

Elocutionist on Tour

Mr. J. F. Montague

MR. J. F. MONTAGUE, elocutionist, of Auckland, who is to appear at 2YA, 3YA and 4YA under engagement to the Broadcasting Company, is performing at all three stations this week and will be heard on the air on the following dates next week:—

4YA—Monday, January 12.

3YA—Wednesday, January 14.

2YA—Friday, January 16.

On Monday, January 19, Mr. Montague will produce, from 2YA, a great sea play, "Treasure Island," founded on Robert Louis Stevenson's famous book of that name. The presentation will be complete with sea chanties and all the incidental effects.

Book Review

The Magic Carpet

THE beginner who wants to get a thorough elementary knowledge of radio and electricity should find "Wireless, the Modern Magic Carpet" by Ralph Stranger, fills his needs. In a very brief introductory chapter radio on the other side of the world is dealt with, and some of the marvels of wireless touched upon.

Chapter 2 is a very sound one, giving the very basis of magnetism, electricity, matter and energy. This is then carried on and applied to radio, and the components of a radio set are taken separately and fully accounted for.

The book is complete with an excellent chapter on fault finding. Besides this more or less theoretical section there is a concluding one which raises a few of the interesting sidelines on broadcasting. What struck us most forcibly about the book was the very simple and direct manner in which the different points were illustrated. We cannot conceive of anyone, even should he not have the slightest idea of electricity and wireless, having any difficulty in understanding the subject matter treated. It can be obtained from Te Aro Book Depot, Wellington, for 3/- posted.

Trade Notes

THE British General Electric advise that they are bringing out a new series of valves. We have been fortunate in seeing advance information concerning these and have had an opportunity to study their characteristics. Many improvements have been made. In most cases the impedance has been lessened and the slope and amplification factor improved. When details of these valves come to hand listeners will be able to get information directly from the representatives.

KNOW the time all over the world with a

DX Clock.

Printed on Heavy White Paper.

Posted in Cardboard Tube.

9d. Each.

TWO ONE-ACT PLAYS

"For Winter, for Summer" and "Nine Points of the Law"

Will be Presented by

Mr. and Mrs. J. W. Bailey

From 1YA on January 13.

The Mystery of the Atom Liberating Its Hidden Energy

THE fact that two German scientists have been making serious attempts to discover atomic energy is of especial interest to wireless investigators, because the science of wireless is based fundamentally on the behaviour of the atom and its electrons. Hence any attempts which are made to increase our knowledge of these units are likely to affect also the theory and practice of wireless. It will not be out of place, therefore, to relate exactly what atomic energy is and how scientists hope to obtain it. Most people are aware that all matter is composed of tiny units called atoms; a common brick, a star or a human being, all are built up of these tiny and invisible units.

Using the Hidden Energy.

TOWARD the end of last century it was discovered that the atom itself contained still smaller units—namely, the now familiar electron, which appeared to revolve round a more or less stationary unit in the centre of the atom. This has been given the name proton.

The speed of a rifle bullet depends largely upon the charge behind the bullet, and so it must be with the electron—its speed must be the result of some tremendous force inside the atom—the force is certainly not supplied from outside. The discovery of the rapidly-moving electron was the first hint that science received of this so-called atomic energy.

When we use radium we are making use in a mild way of atomic energy, but radium is rare and expensive, so that the only hope of obtaining atomic energy on a large scale is to devise some method of exploding the ordinary atom of matter, when it will discharge its electrons and give us abundant energy in the form of heat.

Uranium is the most likely substance for our purpose, for it is brimful of latent radio-active energy, more so than radium. In addition, there is plenty of it in the world, and if we can explode its atoms in some way or even accelerate their rate of explosion (for uranium atoms do explode, only they take some thousands of years to

do so), then atomic energy will be plentiful.

The Magnetic Method.

THE point is, how are we to explode these ordinary atoms? The two German scientists, Lange and Brasch, hope to accomplish the feat by submitting the atom to a potential of 9 million volts from thunderstorms and atmospheric electricity generally.

The electron and proton are both electrical in nature—they are more electrical than material—the electron being a negative charge and the proton a positive charge of electricity. It is the positive charge of the proton which holds the electron to its orbit, and prevents it from flying off into space like its radio-active brother.

If then, in some way, the electric strain which holds these two together can be broken even for an instant, then the atom will split open, the electron will fly off at thousands of miles per second, and terrific heat will be generated.

And what is more likely to break this electric strain than the terrific potential tapped from a thunderstorm?—so, at least, believe the German scientists. When we consider that there are billions of atoms in any material the size of a pin-head, all containing electrons capable of generating terrific energy, then the extent of atomic energy will be appreciated.

There is also the possibility that the electron in the atom may be torn from the proton by magnetic means, but this has already been tried unsuccessfully in the United States, while the thunderstorm method, with a potential of 9 million volts, has yet to be exploited. However, the magnetic method may again be attempted.

The importance of the experiment to wireless, apart from the world in general, is that whatever happens, some new data concerning the atom and the electron are likely to be forthcoming. Of course, the investigators may even discover that there is no such thing as atomic energy and that the apparent high velocity of electrons inside the atom is not a demonstration of energy, but of something else.

Radio in Denmark

Immensely Popular

ACCORDING to the official figures recently published by the International Broadcasting Union at Geneva, Denmark has more wireless listeners per thousand of its population than any other country in Europe. The actual figure for Denmark is eighty-eight listeners per thousand population.

Sweden takes second place with seventy listeners per thousand and Great Britain comes third with sixty-seven listeners per thousand population.

As a matter of fact, Professor Millikan, of cosmic-ray fame, has stated his disbelief in this energy, although the majority of scientists, such as Lodge, Rutherford, and Soddy, have made positive suggestions regarding it.

Should atomic energy be harnessed, however, it will cause a complete revolution to life on this planet. From the wireless point of view alone, we should be able to dispense with the most costly part of the transmitter or receiver, namely the power supply. The atomic energy in a few pounds of uranium salts is sufficient to run all the motors and generators of a station like Rugby for 20 or 30 years.

All valve filaments would be coated with radio-active deposit, and neither the low tension nor the high-tension batteries would be necessary on the wireless set.

At the same time, atomic energy is not going to be of very much use to us if we have to brave the dangers of tapping a thunderstorm every time we require it. Some very much less difficult and dangerous method will have to be discovered, and the most we can hope for in the meantime is that the various attempts to break into the atom will throw some light on the behaviour of the electron—surely the most elusive and mysterious entity of our time.

**NO UNEMPLOYMENT
IN THIS CAREER!**

There's remunerative employment waiting for qualified wireless men on shore and ship. Johnson's Wireless School takes you up to 1st or 2nd Certificate Examination Standard by easy progressive stages. Write for particulars.

Day and night classes for Proficiency Certificates. Correspondence classes for Proficiency Certificates. Correspondence classes for Amateurs and others.

JOHNSON'S WIRELESS
SCHOOL
St. George's Buildings,
8-10 Brandon Street,
Wellington.



"Radio Record and Electric Home Journal."

12/6 in Advance; 15/- Booked.

BOX 1082, WELLINGTON.