

# English

TEACHER'S BOOK 4

北 京 外 国 语 学 院  
英 语 系 编

商 务 印 书 馆

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# ENGLISH

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# 英 语

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北京外国语学院英语系编

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## Lesson One

### The Discoverer of Radium

#### BACKGROUND

1. Pierre Curie (1859—1906) was a physicist, especially interested in magnetism and electricity. Marie Curie (1867—1934) was a chemist interested in minerals and metals. They married in 1895. At that time Pierre was teaching physics in a technical college at a small salary and devoting all his spare time to his experimental work in physics. Marie decided to take a degree at Paris by doing original work in the science of metals. Late in 1895, however, came the discovery of X-rays by Röntgen in Germany, and this important event led to the discovery of the radioactivity of uranium by Becquerel in Paris in 1896.

The Curies, friends of Becquerel, decided to work together on this new and exciting subject. The new science needed both chemists and physicists. Therefore, Marie being the chemist and Pierre the physicist, they made one of the greatest scientific partnerships ever known.

At first all that was known about radioactivity was that the element uranium gave off energy continuously, and that this energy could electrify the air. Pierre, the expert in physics, found exact ways of measuring this electrification. Marie, as a chemist, experimented to discover if substances other than uranium could also be radioactive. In 1898 they found that thorium, an element similar to uranium, was even more radioactive than uranium. No other element then known had this property. The Curies decided to find out if there were others.

They noted that a mineral called pitchblende, containing uranium but no thorium, was about five times as radioactive as it ought to have been. Marie therefore analyzed some, isolating every substance in it and handing it over to Pierre for testing. Traces of what appeared to be bismuth and barium in the mineral were found to be strongly radioactive. The Curies supposed from this, correctly, that they had discovered small amounts of the two new elements, which resembled bismuth and barium chemically, but which could not be bismuth and barium themselves, for these were known not to be radioactive. The Curies then laboriously and patiently worked up the bismuth and barium residues from many tons of pitchblende, and eventually Marie separated from the bismuth in a pure state a radioactive element which she called polonium (in honour of Poland), and from the barium a radioactive element to which she gave the name radium.

They devoted four years to this research, failing again and again until, in 1902, Marie at last obtained one-tenth of a gram of pure radium. Most of this time Marie was also teaching science in a girls' school near Paris to augment their income.

These discoveries brought them fame. The scientific world is always excited when a new element is found, and radium proved to be the most important discovery of this kind in the previous 60 years.

The Curies continued with their work, and in 1904, along with Becquerel, they were awarded the Nobel Prize in physics, and Pierre was promoted to be professor at the University of Paris. In 1906, however, he was killed in a road accident. Marie succeeded him as professor, the first woman professor at the University of Paris. Later an institute was founded in which she and her assistants could work entirely on radium and its problems. By 1911 her work in radioactivity had been so remarkable that she was again awarded the Nobel Prize, this time unshared.

(The Nobel Prize carries with it not only great honour, but a considerable sum of money which recipients usually devote to the furthering of their work.) Honours came to Marie from many countries. When she visited England, the USA and Poland towards the end of her life she was received like royalty.

(From *Oxford Junior Encyclopedia*, Vol.5)

## 2. Irene and Eve Curie

The Curies had two daughters. The elder, Irene, became a physicist and worked under her mother at the Institute of Radiology. She married Frederic Joliot who was the most brilliant young physicist at the same institute. Joliot added the name Curie to his after his marriage. Irene and Frederic Joliot-Curie worked as a team and did important work in nuclear physics for which they were awarded the Nobel Prize. During the war they joined the French CP and worked in the resistance against the Nazi occupation. After the war Frederic was made head of the French Government's Atomic Energy Commission but was thrown out in 1950 because of his politics. He was President of the World Peace Council. Irene died in 1956.

Eve Curie became a journalist and writer. She wrote a biography of her mother. During World War II she visited Chongqing as a journalist.

## AIDS TO ORAL WORK

1. If the students have read the book *The Story of Marie Curie* by Alice Thorne, they can give more details about Marie Curie's life and work.
2. See textbook, **Oral Work 4**.
  - 1) Marie's father inculcated in her a love for science. Going to Paris to study gave her opportunities she would never have had if she had remained in Russian-occupied Poland.

The main factor for her success was her persistence in face of hardships and failures.

