Sun a Pulsating Star

Astronomy

By Gabriella Armellini

Signorina Armellini is director of the Royal Observatory of Rome, and here announces for the first time in English her important discovery.

From time to time, spots are visible on the sun and they are sometimes so large as to be seen by the naked eye, with the help, of course, of smoked glass. When examined through powerful telescopes, these spots appear as holes or fissures in the luminous surface.

Statistics have shown that the sun's surface appears to have the largest number of spots once in every eleven years, after which period a gradual decrease in the number, frequency and size of the spots is noted. At present, the spots are almost at their maximum.

It has now been ascertained, at the Astronomical Observatory of Rome, situated on the Capitol, that the diameter of the sun varies in proportion with the number and frequency of the spots.

The work of ascertaining this fact has been long and difficult, because the variations are slight and take place over long periods. Thus, before the theory could be formulated, several periods of eleven years had to elapse, handing on the result of their investigations as a legacy to those who were to come after them. Every day, at midday, for the last fifty years and more, on clear days, the sun's diameter is measured in the Roman Observatory by throwing the image of the sun on to a white screen, through an astronomical telescope which reproduces the image with a diameter of about one meter.

Measurements are carried out by means of a network of thin cobwebs, and in order to insure perfect accuracy are taken separately by three different astronomers, each of whom repeats the operation seven times.

The results of these observations, which have been carefully collected and investigated, have enabled the fact to be established that the diameter of the sun also varies in every period of eleven years, but that the sun is at its greatest diameter a little before the greatest (*Turn to next page*)

Pellagra—*Continued*

known to science, should preferably be given dead. It can be killed by stirring the dry yeast into water and boiling the mixture for about a minute. The adult dosage is one ounce a day, or two teaspoonfuls taken three times a day. A child under twelve years of age should be given half the adult dose. The diet should be increased as rapidly as the digestive ability of the patient permits. In the average case the patient, if carefully fed, will be fully convalescent in from six to twelve weeks.

The well balanced diet should be kept up all the year round, for one attack of pellagra does not confer immunity. If the diet again becomes deficient, the disease will come back again. One drawback in the poorer sections of the South in the past has been the lack of refrigeration to keep fresh meat during the summer months. This is one reason that accounts for the seasonal recurrence of the disease in the spring and summer months. At this time, too, the "crop money" received for the proceeds of the cotton harvest the preceding fall begins to run short. Consequently, there is less wherewithal for any small supplements to the staple menu of cornmeal and pork. When prices are high, of course, the condition is more aggravated still.

"Under proper treatment and with careful nursing, only a small percentage of cases die," Dr. Goldberger has pointed out. "Nevertheless, the actual number of deaths is deplorably large. As deplorable, if not even more so, is the great amount of sickness and debility, much of it vague and ill-defined, and thus frequently unrecognized, which pellagra must be charged with causing. It is probable that in each year for every death attributed to the disease there are fully 20 persons with clearly recognizable attacks and probably as many more with debility from the same cause, but not definitely marked as such. Indeed, in many of the southern states pellagra is still one of the foremost causes of death. In other parts of the country the disease is very much less common. This difference is due mainly to the different dietary habits of the people in the northern and western part of the country and to the better conditions of food supply."

It is felt by many physicians to be especially fortunate that the cause and prevention of this disease should have been so well worked out at a time of disaster, like the Mississippi flood, when the knowledge was so badly needed.

Nature Ramblings

By Frank Thone

Natural History

Kinkajou

We are often called upon to admire the wonderful help that nature gave to our poor cousin, the monkey, in providing him with a fifth hand in the form of a prehensile tail. Monkeys are not the only prehensile-tailed creatures in the world, but it cannot be denied that they fared better than most other creatures so provided, because they also got long arms and legs out of the evolutionary grab-bag, so that all five of their hands are on a more or less equal footing.

Less lucky is the kinkajou, a tree-dwelling relative of the raccoons, that lives in the American tropics, ranging from central Mexico southward to the Rio Negro in Brazil. The kinkajou has a long and a very handsome tail, with which it can take hold of a branch as readily and as firmly as any monkey. But it is about three sizes too long, when the kinkajou's short, raccoon-like legs are taken into account. Consequently, when the animal has grown tired of swinging from its branch, there is nothing for it to do but take hold of its own tail as though it were a rope or a vine, and climb back up, hand over hand.

A captured kinkajou makes a very attractive pet. With its short, close fur and its intelligent-looking face it looks like a sort of long-tailed live Teddy bear, and it is very fond of being scratched and stroked. It has the decided drawback, however, of being entirely too fond of young birds, and can no more be trusted near a poultry yard during chick-time than a cat. Of course, all this is of little value as a practical consideration in temperate countries, for tame kinkajous have so far been kept only in the tropics. But the time may come when we shall be willing to vary our collection of pets, and in that day the kinkajou may well come into its own.

