

## THE SUN AND THE WEATHER KNOWLEDGE GATHERED AT MOUNT WILSON

When the Temperature of All  
the World Changes

### THINGS STILL UNEXPLAINED

Dr Charles Abbot has scanned the Sun with a measuring lens for thirty years. He tells us it is a variable star.

This belief was first stated by him a quarter of a century ago. Since then he has examined the Sun nearly day by day at Mount Wilson in California, at Arequipa in Peru, at Bassour in Algeria, and more recently in South Africa.

The carefully tabulated results, whether made at sea-level or at heights of 14,000 feet, all confirm the conclusion that there is a variation in the Sun's radiation which may amount to as much as seven per cent.

### Sun-Spots and Pulsation

It appears to be in some ways a regular variation, though there is an irregular one over an interval of ten days. When sun-spots are numerous the variation is high, when they are small or few the Sun changes little. But the longer the Sun's brightness has been examined the more it appears that the Sun slowly pulsates, almost as if it were a living, breathing thing.

As the Sun is the sole source of the temperature of the Earth's atmosphere, it would be natural to suppose that this should vary with the Sun's changes. The connection has been very hard to establish, but now Dr Abbot finds himself able to declare that this change in the air's temperature does occur.

Observations over the last six years show that whenever the Sun's radiation increases to a maximum, for a period of four or five days, and after that decreases again, the temperature of the air as a whole, all over the world, follows it. The alteration in the air's atmosphere begins four days after the alteration in that of the Sun. The amount of difference may be about five degrees Fahrenheit.

### Rising and Falling Temperature

There is one thing which remains unexplained, apart from the fact that the causes of the Sun's variation are unknown. In some months a rise in solar radiation will cause a rising temperature in the Earth's atmosphere; in other months a similar rise will cause a falling temperature.

The Sun's influence therefore sets some mechanism at work in the Earth's atmosphere which is not yet understood. Moreover, a very slight change in what we may call the surface temperature of the Sun often causes a large change in that of the air.

Of the connection between the two things there is no doubt. It remains to observers of the future to explain its working. Dr Abbot himself thinks the key may be found in discovering whether and how far the barometric pressures of the air could be connected with the changes.

When this is done we may be able to forecast the nature and changes of the world's weather, which, when all is considered, must be influenced more by the Sun than by any other single cause.

### THE PENDOGRAPH

Those who enjoy a new toy at Christmas-time will find many hours of interest in the Pendograph, a little device for making designs in coloured sand which grow before our eyes in geometrical perfection. The Pendograph is sold at 1s 6d, post free, by P. K. Arm, 1, Clarence Street, West Belfast.

## Printed Birthday of Words

### DISCOVERIES BY C.N. SEARCHERS

New Facts for the Greatest Book of  
Words in the English-Speaking World

HALF-GUINEAS FOR EXPLORERS OF OUR MOTHER TONGUE

It is now nine months since the C.N. asked its readers to find the age of about twenty words—the earliest date, that is to say, at which they are found in print. The search has revealed some interesting facts.

The words are among those asked for by the makers of the Oxford English Dictionary. It is the desire of the editors of this work to trace every word in the English language to its earliest appearance in print. All over the world patient people are searching for the first use of words to complete this wonderful book.

We asked for the dates of certain words for which the Oxford Dictionary already has one date, and the question was whether the history of the word could be carried farther back. We offered our readers half-a-guinea each for any discovery of an earlier date than the Dictionary date. Below we give a list of the words whose printed history has been carried farther back by our readers; we give side by side the Oxford Dictionary date and the C.N. date.

	O.D.	C.N.
Back number .. ..	1888 ..	1882
Baking powder .. ..	1878 ..	1850
Battleship .. ..	1889 ..	1844
Card index .. ..	1917 ..	1898
Carpet slipper .. ..	1906 ..	1905
Cavalry officer .. ..	1903 ..	1850
Central heating .. ..	1921 ..	1912

A number of our readers have also sent us dates for certain phrases asked for by the editors of the Oxford Dictionary. The discoveries of some of these phrases are extremely interesting. Here are a few of the dates.

