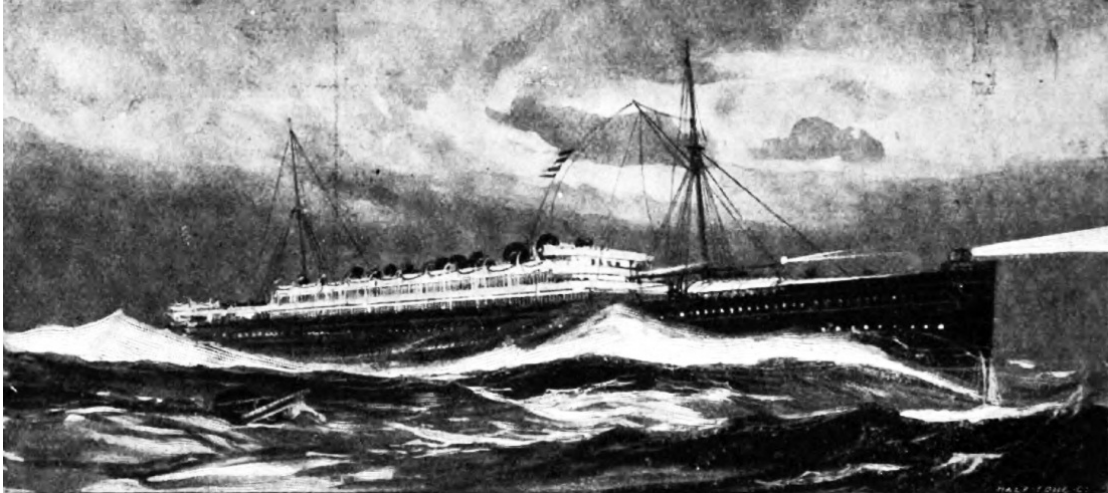


The Most Striking Of New Inventions

LIFE IN OUR NEW CENTURY



by **W. J. Wintle**

(originally published in *Harmsworth Magazine*, January, 1901)

IN THIS age of progress no one will dispute that the twentieth century, on which we have now entered, will see marvellous advances and improvements on every hand.

To try to peep into the future is the work of the seer or the prophet, and we make no claim to be either the one or the other. But there are certain tendencies of modern progress and discovery which will become translated into actual facts within a very few years, and it needs no prophet to forecast what these will be.

In the present article we shall indulge in no imaginative speculation, but shall restrict ourselves to the task of recording various wonders that have already been accomplished in the laboratory, and that only await further development and testing to be introduced to the world.

The man of the twentieth century will no longer confine his travels to land and sea--he will navigate the air as well. It is beyond question that the flying-machine will soon become a practical reality.

Already the experiments of Count Zeppelin and others have proved that a balloon can be navigated and can be propelled against the wind. The trial voyages of balloonists from Paris last October marked an epoch in the history of aerial navigation. The aeronaut is no longer at the mercy of every passing gust of wind.

Travelling by a steering-balloon, however, has its limitations. It is obvious that the voyager is dependent upon his supply of gas holding out, and experience has shown that with every precaution a very serious leakage takes place. The flying-machine of the future will need to be to a large extent independent of contained gas.

Experiments in this direction have been made by several inventors, but it was Mr. Hiram S. Maxim, whose name is so well known in connection with the Maxim gun, who first succeeded in making a machine that would actually raise itself from the ground and fly.

Everyone knows that a kite, or, indeed, any light article presenting a large horizontal surface, such as a piece of cardboard, can be supported by the wind if it can only be kept facing it. This is the principle of the aeroplane flying-machine, designed by Mr. Maxim, in which 4,000 square feet of lifting surface were presented to the wind.

A small engine of high power but light weight drove the propellers, and the whole affair, including three passengers, weighed almost 8,000 lbs. Experiments proved that when this machine was driven along rails at a good speed it rose from the ground and exhibited a lifting power of 10,000 lbs. It was not tested at full speed, or it would doubtless have been seen to possess a still greater lifting power.