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The Call of the Cow

Agriculture

SYDNEY HILLYARD, in the *Scientific Monthly:*

The United States will be the nursery for the great breeds of the future. One hundred and twenty-five thousand dollars has been paid in this country for a single bull—the world's record for dairy animals. The American wool sheep, the American hog, the American milch cow now lead the world, and we are rapidly coming up in other breeds. There is no knowing what can be done if no armies devastate the farms and no poison gas murders our animals. But let us have peace. We have heard the call of the wild, the call of the carpenter, the call of the cities, and several other calls, now let us hear the call of the cow.

Science News-Letter, May 12, 1928

The London Zoo has acquired a pair of young giraffes from Africa.

Remains of huts 1,000 years old are standing on the shore of the River Thames, in England.

The British government is to spend half a million dollars to encourage the drinking of milk.

Pulsating Sun—*Continued*

number of spots appears. In other words, when the sun is fully covered with spots, its diameter is smaller than when it is free from such spots.

As previously stated, the spots appear to be holes on the sun's surface. It is therefore maintained that in the absence of spots, the gases which form in the interior of the sun cannot find an exit, with the result that the diameter increases.

The spots then appear, and through them come heated gases. The latter pent up in the interior, come violently to the surface, and very often escape in the form of luminous springs, which can be seen with a spectroscope. The diameter of the sun then decreases. Subsequently, the number of the spots also lessens; gases, having no exit, accumulate in the interior, and the diameter once more increases.

The increase and the decrease are very slight, because the oscillation of the radius appears to be about seven hundred kilometers, a quantity which, at the distance of earth from the sun, is only perceptible with the most delicate astronomical apparatus.

The existence of these pulsations having now been ascertained, it is possible to classify the sun among those stars which are known as "pulsating stars," precisely on account of their variability. Therefore, all our planetary system is conducted by a palpitating center similar, as it were, to a huge, fiery heart.

Science News-Letter, May 12, 1928

Naive Natural History

Marine Biology

From *Punch,* reprinted in *Ward's Natural Science Bulletin* for January 1, 1882:

Oh! merry is the Madrepore that sits
beside the sea,
The cheery little Coralline hath many
charms for me;
I love the fine Echinoderms of azure,
green and gray,
That handled roughly, fling their arms
impulsively away;
Then bring me here the microscope
and let me see the cells,
Wherein the little Zoöphyte like garden floweret dwells.

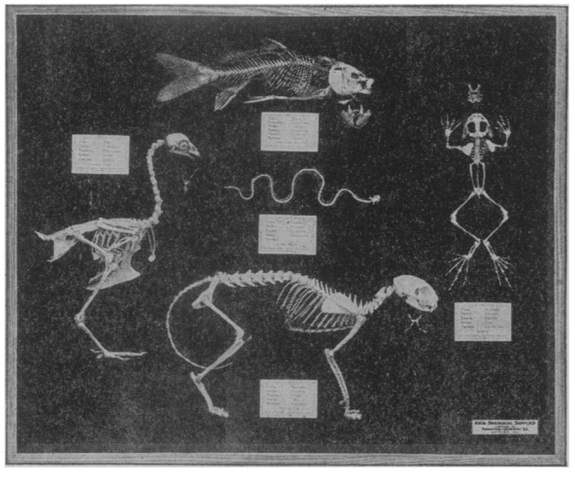
We'll take the fair Anemone from
off its rocky seat,
Since Rondeletius has said when fried
'tis good to eat;
Dyspeptics from Sea Cucumbers a
lesson well may win,
They blithely take their organs out
and then put fresh ones in.
The Rotifer in whirling round may
surely hear the bell,
With Oceanic Hydrozoids that Huxley knows so well.

You've heard of the Octopus, 'tis a
pleasant thing to know.
He has a ganglion makes him blush
not red, but white as snow;
And why the strange Cercaria, to go
a long way back,
Wears ever, as some ladies do, a
fashionable "sack;"
And now the Prawn has parasites
that on his head make holes,
Ask Dr. Cobbold, and he'll say they're
just like tiny soles.

Then study well zoölogy, and add unto
your store
The tales of Biogenesis and Protoplasmic lore;
As Paley neatly has observed, when
into life they burst,
The frog and the philosopher are just
the same at first.
But what's the origin of life remains
a puzzle still,
Let Tyndall, Haeckel, Bastian go
wrangle as they will.

Science News-Letter, May 12, 1928

High Grade Prepared Skeletons



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