	O.D.	C.N.
Away (matches away) ..	1907 ..	1897
Not so bad .. ..	1891 ..	1855
Bats in the belfry .. ..	1927 ..	1922
Full of beans .. ..	1925 ..	1917
Carrier (of disease) .. ..	1910 ..	1900

Below we give the complete list of the discoveries made by our readers, with the examples and where they are found.

**Away.** Used as describing matches played not on the home ground, Away goes back to 1897, when it appeared on a fixture card of the Royal High School Football Club, Edinburgh, in which the matches are classed as Home and Away. The O.D. date was 1907.

**Back number.** We have been able to trace this word to the Boy's Own Paper of Saturday, October 21, 1882, where it appears in Answers to Correspondents on page 48. This is six years earlier than the O.D. date.

**Not so bad.** As far as we know Charles Kingsley must be given the credit for this phrase as meaning fairly good, for it occurs in the second chapter of Westward Ho! written in 1855. "Her song was not so bad," said Sir Richard to Lady Bath. The O.D. date was 1891.

**Baking powder.** We have found several earlier dates than the O.D. date of 1878 for baking powder, one in a book on illness, published in 1870; another in our friend Mrs Beeton, published in 1866; but earliest of all in the third volume of the Family Friend, dated 1850, where Borthwick's and Delport's baking powders are mentioned several times in Answers to Correspondents.

**Bats in the belfry.** We are five years earlier than the Oxford Dictionary with this phrase, which appeared in a short story published in 1922 in the Story Teller. The story was actually called The Bat and Belfry Inn, and in it occurs the sentence "Come and celebrate the end of this bat and belfry sort of management." We find another reference earlier than the O.D. date in the Annual Report of the Royal Cornwall Polytechnic Society for 1924, where "bats in the belfry" is quoted on page 135 in an article by Mr R. Morton Nance.

**Battleship.** Here, if our word is allowed, we beat the Oxford Dictionary (1889) by nearly half a century. Our earliest date is 1844, when the original form of this word occurs twice in a publication of the Religious Tract Society called The Visitor, or Monthly Instructor. On page 392, under the heading Remarkable Preservation, occurs this sentence: "I was inviolated at Madras, and procured a passage in a line-of-battle ship for England." Under the same heading, lower down, the word occurs again in this way: "The line-of-battle ship had foundered at sea, and not a human being of the crew or passengers survived to tell the tale." It seems probable that the word battleship grew out of the old phrase line-of-battle ship.

**Full of beans.** The Oxford Dictionary date for this phrase is 1925; ours is 1917, when it appeared in chapter 5 of a book called Assets of Empire, by R. A. Balburney. We have found another date earlier than the Oxford Dictionary in the first chapter of Mr John Buchan's story The Three Hostages, published in the year 1924.

**Card index.** We ourselves used this phrase in the Harmsworth Self-Educator in 1915, two years before the Oxford Dictionary date, but it appears on page ten of a book on Modern Business Methods, published by Macmillan in 1898.

**Carpet slipper.** Here the Oxford Dictionary date is 1906; ours is 1905, when the word appears in a dictionary of the French and English languages by F. E. A. Gasc, published by George Bell and Sons. Carpet Slipper is there defined as the English equivalent for pantoufle de tapisserie.

**Carrier of disease.** Our earliest date for this word is 1900, ten years before the Oxford Dictionary. It appears on page 89 of a translation of Professor Angelo Celli's book on Malaria, published by Longmans.

**Cash on delivery.** We have not found an earlier date than 1899, the O.D. date for this, but the letters C.O.D. appeared in 1898 on page 138 of Modern Business Methods, published by Macmillan, and the letters are there defined as Collect on Delivery, from which Cash on Delivery may have been derived.

**Cavalry officer.** We beat the O.D. by more than half a century here. Their date is 1903, but G. W. Stevens was four years earlier with it, Davenport Adams used the phrase in 1872, Whyte Melville used it earlier still, and it appeared as long ago as 1850 in Household Words, on page 35 of Volume One.