The Coming of the airship will necessitate roof stations. This is our artist's suggestion for one at the Mansion House Corner, London.



The flyinh machine of the future will probably be based upon the structure of a flying bird, the louvres in the wings corresponding to the action of the bird's feathers.

There can be little doubt that the successful flying-machine will be constructed on the principle of the flying bird. After all, nature has shown us how to fly, and it only remains for us to copy her methods. Our artist has drawn a machine on these lines, the louvres in the wings being designed to act in much the same way as the large feathers of a bird. We present this idea gratis to the capitalist in search of some pleasant way of getting rid of a little superfluous cash!

On land, also, the twentieth century will see great advances in the way of locomotion. It is now an established fact that a suitably designed electric car can be safely run at a speed of 120 miles an hour on the monorail system, and such a line will shortly be constructed in England. At present it does not appear possible to go any faster than this with safety, but, no doubt, greater things will be achieved in the future.

The motor car is already a familiar sight, and there can be no question that, before the centur is

far advanced, automobiles will be the usual, rather than the exceptional, vehicles seen in our streets. But there is no reason to suppose that they will altogether supersede the horse, nor is that useful quadruped likely to be relegated to a paddock in the Zoological Gardens.

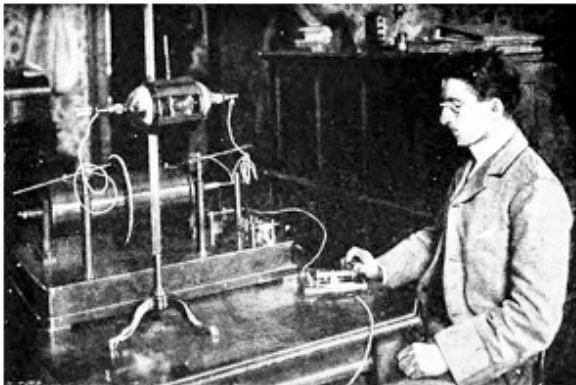
The ocean greyhound of the present day will be quite eclipsed by the rapid ships of the future. The latest step in advance is seen in the adoption of the turbine propeller for steamship purposes. Quite a sensation has been caused in nautical circles by the performances of H.M.S. *Viper*, which travels at the rate of forty-three miles an hour.

This extraordinary speed has been obtained by fitting her with steam turbines (page 538).

Up to the present no passenger ship has been fitted on this principle, but such an ocean liner has been designed, and it is contemplated to fit some of the future Channel packets with turbines.

There seems to be no reason why in ten years' time we should not be crossing the Atlantic at a pace of forty miles an hour, or even more.

The new method not only vastly increases the speed but reduces the size and weight of the engines, practically annihilates vibration, and economises fuel.



The clerk in the office presses the button, and by means of pocket telegraphy----



Mr. Rosenberg, the inventor of the system, receives the message in his private house.

The last point is one of vital importance, for the fastest liners of the present day carry 2,500 tons of coal for a trip across the Atlantic. A greater speed would mean more coal, and this would increase the size of the vessel to an impracticable extent. Probably the twentieth century will see liquid air used in marine engines instead of steam, and then this difficulty will be overcome.

We have already indicated electricity as the great power of the future, and it is from this source that the greatest wonders may be expected. The discovery of the Hertzian waves--which are really a kind of invisible light—and the transmission of telegraphic messages without wires have marked an enormous stride in advance.

Mr. A. Rosenberg, one of the most brilliant electricians of the day, has invented a system of pocket telegraphy, by means of which a man may carry his own apparatus in his pocket and receive messages even from people who do not know where he is.

The inventor takes his small receiver with him when he goes out to lunch, and places it beside him on the restaurant table. If his clerks need him they simply depress a key connected with the transmitter in the office, and the bell of the receiver in the restaurant at once rings.

This can be done in open country over a space of six miles, but in a town, with so much metal

and waste electricity about, the range is much more limited.