- 2) Radiation in small doses tends to stimulate living cells, and in large doses to destroy them. The cells of some organs respond more readily than others, and diseased or cancerous cells are more sensitive than normal cells. Radiation treatment (called radiotherapy) is effective in certain skin diseases and in some blood disorders, as well as in dealing with cancer cells.

- 3) Some points that might be mentioned — male-dominated society; fewer opportunities for women for higher education; lower expectations and pressure put on women; woman's "place in society" as wife, mother and man's plaything is still widely accepted; women have to work harder than men to reach equality with men.

Are these following arguments true? — Women have a smaller mental capacity than men; women are too emotional and subjective to excel; all that women want are a man and a family.

## DETAILED STUDY OF TEXT

1. **frightened** — *Frightened* and *afraid* have the same meaning, but note that *afraid* cannot be placed before the noun, e.g.

a frightened child

The child is afraid. The child is frightened.

The noise made us afraid.

The noise frightened us. (much better than *made us frightened*)

2. **he barked** — also *the sharp command* and *stalked out*. Note the words used to show the antagonistic, bullying, self-important nature of the inspector.



3. **Her teacher ... looked anxious** — synonym for *anxious*: worried.

Noun form: anxiety, e.g.

He couldn't help feeling anxious as he waited for news of her.

He waited anxiously for news of her.

He was full of anxiety as he waited for news of her.

Don't get anxious if you don't hear from me.

You need have no anxiety about me.

All his cares and anxieties made him look old.

4. **to check up on the others** — here meaning to make sure that all were behaving correctly, i.e., with respect.

Other examples:

Have you checked up on the time the match is to begin?  
(made sure you have it correctly)

We'd better check up on the lecture room before the speaker arrives. (make sure everything is in order)

Similar verb phrases:

*close in on*: Darkness closed in on us.

*drop in on*: He dropped in on us on his way home.

*sit in on*: The new teachers sat in on some classes before they took a class themselves.

*run out on*: Don't run out on us now when we've nearly finished. (desert; leave in the lurch)

5. **Come here, my little soul** — This endearment is not commonly used in English, *my dear* would be more appropriate. But it is a common endearment in Polish and is used here to give a Polish flavour.
6. **the child sank down** — *Sank* is used, not *sat* for more vivid effect; to help create the atmosphere of relief on the departure of the inspector. When you've had a shock or been under great strain, sometimes you feel as if your legs won't support you

and you have to sit down — this you do slowly as if collapsing.  
In this case *sink down* is an appropriate, vivid expression.

**7. burst into tears**

Similar expressions:

tears filled her eyes; her eyes filled with tears; tears started from her eyes (literary); burst out crying.

**8. seeking to spy out** — *Spy, spy out and spy on (upon)* have the sinister meaning of *act as a spy*, e.g.

Every night enemy agents came into the village to spy.

They spied out information by spying on our movements.

There are many familiar nouns such as *spy* which are less commonly used as verbs.

Other examples:

We air our bedclothes every Sunday.

He elbowed his way through the crowd.

Some young people are aping foreigners.

She had a puncture, so had to leave her bike at a friend's and foot it home.

You must not finger the exhibits.

You mustn't touch the football with your hands but you can head it.

**9. seek to do something** — is generally considered literary style.

More examples:

The enemy sought to split the revolutionary ranks.

He sought to merge all the small oil companies and create a monopoly.

**10. bright and dependable**

synonyms for *bright*: clever, intelligent, smart.

opposites: dull, stupid, unintelligent.

*dependable* — trustworthy, reliable.

Similarly: reliable, excusable, breakable, advisable, laughable, manageable.

opposites: undependable, unreliable,  
unexcusable, unbreakable, inadvisable, (none for laughable),  
unmanageable.

11. **as often** — as she often was. *As often* is not very common, but *as usual* and *as always* are.
12. **a professor of physics** — or a physics professor.  
Similarly: a teacher of English (an English teacher), etc.
13. **to love this science** — *Science* can be countable as here, and uncountable, as in: Science is taught in all middle schools. When countable, it refers to a particular branch of science and can be preceded by *this* or *that*.
14. **before his children were grown** — Usually we say *were grown up*.
15. **had difficulties with** — got into trouble with.

More examples:

He has difficulties with his mother-in-law (doesn't get on well with).