**Central heating.** The O.D. date is 1921; ours is 1912, when it appeared in the first few pages of a book on Central Station Heating by B. T. Gifford, published by E. and F. Spon. The phrase also comes into Mr Hugh Walpole's novel, The Green Mirror, published in 1918; it is in Book Two, chapter 4, where Philip describes his flat to Katharine.

In connection with these discoveries prizes of half-a-guinea each have been sent to the following C.N. readers:

Mrs Clarke, Altrincham; W. H. Ewart, Holmfirth; Noel Freeman, Southbourne; H. Jenkins, Chester; J. M. Livingstone, Glasgow; Sadie McMurray, Gatehouse, Kirkcudbrightshire; C. Muddle, Thornton Heath; Ethel Pannifer, Weaste.

Half-a-guinea has been sent to the discoverer of every date for a word in our original list, and we shall be glad to extend the offer to another series of words now asked for by the Oxford Dictionary. In the new list of words just published by them the editors of the Dictionary are asking for earlier dates for the following words, and we will

## A BETTER CHANCE FOR CHINESE BABIES

What an English Lady  
Has Done

An experiment in Hang-chow is now a year old, and is a great success.

It was in February last year that the mayor was asked to visit the city orphanage. When he arrived he found a quiet English lady who was going to see the place too. Her name was Sister Bargrove, and he learned that she had had a hospital training.

They went round the orphanage. It was large, but dark, airless, and very dirty. The nurses were ignorant women and many had infectious diseases.

To this dismal place a hundred unwanted babies were sent every month, and none ever left it alive!

No wonder the mayor cried "Take me out of this slaughter-house!"

He had looked on those wasted little faces, heard that low wailing cry of a dying baby, and exclaimed: "It would be better to kill them."

But he did not merely run away from that dismal place. Sister Bargrove was asked to reorganise it, and she leaped at the chance.

Most English babies are brought up today on the principles taught by Sir Truby King, and Sister Bargrove determined that these little orphans should fare as well as English babies. The alterations and equipment were completed. Four trained nurses came from the Hang-chow Hospital, and the baby slaughter-house became almost a garden. In fresh air and sunshine and spotless cleanliness the little orphans flourish today, and a Chinese lady is now matron.

## A HOME FOR LITTLE SLAVES

Pathetic Appeal From  
Yun-Nan-Fu

Sometimes the chivalrous folk of this world are tempted to think a day has come when they can rest from strife. But not yet.

A letter from Yun-Nan-Fu to the Anti-Slavery Society in London reminds us of that. The Chinese writers of the letter asked whether England and America would help to raise £500 in order to run a home for slave children.

They say that the selling of Chinese children is a universal custom, and brings endless misery to the poor little creatures, whose sufferings are not relieved by their being called servants or adopted daughters instead of slaves. The C.N. has often broken a lance in their defence, and has urged the British Government to enforce the law against child slavery in Hong Kong, which the present Government has pledged its honour to abolish.

The senders of the letter we refer to want to start a home for children who have been freed and have nowhere to go. For £500 such a home could be run for three years and many children taught to forget their pitiful past and to learn a trade.

Continued from the previous column

send half-a-guinea to the reader who sends us the earliest date for the following:

Engine stroke ..	1910	Famille rose ..	1903
Eolith .. ..	1896	Fan (in films) ..	1903
Escalator .. ..	1904	Far-flung .. ..	1897
Eye-level .. ..	1902	Mud-slinging ..	1928
Eye-strain .. ..	1906	Multiple shop ..	1909
Fag (cigarette) ..	1888	Museum-piece ..	1920

All dates must reach the Editor before the end of January.

The date is also wanted for the first use of the word Exclusive in the sense in which newspapers use it to describe special news; the present date is 1901. At present the Oxford Dictionary has no date for the word Fade as meaning to darken with age. The date is also wanted for the first use of Ever in the sense of Did you ever!