

PHYSICS

# Eddington Reveals Details of His Theory of the Electron

If New Paper Stands Test of Scientists It Will Remove Chief Obstacle to Progress of Physics, American Thinks

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SIR ARTHUR EDDINGTON, the British scientist, has finally laid his mathematical cards on the table and offered in the *Proceedings of the Royal Society of London* what he claims is a rigorous proof of his contentions about the electron. He has, during the past three years, published seven other papers on this subject, none being complete. Each time he left some unsatisfactory gaps in his proofs but asserted, nevertheless, that he was sure all would be well and that the next paper would be conclusive.

The scientific world was decidedly incredulous. The theory did not appear plausible. It was difficult enough so that physicists who were capable of handling the material considered it would not pay to take the subject too seriously until Eddington himself had worked it through. They agreed it was a clever idea, but felt that a scientist ought to have more than a hunch before offering to publish a result.

Now Eddington is a brilliant man. He has made mistakes, it is true, but when he publishes an eighth paper, one can scarcely disregard it. Such persistence must be well supported. Moreover, this paper is attractively arranged. It begins by pointing out some of the errors of the previous papers. The premises are acceptable. The results claimed are of most extraordinary significance. Finally it does carry weight when a man like Eddington definitely says his calculations are rigorous.

Physicists, with the help of mathematicians, will now undertake to check the argument and in a few months we shall know whether there are any serious flaws in it. The difficulty in reading the article lies in the fact that two separate fields are involved, viz., quantum mechanics and relativity. There are not many sufficiently experienced in both of these to be able to read the proofs without hard work. The pre-

sentation is extremely concise and the reader will have to fill in many large gaps—certainly no statements can be accepted without verification. Prestige counts for little in these matters.

No matter how critical the previous attitude was, the proofs, if correct, will be readily accepted. Eddington will then have obtained undoubtedly the greatest results of both the quantum theory and of the relativity theory. The theory of the electric charge will have been improved to a degree of perfection unmatched in natural science. The chief obstacle in the path of progress of the last three years will have been removed and physics (Turn to page 315)

MEDICINE

## May Get Tularemia From Mosquito Bite

MOSQUITOES, which play an important role in the transmission of malaria and yellow fever, may also carry tularemia or rabbit fever, Cornelius B. Philip, Gordon E. Davis and R. R. Parker of the U. S. Public Health Service have found in studies made at the Rocky Mountain spotted fever laboratory at Hamilton, Mont.

The part played by the mosquito in carrying tularemia is purely mechanical.

If a mosquito is interrupted while feeding on an infected animal, and bites soon after, he can pass the infection along to his next victim. The disease may also be acquired when infected mosquitoes are crushed on the skin, with or without subsequent rubbing, and when mosquito excrement is deposited on the skin.

The investigations here were undertaken after a few cases had been reported in each of which a mosquito bite was thought to have given the infection. While this is possible, the scientists believe it would be a very rare occurrence.

"It is probable that at most only infrequent infection of man would occur in this manner," they concluded.

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ARCHAEOLOGY

## Eskimo Burial Mystery Cleared Up at Point Barrow

THE MYSTERY of whether Eskimos of Point Barrow had an old custom of burying their dead in houses of the villages, or whether they built house-like sepulchres for them, has been cleared up by the excavation of ancient graves.

The solution of the mystery is that Eskimo dead were not buried in house-like tombs at all, is the report brought back by James A. Ford, who has spent more than a year continuously in the Alaskan Arctic, on an expedition for the U. S. National Museum.

Digging into small natural knolls in prehistoric Eskimo graveyards at Nuna-vaak and at Utkiavik, on Point Barrow, Mr. Ford found burials of some very old, prehistoric Eskimos. Their earthen tombs were made by slashing off the top



SKULL OF A BOW-HEAD WHALE