The illustration below, taken from a photograph, shows Mr. Rosenberg in his private residence, actually receiving a message from his clerks at the office.

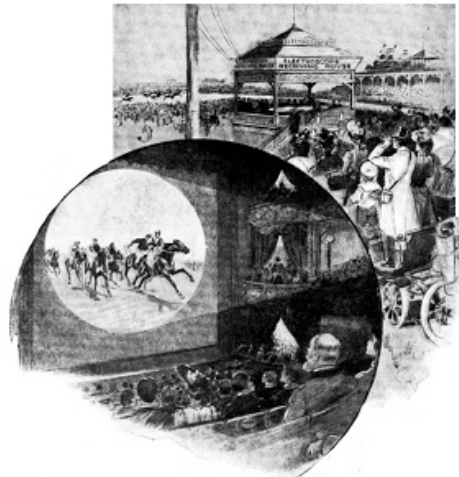
This inventor has also made it possible to watch a scene at a distance of hundreds of miles. By the use of the electroscope it will be possible for busy men, who cannot attend the races, to simply call at the nearest theatre at the right time and witness the race being run, as here shown.

The same contrivance can be adapted to private use, and the invalid confined to his room will be able not only to enjoy the scenery of the mountains and sea, but also to witness a review at Aldershot, or anything else that may be happening.

Not only can we in London hear our friends talking in Paris by means of the telephone, but the telautograph has now made it possible to transmit autograph handwriting or drawings. By a simple but very ingenious mechanism the writing done on the transmitter in London is simultaneously reproduced in exact facsimile by the receiver--say in Leeds.



By means of the telec-troscope we shall not only be able to listen to the distant orator but shall watch his actions as well.



The electroscope will be connected with the London theatres, which will enable us to watch the races while they are being run--the theatres being specially opened for that purpose.

Thus a business transaction can be done in writing without the loss of time involved in sending a letter through the post. Similarly an artist can send his sketch of any event to a newspaper as quickly as the reporter can transmit his "copy". This will be one of the commonplaces of the twentieth century.

Before leaving the subject of electricity we must note that Mr. Rosenberg has devised an entirely new system of electric lighting, which will dispense with all wires and connections. A series of vacuum tubes arranged on the ceiling or walls of a room give out a diffused, lambent light as long as a small coil, which may be in another part of the house, is in action. The new century will not be very old when this system becomes widely adopted.

Turning now to the sometimes necessary, but always deplorable, art of war, there is little doubt that improvements in the range of guns will more and more tend to make it impossible. A gun has lately been invented which will fire over 3,000 shots per minute with a muzzle velocity approaching 2,000 feet per second. The shots are impelled without the use of gunpowder or

other explosive, and consequently there is neither noise nor recoil. Electricity is the motive power, and a small oil motor, mounted on a gun carriage, will work several guns.

Another feature of war in the future will be the firing of mines--even guns--means of the Hertzian waves, which require no wires or other contact..

Signals and messages will very probably be sent by the lumiscriptor, an invention which, by means of a pantagraph acting on a blackened glass slide, and a powerful condenser (see next page), reproduces in gigantic lines of fire any message or drawing done by the operator on a small board.

In naval actions the submarine boat will doubtless play a leading part, and it is notable that Mr. Rosenberg has now invented a system by which the crew of the submerged boat can see all that is going on above water.

But the most notable and significant fact of all in connection with naval warfare will be the extermination of the torpedo, which will be rendered worthless by the use of a new projectile that is now occupying the attention of the Admiralties of the great powers. We shall shortly give an account of this new projectile, so we say no more about it now.

How the paper of the future may be edited.



by means of an Electrical Linotype.



It will be possible for the Editor to set his own copy—

By electricity an entire edition of a paper will be printed at the same moment.



Coming lastly to the pen, which is said to be mightier than the sword, we note that journalism will advance by leaps and bounds in the new century. We will not dare to predict what precise forms of "New Journalism" may become fashionable, but there are certain directions, which we may indicate, in which the mechanical production of the newspaper will probably advance.

