

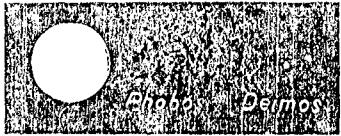
PHOBOS AND DEIMOS

Strange moons of Mars

By the CN Astronomer

MARS has again become the chief celestial attraction of these summer evenings which, owing to the prolonged twilight, are so ill suited to presenting this fascinating planet at its best. Mars is, however, quite obvious, low in the south-east sky, as soon as darkness gathers, which, of course, is now gradually becoming earlier.

Among the many similarities of Mars to the Earth, as described in CN June 5, is the additional one that Mars is blessed with moonlight. The planet possesses two



Relative distances of Mars and his moons, Phobos and Deimos

moons, though together they do not give nearly as much light as our Moon.

They were discovered in 1877 by Professor Hall, at Washington. That they were not discovered earlier is due to the radiance of Mars, for they never appear far from the planet's surface.

They were named Phobos and Deimos, two characters in Homer's Iliad. Phobos, meaning "Flight," was so named because of the great speed with which it travels round Mars in the course of only 7 hours 39 minutes and 13 seconds. During this short period Phobos goes through all the phases exhibited by our Moon, providing a spectacle three times a day which takes our Luna nearly a month. (A Martian Day is 24 hours 37 minutes 23 seconds.)

One result of this great speed is that through travelling so much faster than Mars rotates, it would appear to an observer on Mars to be going the reverse way to all other celestial bodies, rising in the west and setting in the east.

COMPLICATED PHENOMENON

Phobos would pass Deimos with great frequency and being often eclipsed would at times blot out Deimos as well, and so provide a most complicated phenomenon and spectacle for any possible Martian astronomer to explain. Moreover, moonshine would be an ever varying spectacle, but as they appear much smaller bodies than our Moon does, it would not be so obvious.

Phobos is calculated to be only about ten miles in diameter, but this is compensated for in apparent size by its nearness to Mars, an average of 3700 miles. Consequently Phobos would appear to anyone on Mars to be about one-third the diameter that our Moon appears to us.

Deimos is calculated to be even smaller than Phobos, between five and six miles in diameter. Being at an average of 12,500 miles above the planet's surface, Deimos would resemble Venus rather than our Moon, but would not appear so bright.

Deimos also speeds at a great rate round Mars; if it did not, it would fall on to the planet. It

takes 30 hours 18 minutes to complete a revolution round Mars, thus appearing more like a travelling star than a moon. But it would be eclipsed and appear to "go out" for several hours at a time.

Both of these satellites would be conveniently near for rocket experiments and a tempting objective for space-ship flights of any Martians who were inclined that way.

If any had the misfortune to succeed in reaching either Phobos or Deimos, however, the problem would be "holding on," for the lack of gravitational pull would make getting around either of these moons a very precarious matter. Even walking would be risky and to jump fatal—the Martians would just fall off.

G. F. M.

UNDERGROUND AIR SEARCH

The idea of airmen searching for subterranean sources of mineral wealth in Britain sounds a bit puzzling at first. But they are to do so by flying over the country and measuring the variation of the Earth's magnetic field from place to place. This was recently announced by the Ministry of Works.

The recordings of magnetic variation obtained by the flying men, added to what geologists already know of Britain's underground rock structure, may lead to the discovery of new mineral resources.

These aeromagnetic surveys, as they are called, have been extensively used in America and Asia in the ceaseless hunt for oil, which is often found in non-magnetic regions.

MODELS FROM BURNT MATCHES

Most of us think of matches as things to strike, use, and then throw away, but there are clever folk today who make much greater use of used matchsticks.

At a hobbies and pastimes display in Rotterdam recently a windmill made of 40,000 used matchsticks was displayed. A home-made violin was modelled by a German youth for another exhibition not long ago. He used 8000 matchsticks, dovetailing and sticking them together.

Nearly 100,000 matchsticks were used in seven months by an Englishman, Mr. A. E. Holland, to make models of houses, churches, a fort, a railway station, and a windmill while he lay on his sick bed.

The idea of making the models came to him in 1949 when he saw through his window some burnt matches lying on his garden path. He asked all his friends to collect burnt matches for him and then set to work.

CN Competition No. 6

WRIST-WATCHES TO BE WON!

HERE is another opportunity to win a gleaming new wrist-watch—there are five to be won by the boys and girls who send in the best entries to this week's competition. There will also be 5s. Postal Orders for ten runners-up.

