prisons are filled with children, and the growing generation is ruined, physically and mentally, before it leaves the school room for the world.

MARIE FILON.

Guests of the Ambassador's Daughter Relegated to Garret.

Special Correspondence.

LONDON, Dec. 31.—It was a case of either letting the magnificent sport on the Chilton estate go this season or arriving at some decision whereby sportsmen could be housed under difficulties. The Hon. Mrs. John Ward, nee Jean Reid, tackled the problem and managed to put up her friends in the story under the roof at her newly acquired home. For the beautiful "Lodge" is in the hands of builders and decorators notwithstanding the fact that the late tenant had just spent $75,000 upon it.

The guests, who included the Duke of Roxburghe, Mr. Ward's sister, Lady Wolverton and her husband, said they never enjoyed a visit more and made very light of the inconveniences which were naturally attendant on the condition of the establishment. Although they were housed in the garrets, the rooms were comfortable, the chief drawback being that they had to use the servants' stairs, the front ones being full of the scaffolding of the workmen.

Chilton has been bought outright and some fix the sum paid for it at $500,000. It is a wedding gift from Mrs. Ward's parents, she having had the choice of either a country or a town house. The shooting on the estate is some of the finest in England.

It is an immense house with scores of bedrooms so that when the mansion is finished, Mrs. Ward will have her heart's desire, namely, be able to entertain big parties of her friends at one time. It is built in Georgian style, a period when architects had such a capacity for getting atmosphere and space into their work together with solid comfort which has never been equalled in the more artistic periods since. There is a splendid picture gallery at Chilton which will, in time, no doubt be filled with works of art. It has precious and priceless stained glass windows and is panelled in beautiful old mahogany.

SUMPTUOUS BELLE.

No one expressed the least surprise at the announcement of the engagement of Lord Granard and Beatrice Mills, "the magnificent Beatrice," as we all call her here, save a few noted Irish belles who in spite of definite knowledge to the effect that Granard intended to hang up his hat at the home of the Ogden Mills, insisted that he would yet marry a girl of his own country. "Beatrice is over-dressed," said the Irish belles. "Beatrice looks as if she was advertising a jeweler's shop. Granard, like every man hates and detests an over-dressed woman." So on and so on.

Miss Mills has certainly been the most sumptuously attired young girl who has ever appeared at Dorchester House balls, and that is saying a lot. Many a time she has cut out even American duchesses in the glory of her jewels. It was said that Lord Granard once remonstrated with her on her love of jewelry, but that she laughed him to scorn and, in a lady-like way, said something which spelt "mind your own business." Probably the knowing young minx realized that this was about the best way she could go about bringing him up to the point. He is one of the men, for, of course, he is a great parti, who has been satiated with attentions from all sides. A man in his position could practically marry anyone! It was Beatrice's "cheeky" manners and independence which did the trick. Like every other American belle who has married into the British aristocracy, she refused him at first, realizing that this would for a dead "cert" make him all the more determined to get her.

But what religion is she? There's the rub. If my memory serves me rightly she is not a Roman Catholic and there will be ructions in Ireland as well as in other quarters if Lord Granard's wife is not.

As the wife of a lord-in-waiting to the king, the future Lady Granard will have two magnificent royal carriages at her disposal with servants who are privileged to wear the royal liveries. On state occasions, such as courts and balls, the carriage of the lord-in-waiting has the right to take precedence of all others after those of royalty.

Mr. and Mrs. McCormick Goodhart are spending the holidays at Boughton, their beautiful seat in "the garden of England," as we like to call Kent which many people consider the loveliest county in England. The McCormick Goodharts recently celebrated their golden wedding at their town house in Eaton square with true American generosity and now the event is to be observed with far more eclat at their country seat, all the poor people and their children as well as the county families having been invited to come and make merry in honor of the occasion. Mrs. McCormick Goodhart is one of the Lady Bountifuls of Kent and she and her husband are immensely popular all around Boughton, although they are but comparatively new people in the neighborhood. The county families are very anxious that they should buy the place, for although the Goodharts are by no means young people they nevertheless have made the whole district lively and have scattered money right royally. Boughton is an exquisite spot with prim old-world gardens, the house being quaintly picturesque and commanding lovely views.

Lady Barrymore, Mrs. Adair's sister, remains far from well. She spent, by her doctor's orders, several weeks lately in Brighton. It was the medico's wish that she should stay at "London-by-the-sea" for the entire winter, but she dashed over the traces and said even if she died she would go home to her lovely Fota, in Ireland, to which she is most passionately devoted. Fota is, as most people know, an island of which Lord and Lady Barrymore are "King" and "queen." Unlike her popular sister, Mrs. Adair, Lady Barrymore cares precious little for society, a peculiarity no doubt she has acquired from her husband who hates it and usually flies to remote parts if possible on the rare occasions when his wife does a little entertaining in London. Nellie Post, Lady Barrymore's daughter of her first marriage, spends most of her time with her lively and charming aunt, Mrs. Adair, for it is not surprising to know that the girl gets bored to death on the Irish island, beautiful though it may be.

All Mrs. James McDonnell's friends here have been greatly grieved to hear of her serious illness in Paris. She has had to have her eyes operated upon, I hear, and has had a most trying time. This coming on the top of her husband's long illness makes matters worse. Mrs. McDonnell has been saying that "money is such a poor thing if you are very ill," and that "it won't buy health." The McDonnells have truly proof positive of this, for James McDonnell has searched the world almost to recover his, and though somewhat better never expects to be strong.

"HEN LUNCHEONS."

Some of the jolliest parties in London are given by Mrs. James McDonnell at her lovely house in Cadogan square. It was she who first introduced us to "hen luncheons" and the season before last they were quite a feature and smart English women as well as American, fought to be invited—in fact, if you could not say you had been to one of these gatherings you were regarded as a nobody. Last season she did practically nothing owing to her husband's ill-health. It is feared it will be many a day before the McDonnell's hospitable house in London is again opened. Meanwhile the blinds are all drawn. It is one of the houses which are never let to strangers, the McDonnells considering their beautiful things far too sacred and precious to be delivered into the hands of strangers. According to present arrangements the McDonnells are not expected back in London until the late spring. Mr. McDonnell's health of late precluding absolutely any possibility of their spending any part of the cold weather in town.

LADY MARY.