She has difficulties at home (many problems, perhaps disagreements with her parents or husband).

16. **middle life** — In the West this is between the ages of 40 and 65.
17. **salary** — In the West workers earn *wages*, usually paid weekly. Professional people, i.e., teachers, lawyers, doctors, enterprise managers earn *salaries*, usually paid monthly. There is quite a class difference between *wage earners* and *salaried workers*.
18. **who had married** — Look up the verb *marry* and note the difference between the action and the state. Be careful not to say *marry with somebody*. This is a common mistake in translating from the Chinese.

Translate from Chinese into English:

How long has she been married?

When did they get married?

Who (Whom) did he marry?

She married her cousin.

He married his daughter to a rich man.

19. **She took a single room** — *Take* here means *rent*.

Other expressions with *take* in the text:

... to *take* a humbler teaching job

Marie had been *taken to* her room.

His eyes *took in* the bare furnishings.

He ... *took her home* ...

*Take care of* the little one, ...

... promising to *take better care* ...

She wanted to *take* not one but two degrees...

His thoughts were so *taken up with* ...

... *from which* uranium had been *taken* ...

Pierre, *what form* do you think it *will take*?

Further expressions with *take*:

to take in (lodgers); to be taken in; to take something into consideration (account); to take after somebody; to take notice of; to take somebody for somebody else; to take it easy; to take matters into one's own hands; to take to something/somebody, etc.

20. **a single room** — a room for one person; a hotel room with a single bed. *A single bed* is for one person, a double bed is a wide bed for two people. Similarly: *a double room*.

*A single person* is one who is unmarried or divorced or widowed, e.g. She remained single all her life.

*A single-parent family* is a family of children with only one parent.

*A single ticket* is for one journey in one direction only (as opposed to a return ticket).

21. **and lived alone** — or *lived by herself*, *lived on her own*. Note the difference between *alone* and *lonely*. Translate from Chinese into English:

He alone knew the answer.

He was not alone in the view that the atom was divisible.

Leave me alone.

I can't do it alone.

22. **was living from hand to mouth** — Guess the meaning. *Hand-to-mouth* is an adjective as in: *a hand-to-mouth existence, a hand-to-mouth job.*

Other idioms with *hand*:

have one's hands full; be close at hand; wash one's hands of something/somebody; take something in hand; hand in hand (hand-in-hand); at first hand; hand in glove; hand and foot, etc.

23. **came on the run** — came as fast as he could. He probably took a cab. The idiom for *to come running* is *to come on the double*.

Other uses of the idiom *on the run*:

She's on the run all day. (She's busy doing one thing after another.)

Once the guerrillas got organized they soon had the enemy on the run. (withdrawing)

24. **the bare furnishings** — *bare*: See Book 3, Lesson 3.

*furnishings*: Note the plural. The furnishings of a room include carpet and curtains as well as furniture (table, chair, bed, etc.).

25. **the makings of a cup of tea** — It is easy to guess the meaning.

Note the plural is always used. Similarly:

The makings of a cigarette (tobacco and paper).

The makings of a dress (all the material needed).

This has the makings of a good speech (the preparatory work shows promise).

He has the makings of a good farmer. (He shows promise.)

26. **Yesterday, then?** — If you can't tell me what you had today, *then* tell me what you had *yesterday*. Similarly:

Wu: Will you help me, Xiao Li?

Li: Sorry, I'm too busy.

Wu: Xiao Zhang, then?

Zhang: I'm too busy, too.

Wu: Who can I ask, then?

27. **bundled her up** — put warm clothes on her; helped her put her coat, hat, scarf on.

*to bundle something up* — wrap up or pack up something quickly and roughly.

28. **a cab** — At this time, i.e., at the beginning of the century, the cab would have been a horse-drawn carriage. Today *cab* is the name used in the USA for a hired car. The full name is *taxicab*. In Britain it is called a *taxi*.

29. **Take care of the little one** — *The little one* is a translation of the French *la petite*. It is not a common English expression. See Note 5. An English brother-in-law might say "Take care of your little sister."

30. **I'm off to get** — A much-used colloquialism. Similarly:

I must be off now. (but you would never say: Must you be off now?)

Where are you off to?

Be off now, and change your clothes.

He went off this morning. (He left.)

The concert went off well. (It was a success.)