The illustration below shows a camping scene in which the artist has made a number of deliberate mistakes. You should be able to find twelve, but to give you a start we point out that the boy on the left is wearing trousers with one long leg and one short. When you have found eleven other errors, neatly write all twelve (no more, no less!) on a postcard or piece of paper, add your full name, age, and address, and ask an adult to sign the entry as your own unaided work. Attach to it the competition token (marked CN Token) which you will find on the back page of this issue, and post to:

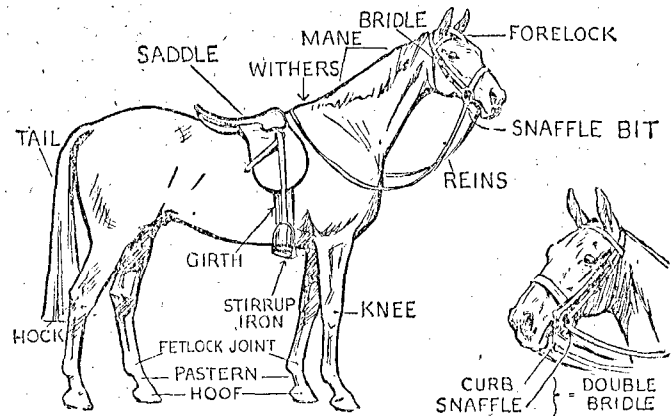
CN Competition No. 6,
3 Pilgrim Street, London, E.C.4 (Comp.),

to arrive by Tuesday, July 13, the closing date.

All readers under 17 living in Great Britain, Northern Ireland, and the Channel Islands may enter. The wrist-watches will be awarded for the five entries which are correct, or most nearly so, and the best written according to age. The Editor's decision is final.



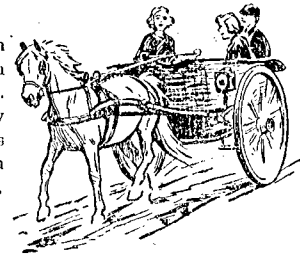
Items from "I-SPY HORSES and PONIES"



Here is a horse ready for riding—he has a hunting saddle and a bridle with a snaffle bit. The smaller drawing shows a double bridle fitted with two bits—a curb, and a snaffle. A horse is generally over 14½ hands in height, and a pony less than that. A hand is 4 inches, and the height is measured at the withers.

The tub-trap below has a small door at the back and seats along the sides.

I-SPY books are great fun and, what is more, they are much admired by parents and teachers. They are fully and accurately illustrated and from the titles below you will realise what a wide range of subjects is covered.



I-SPY

I-SPY appears daily in the NEWS CHRONICLE.



TITLES 6^p EACH

1. At the Seaside.
2. On the Farm.
3. History.
4. On a Train Journey.
5. Dogs.
6. In the Country.
7. At the Zoo—Animals.
8. At the Zoo—Birds and Reptiles.
9. In the Street.
10. On the Road.
11. The Sights of London.
12. Horses and Ponies.
13. Ships and Harbours.
14. Boats and Waterways.
15. Aircraft.
16. Cars.
17. The Army.
18. The Wheel.
19. Sport.

I-SPY COLOUR BOOKS—1/- EACH

- Birds
- Butterflies and Moths
- Wild Flowers
- Wild Fruits and Fungi

Ask your newsagent to show them to you.

I-SPY BOOKS

Published by the NEWS CHRONICLE

TRUMPET Ideal for all ages.
Amazing Value **21/6**
P.A.T. 216
C.O.D. ex.

FREE SELF-TUTOR

NOT A TOY—Musical Instrument—Really Plays. 15 in. long. 4 stops to give endless combinations. **EASY TO PLAY.** Richly engraved with dazzling gold finish. Mellow Tone. **PLAYS BUGLE CALLS.** Complete with attached case carton.

MONTROSE PRODUCTS
Dept. CNP.12, 623/7 Holloway Rd., London, N.19. ARChway 4426/7/8.

Send stamped, addressed envelope for list.
CAMPING TENT SALE
for Cyclists, Hikers, Beach, Gardens, or Children's Playtent
33/6 plus 2/- carr. C.O.D. ex.
New Junior Ridge Tent—in strong tent cloth. Complete with pegs. Two 2-piece poles in handy carrying bag. Lightweight. Simple to erect. Size 5' long, 4' wide, 3' high, 4" walls. Sleeps two people. Senior Size 39/6. Plus 2/6 carr. C.O.D. ex. 6' long, 4'6" wide, 3'9" high.

REAL RADIO DE LUXE CRYSTAL SET
Without Earphones **20/- NOT A TOY!**
REAL RADIO RECEPTION. Earphones essential. Ideal for Bedrooms, Invalids, Private Listening, Radio-minded boys, etc. **NO ELECTRICITY, NO BATTERIES.** Works anywhere. Bakelite case—unbreakable. Perfect Present. Radio's finest value. 4" x 2" x 4" Plus 1/6 post & pkg. C.O.D. extra.