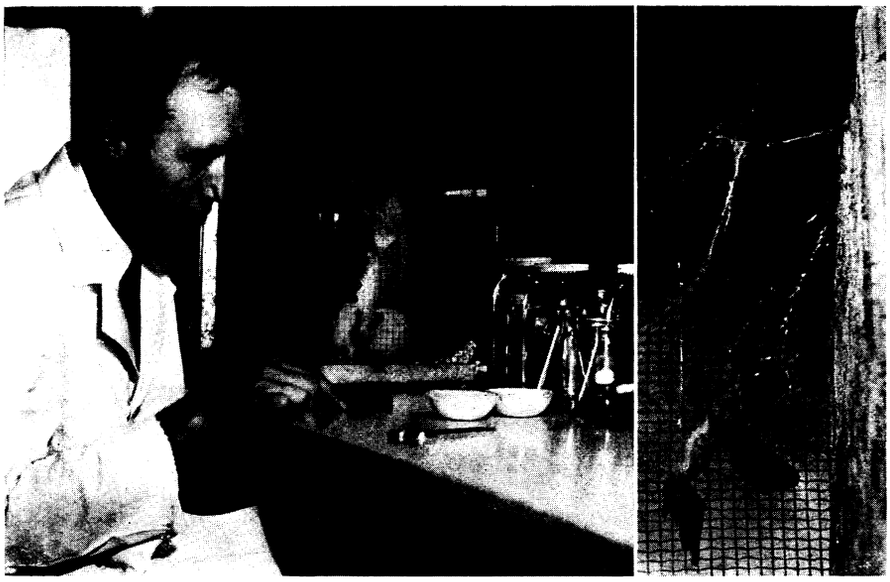

THE BLACK WIDOW FOILED

Dr. Fred D'Amour, University of Denver professor, has perfected a serum that is successful in treating victims of the black widow spider (shown in inset) whose bite is painful and often fatal. These spiders were once found only in rural districts but are now invading the cities. This one caught her grasshopper prey in a web built in a Denver coal bin. The web is characteristic, being entirely without pattern, a loose helter-skelter structure of very coarse strands which crackle when torn.

MATHEMATICS

New Mathematical Theory May Overthrow Einstein Concepts

Sir Shah Sulaiman, Indian Justice and Distinguished Mathematician, Links Newton Mechanics With Relativity

A NEW mathematical theory of relativity which may overthrow the world-famous theories of Prof. Albert Einstein has been presented before the United Provinces Academy of Sciences by Sir Shah Sulaiman, Kt., M.A., LL.D. and chief justice of the High Court of Allahabad.

The distinguished Indian justice is an Oxford-trained mathematician with a wide reputation in the field of relativistic mathematics.

Scientists throughout the world are checking through the mathematics of Sir Shah's report because it appears to be a sane borderline between classical mechanics of Sir Isaac Newton and the newer concepts of Prof. Einstein.

The mathematical equations of the Indian justice-scientist reduce to the equations of Newton as a first approximation and likewise to those of Einstein as a second approximation.

Describing such a two-way working of the new theory, Sir Shah reports, "If it can be shown that the ordinary principles of dynamics, when applied to moving bodies, themselves yield modified forms of equations, which as a first approximation reduce themselves to Newton's forms, and as a second approximation to Einstein's forms, the Newtonian mechanics would be restored to the eminent position it occupied before its dethronement by relativity, and there would no longer be an absolute necessity to accept the extraordinary hypotheses on which relativity is founded."

Sir Shah points out that from his new theory, theoretical values derived from equations tally more exactly with observed values. The predicted deflection of star light as it passes close to the sun comes out to be 2.66 times that predicted by New- (*Turn to Page* 349)

MEDICINE

Develops Anti-Venom Serum For Black Widow

A SERUM that counteracts the effect of the often fatal bite of the black widow spider has been perfected by Prof. Fred D'Amour of the University of Denver.

This serum is believed to be the first highly potent anti-venom serum against the bite of these spiders.

Obtained from the blood of rats that had been given regular small injections of venom removed from the spiders' glands, the serum first proved its worth when a vineyard worker was brought to Prof. D'Amour's laboratory suffering from a black widow spider bite. Although three hours elapsed from the time this man was bitten until a small quantity of serum was administered under a physician's guidance, immediate relief was given.

Due to their alarming increase in numbers throughout the country, the black widow spiders are believed likely to become a far greater menace than the rattlesnake. For whereas the rattlesnake is found only in isolated places, these poisonous spiders are invading cities. Lately they have been found in bedrooms and garages, as well as in furnace rooms. Several deaths from their bites have been reported in the United States within the past two years.

While the alleviation of mankind's suffering can not be measured in dollars and cents, the new serum may prove to be worth thousands of dollars to the agricultural world alone. Vineyardists in western Colorado, parts of Utah, and northern California reported several instances where entire crops of grapes were unpicked last year, due to the pickers' refusal to work in vineyards infested by black widow spiders. In some regions throughout the Midwest tomato vines were badly infested too. With a protective serum available, pickers will no longer fear to carry on their work.

Prof. D'Amour first became interested in the black widow spider upon hearing of the work of Dr. Allan Blair of the University of Alabama. This intrepid scientist allowed himself to be bitten by a large specimen of black widow spider and suffered agonizing pain for hours, in order to allow fellow scientists to witness and record every symptom. (*Turn to Page* 340)

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ton's laws and closer to observations than Einstein's prediction of twice the angle derived by Newton's mechanics.

