

PHYSICS

Electric Charge of Positron Confirmed

THE FORCE with which the positive electron—newest addition to the bricks from which atoms are made—is attracted towards a neighboring oppositely charged body, has been roughly measured by Dr. Jean Thibaud, in the X-ray laboratories of the duc de Broglie, in Paris. The charge of the positive electron, better known in America, the country of its discovery, under the name of positron, is shown to be of the same order of magnitude as that of its companion, the negative electron.

Dr. Thibaud explains in a communication to *Nature*, how he placed the source of positrons between two plane parallel grid plates, one of which was grounded and the other charged first positively and then negatively. A noticeable deflection of the positron tracks was observed, amounting to 2.3 mm (about one tenth of an inch) when the charge on the plate was changed from +5,000 to -7,000 volts.

The electric charge of the positron has already been estimated from its deflection in an electromagnetic field pro-



COCK-HORSE ON ANCIENT GREEK VASE

The Cock-Horse, of Banbury Cross fame, has come to life on an old Greek vase. Here he is, with a horse's head and neck and forelegs and a bird's tail feathers and short legs. And to complete the picture as we know it in the modern nursery rhyme, a youth is riding the strange steed. The vase decorated with this mythical beast is one of the latest discoveries in the Athenian Agora, by Prof. T. Leslie Shear of Princeton University

duced by electric currents. The new electrostatic method described will give a more accurate determination of the ratio of the electric charge of the positron to its mass. The mass of the positron is estimated to be about the same as that of the negative electron.

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light of the nova fades compared with the behavior of lines of known origin will help identify the element and resolve the mystery of the corona."

The so-called "new star" R. S. Ophiuchi was originally discovered as a peculiar variable star identified by Harvard observers. It was later identified through spectral studies as a nova, a star that suddenly increases greatly in brilliance. In August this nova again flared up in typical nova fashion, the first news of this outburst being reported by L. C. Peltier, amateur astronomer of Delphos, Ohio. Immediately astronomers began careful analysis of the nova's fading light.

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Front Cover Picture

COULD YOU climb a smooth slide as the baby on the front cover does when you were a year and a half old.

Of course not. But perhaps you could have, had you been given the training that 18-months-old Johnny, pictured in one of his favorite exercises, has gone through; for his twin brother, Jimmy, who has lived the untrained life of a normal infant, cannot climb and skate and swim and dive like his brother. However, the normally-cared-for Jimmy sat alone, learned to reach for toys and stood alone at practically the same time as his twin who has been exercised since he was 20 days old.

With Johnny is pictured Dr. Myrtle B. McGraw who conducted this experiment at the Babies Hospital, New York City.

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ASTRONOMY

Light From Exploding Star May Solve Corona Riddle

DISCOVERY of green and red light spectral lines in the exploding "new star" in Ophiuchi that heretofore have been found only in the sun's corona, invisible except during the rare few minutes of total solar eclipse, promises to solve the most conspicuous riddle in astronomical spectroscopy.

Dr. W. S. Adams, director, and Dr. Alfred H. Joy, astronomer, of Mt. Wilson Observatory, Calif., have announced to the astronomical world that in a spectrogram of the nova R. S. Ophiuchi taken on October 2 they found the green corona line 5303 strong and the strong red line at 6374 shifted from position of the ionized silicon line previously observed. The present line, they reported, is almost certainly due to corona. These lines have appeared within the past three weeks. The Mt. Wilson astronomers find that the structure of the green line is very similar to line 4686 of ionized helium.

"The high significance of this discovery," Dr. Harlow Shapley, director of Harvard Observatory, commented in interpretation, "lies in its direct bearing on the problem of the nature of the sun's corona as well as its relation to the interpretation of novae. These two bright lines have heretofore been found only in spectra of the solar corona, never in stars, and their interpretation has so far baffled astro-physicists.

"The element that gives rise to them is unknown though oxygen has been suspected. Since the unravelling of most of the nebular mysteries and the identification of the strongest auroral radiations with oxygen, the coronal lines have remained as our most conspicuous riddle in astronomical spectroscopy.

"Finding the lines in recent spectrograms of the exploding atmosphere of the remarkable nova R. S. Ophiuchi may give us important hints as to their source. Their changing behavior as the