It is within the bounds not of probability but of practical fact that the editor of the future may set up his paper himself. Seated at a typewriter, or dictating to one, the leading article will be composed, and by an electric connection the depression of the key of the typewriter will depress the corresponding key of an improved linotype machine, and thus the editor will actually set up his article in type.

Or again, by similar means the type may be set in the form of opaque impressions on a sheet of glass. This in turn can be placed upon a pile of suitably prepared sheets of paper, and by sending the X rays through them, by means of powerful Crookes tubes, the whole of the sheets will be simultaneously printed.

This is no mere visionary dream. It is an accomplished fact, and has been successfully used in

printing cards and other small matters.

At the present time another system of printing by electricity, without the use of ink, is **hi** process of development and has already yielded very satisfactory results.

We need hardly point out that the production of newspapers will be much more rapid when these new methods take the place of the present ones.

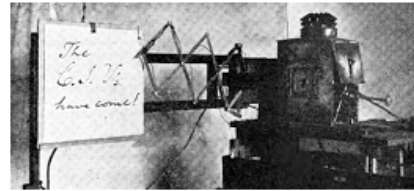
Here, as everywhere else, it will be seen that electricity is the secret of progress. It is not too much to say that as the last century saw the development of steam as the great motive power both on land and sea, so the new century will see steam supplanted to a very large extent by electricity, which will undoubtedly become the great mechanical power of the future.

At the end of the twentieth century the man in the street will read with amused wonder--perhaps mixed with a little contempt--of the slow modes of locomotion, the imperfect lighting, the inadequate telephone system, and the generally unsatisfactory state of affairs prevailing in 1901, and will wonder how his ancestors could have existed with such a lack of the conveniences to which he himself is accustomed.

The commencement of the new century witnesses advance all along the line, and he would be a bold man who should say that we are more than on the threshold of scientific discovery and practical invention.



The telautograph will transmit messages in the actual handwriting of the sender.



The humiscriptor will reproduce in gigantic letters of fire whatever is written on the tablet.

The British Patent Office records some five hundred new inventions every week, and although many of these prove on trial to be impracticable or unremunerative, yet the presence of so much inventive genius in our midst is in itself a most significant sign of the times.

That life in the new century will experience many and great social changes can hardly be doubted, but here it is more difficult to forecast the course of events.

But co-operation and centralisation will more and more tend to control commercial life. The development of "stores" and "universal providers" will probably sweep the small trader out of the field, and then it will be but the next step for the municipality to take over the control.

Shall we advance in the direction of socialism? Who can say? Yet it is pretty certain, that the tendency is for the Imperial Government and the various local and municipal authorities more and more to take charge of the affairs of the individual. The supply of gas, water, and electricity, the provision of dwellings for the artisan classes, the education both of children and adults--these and many other similar matters are no longer left wholly to the enterprise of individuals. To a large extent they are now provided by the State.

It is probable that the new century will see very considerable advance in this direction, though he would be a rash prophet who should predict the complete municipi-palisation of the domestic and business life of the community. and probably a hundred years hence our great-grandchildren will smile as they read about us.

Whether such a development would be for the ultimate good either of the individual or the community is a very complex question, and one not admitting a general answer. Fortunately we are not called upon to discuss the matter here.

Other times bring with them other manners. New modes of life will necessitate a new code of etiquette. The ways of the eighteenth century seem odd to us to-day:

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Will the world be better and happier in the new century? To us it seems that the answer should be unquestionably in the affirmative. Scientific progress tends to moral advancement.

A moment's reflection will show that aerial navigation, rapid transit, the electro-scope, and other inventions that we have named, will all tend to make crime and war more difficult, while improved social conditions will make them less attractive.

The facts we have stated in this article are but a few of the many that might be adduced in evidence of the immense progress in all directions which the new century will witness.