We're off on Tuesdays at our factory. (have our rest day)

31. **to get a prescription filled** — He is a doctor and uses medical images for humour's sake.

Other collocations with *prescription*:

write out (make out) a prescription.

have a prescription made up.

32. **steak and fried potatoes** — A favourite, though expensive meal in the West. Steak (pronounced [steik] not [sti:k]) is an expensive part of the cow.

*Fried potatoes*, called *chips* in Britain and *French fried* in the U.S., are potatoes cut into stick-like pieces and fried in deep oil. The

potato, cooked in a variety of ways, is one of the staple foods in the West.

33. **rested and fed** — are past participles, not finite verbs in the past form. Similarly:

She finally reached the village, *drenched and exhausted*.

*Corrected and marked*, the exam papers lay on the teacher's desk ready to be given back to the students.

*Armed with these*, she could return to Poland.

34. **she would ... work side by side with** — Note that *together with* is very rarely used in English. Often *with* is sufficient but *side by side with*, *along with* and *alongside* are also good, e.g.

I went to town with my sister.

Our class, along with Class 3, are going to a factory tomorrow.

The PLA men worked in the fields alongside (side by side with) the commune members.

35. **His life was also devoted to science**

Some expressions with *devote*: devote oneself to sth.; devote sth. to sth. else; be devoted to sth., e.g.

She made up her mind to devote the rest of her life to socialist construction.

He devoted himself to improving the students' pronunciation.

She had been too devoted to science to bother with learning to cook.

Note the meaning of *devote* in the following:

The rest of the chapter is devoted to the growth of the trade unions.

The paper devoted a whole page to the National Sports Meet.

36. **He was so underpaid**

Other compound words with *under*: underfed; undercooked; underpopulated; underdeveloped.

Also: underwear; underground; undergraduate; understatement.

37. **gray** — also spelt *grey*.

38. **delicate features** — Note also *delicate work in the laboratory* in the next-but-one paragraph.

39. **who was as keen on test tubes**

Note three of the meanings of *keen*:

1) enthusiastic about; eager, e.g.

They are keen on learning English.

I'm not keen on sports.

They are keen students.

He is keen on my sister (likes her very much).

2) strong, deep, e.g.

He has a keen interest in the subject.

She has a keen sense of responsibility.

He has a keen desire to become a teacher.

3) sharp, penetrating, quick, e.g.

His keen eyes took in the bare furnishings.

His keen mind took in the situation at once.

She gave them a keen look.

40. **as if she were doing an experiment** Note the subjunctive mood especially in *as if*-clauses in written English.

Further examples:

She looked as if she were fainting.

He talked as if he knew all about it.

They ate greedily as if they had never eaten before.

He rides his bike as if he were the only one on the road.

41. **doing an experiment** — Note the verb.

Also: *conduct* an experiment; *carry out* an experiment.

(Never make an experiment — this is wrong.)

42. **behavior** — The British spelling is *behaviour*.

Similarly: American: color favor honor humor

British: colour favour honour humour



Other words with two spellings:

American: drafty traveled check plow thru woolen

British: draughty travelled cheque plough through woollen

American: center kilometer tire program catalog

British: centre kilometre tyre programme catalogue

Note that *behave*, *behavior* are used with things (e.g. natural phenomena and machines) and animals as well as with human beings, e.g.

Animals behave most peculiarly before an earthquake.

This machine is not behaving properly.

Watch the behaviour of the water when I throw a stone in.

43. **salts of uranium** — Few elements are found in pure form. In the rocks they are usually combined with other elements, often to form salts. Salts of uranium are compounds which contain uranium.

44. **light-giving properties**

*Property* in the singular means something owned, e.g. public (private) property.

*Property* in the plural (sometimes in the singular) means the principal characteristic(s) of a substance.

*Stage properties*, often abbreviated to *props*, are the scenery, stage furnishings, etc. used in the theatre.

45. **to find out the how and why** — English is very free in the conversion of one part of speech to another. Interrogative pronouns, modal verbs, prepositions, adjectives and adverbs can all be used as nouns with, in most cases, the definite article, e.g.

the ins and outs (of a place/matter)

the whereabouts (of somebody/something)

the ups and downs (of life)

the haves and the have-nots

the ifs and buts (of an argument/case)

the good and the bad