The shift of the Fraunhofer lines in the sun's spectrum is predicted closer by Sir Shah's theory than by Prof. Einstein. The shift comes out to one-half that predicted by relativity.

Moreover, both velocities of recession and approach are permissible for nebulae so that the universe is stable and not necessarily expanding.

Discussing the principles of Newton and those of Einstein Sir Shah says:

"Newton assumed that gravitation had an instantaneous effect, however, distant the object might be. This implied that its velocity was infinite. He further assumed that the same law of gravitation applied between two bodies, whether they were at rest or in relative motion. Later observations showed that his law was inaccurate for moving bodies.

"Einstein has given a slightly more accurate law, but at the complete sacrifice of the principles of Newton. Relativity denies the absoluteness of space, time and motion, but can hardly deny the absoluteness of angular motion or sudden change of motion.

"When a boy spins a top, does he give an absolute rotational motion to the top or does he set the entire universe revolving round the top in the opposite direction?" asks the Indian mathematician.

"Or again," he adds, "when a motorist suddenly puts on his brakes, does he stop his car or does he push the whole universe on a backward path?

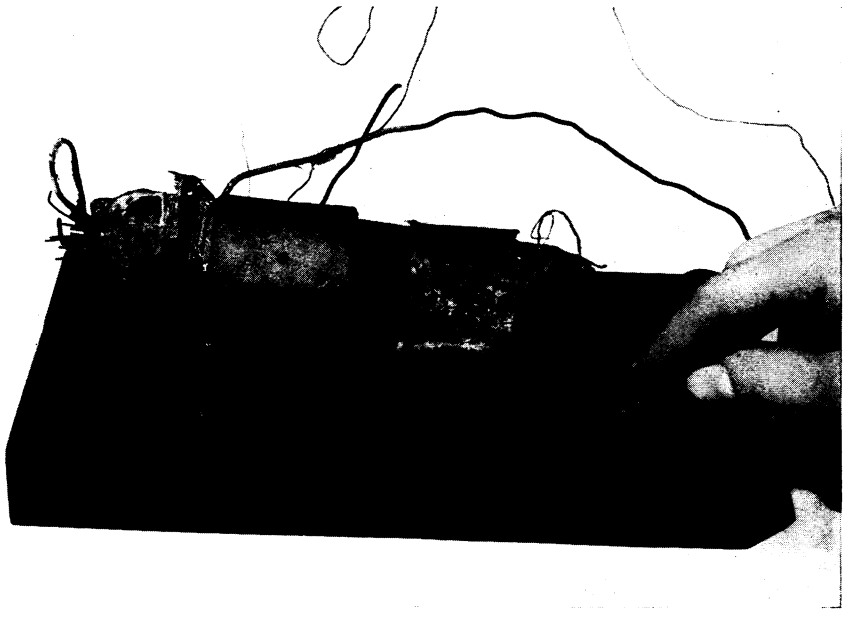
"Relativity makes the velocity of light absolute, and although it is a known finite velocity (300,000 kilometers a second), the properties of infinity are attributed to it; and no velocity, howsoever great, when added to it or subtracted from it, can ever make any difference.

"Relativity makes space finite, and yet makes its finite limit incapable of being reached except in infinite time, by making time itself slow down with distance, and ultimately become stationary."

It is to circumvent such extraordinary conditions that Sir Shah developed his new theory, which is based on more reasonable grounds and yet predicts phenomena equally as well or even better than Einstein's relativity.

It is common knowledge that many scientists have accepted relativity only because of what it would do and not because they agreed with some of the radical fundamental assumptions.

Science News Letter, December 1, 1934



DID JOSEPH HENRY MAKE THIS APPARATUS?

Princeton University has been given the crude induction coil shown above as a gift from the estate of Dr. John MacLean, president of the University from 1854 to 1868. It is believed to have been made by Joseph Henry, American rival of Michael Faraday in the field of electricity.

PHYSICS

Princeton Receives Coil Said to Be Joseph Henry's

AN induction coil of crude design and workmanship, presented to Princeton University by the estate of Dr. John MacLean, president of the university from 1854 to 1868, has aroused great interest in the physics department because of the likelihood that it was made and used by Joseph Henry, renowned American physicist who taught and experimented at Princeton from 1832 to 1848.

Henry was one of the foremost electrical experimenters of his day, observing induced currents as early as 1830, although he failed to publish any account of his work until after Michael Faraday's epoch-making announcement of the same discovery in 1832. The machine around which the present discussion centers is of such undoubted age that many are convinced that it belonged to Henry, whose memoirs describe several experiments which must have involved the use of a coil very similar to the newly discovered one.

Science News Letter, December 1, 1934

RADIO

Tuesday, December 4, 4:30 p. m.

THE FIGHT AGAINST THE TERMITES, By Dr. Charles A. Kofoid, Professor of Zoology, University of California.

Tuesday, December 11, 4:30 p. m.

CHRISTMAS TREES, By F. A. Silcox, Chief Forester, U. S. Forest Service.

In the Science Service series of radio addresses given by eminent scientists over the Columbia Broadcasting System.