

## ATOMS WITHOUT TEARS—

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calories liberated per gram in the explosion of T.N.T.

On the other hand, the burning of a petrol-air mixture in the cylinder of an automobile engine takes about one-tenth of a second whilst in an explosion of T.N.T. everything is over in only a few millionth parts of a second.

The above chemical transformations involving the release of molecular energy, have several points in common:

- (1) Some energy must be supplied to get the reaction going.
- (2) Once going, the reaction is usually self-sustaining and proceeds to completion, i.e., it is a chain reaction.
- (3) The amount of energy released is of the order of a few thousand calories per gram, i.e., the amount of energy needed to bring to the boiling point an amount of cold water about ten times larger than the amount of fuel used.

These points have a close bearing on the nature of atomic reactions which accompany the release of Atomic Energy.

The idea of an atom as a truly elementary indivisible particle originated with the Greeks.

Towards the beginning of the present century it became quite clear that the atoms of the various chemical elements must possess a complicated internal structure made up of a large number of positive and negative electric charges.

The positive charges are almost invariably connected with comparatively heavy particles known as protons which form the nucleus or kernel of the atom, whilst the negative charges take the form of electrons which revolve at high speeds in a swarm around the nucleus.

At a later date it was discovered that there is another particle of fundamental importance in atomic structure which is similar to the proton in that it has the same mass but differs from it in that it carries no electric charge. This latter particle which has such enormous importance in the initiation of atomic transformations is known as the Neutron.

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## AROUND THE DEPTS.—

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Alf Large is also on vacation. Quite recovered from his accident, Alf is touring the South Coast using Thirroul as headquarters.

Jim Scarfe was observed at Sydney Motor Show, sitting in a De-Luxe Holden. It's now a toss-up between a Morris Oxford and the Holden.—Agents please note.

### FERTILIZER DEPARTMENT

Members of this department would like to know for sure whom it was rode a bike to work from Cardiff and put his head down and charged into a modern car on the Carciff road, doing a fair amount of damage to the car. Could "Darby Carrie" enlighten us? Things like this are likely to do damage to the safety reputation of the department.

Our sympathies go to **George Rockell** who is not enjoying good health, and to **Joe Schmidt**, whose wife is in hospital. We wish both a speedy recovery.

It is pleasing to know that **Norm Mitchell** is up and around again. We hope you will be back soon, Norm.

Our congratulations to **Mr. and Mrs. Allan Davies** on the birth of a very fine daughter—Granddad Danny of the bag shed is blowing of his fine family stock as well as blowing up everything else about the place.

We would suggest that **Jack O'Neill** take a few lessons on handling a hammer. He hits everything and everywhere, including his hands, and does a fair amount of damage, which suggests it was a good idea that his tomahawk was purloined.

Congratulations to the boys in the Mixer, **Sam Skelly**, **Joe McDougall** and **Kalle Muld** who clicked with £400 in the State Lottery recently.

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When the lady who was making out the application came to the little square headed "Age" she didn't hesitate. She simply wrote: Atomic.

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She: "When we're married you'll give up smoking, drinking, going to the club, and what else was it you were thinking of giving up, darling?"

He: "The idea of getting married."